

Life Is On

**eliwell**<sup>TM</sup>  
by Schneider Electric

# PRODUCT CATALOGUE

Refrigeration, Systems, Thermoregulation



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# **Product catalogue**

Refrigeration, Systems, Thermoregulation

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Eliwell operates in the commercial, industrial and catering refrigeration sector, offering high technological innovation and efficiency products and solutions.

Eliwell controllers are the ideal solution for compressor racks and equipment. They guarantee quality and safe preservation of fresh and frozen foods, providing the best refrigeration plant results, energy savings and reduced maintenance.

The vast range of sizes available makes Eliwell controllers fully adaptable to a vast range of applications.

Eliwell products are characterised by:

- › Reliability
- › Simplicity
- › Energy saving
- › Minimum environmental impact



# IDPlus 902/961

32x74 cold/hot thermostats



Codes	Descr.	Relay capacity	Power supply
<b>IDP11D07*0000</b>	IDPlus 902 NTC	8A	230V~
<b>IDP11D03*0000</b>	IDPlus 902 NTC	8A	12V~/=
<b>IDP17D07*0000</b>	IDPlus 961 NTC	2Hp	230V~
<b>IDP17D03*0000</b>	IDPlus 961 NTC	2Hp	12V~/=

\*The number or letter in this position indicates the languages available for the code:

0=IT; A=GR; C=CZ; E=EN; F=FR; G=DE; I=FI; L=FL; N=NL; O=PO; P=PT; R=RU; S=ES; T=TR; W=SV; Y=NO; Z=PT(BR).

## Applications

The controllers in the IDPlus 902 and 961 ranges are new-generation devices with one activation point, capable of operation in conjunction with both heated applications and static cold storage units at normal temperatures (over 0°C). IDPlus 902 and 961 controllers are equipped with the following functions: **Deep Cooling Cycle** (advanced algorithm that allows a rapid reduction in temperature), **Easy Map** (function that allows multiple preloaded machine configurations) and **Condenser Over Heating** (function that allows monitoring of the compressor discharge temperature, notifying the need for maintenance of the condenser).

## Common features

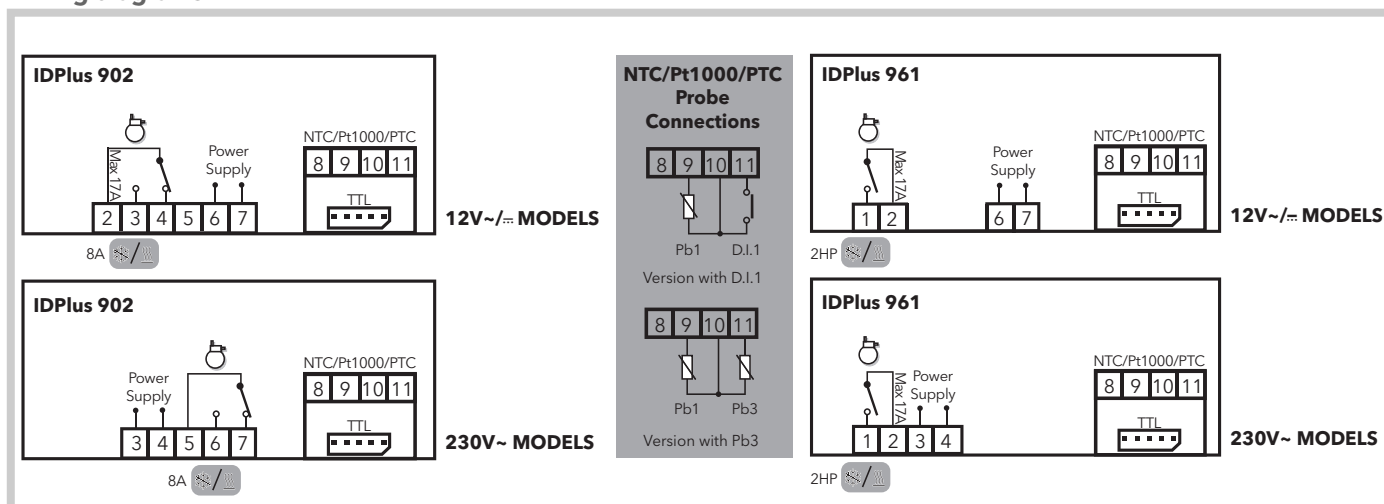
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Functions</b>	HACCP, DCC, Easy Map, COH
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Connectivity</b>	can be connected to Televis <b>System</b> and ModBus
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Accessories</b>	New USB/TTL Unicard for uploading/downloading parameters

## Technical data

	IDPlus 902	IDPlus 961
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...150.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...150.0°C</li> </ul>
Display:	with decimal point * 3 digits + sign	with decimal point * 3 digits + sign
Analogue inputs:	1 PTC / NTC / Pt1000 *	1 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)*	1 digital (SELV) / analogue (PTC/NTC/Pt1000)*
Connections:	TTL port for connection to Unicard/Copy Card or Televis <b>System</b> /ModBus monitoring device*	TTL port for connection to Unicard/Copy Card or Televis <b>System</b> /ModBus monitoring device*
Digital outputs:	1 SPDT ½Hp 8(4)A 250V~	1 SPST 2 Hp 12(12)A 250 V~
Measurement range:	-55.0...150.0°C	-55.0...150.0°C
Accuracy:	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	3W max	3W max
Power supply:	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 12V~/= ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 12V~/= ±10% 50/60Hz</li> </ul>
HACCP:	present	present

\*(selectable by parameter).

## Wiring diagrams



# IDPlus 961 ICE BANK

32x74 refrigeration thermostats



Codes	Descr.	Relay rating	Power supply
IDP17DB70EA00	IDPlus 961 ICE BANK	2Hp	230V~
L56H2001001	L56 ice sensor		
L56H3001001	L56 ice sensor		

## Applications

**IDPlus 961 ICE BANK** is a controller designed to offer a compact, efficient solution to control the refrigeration of drink dispensers, such as beer and soft drinks. Thanks to platform versatility and a library of available functions, Eliwell has integrated control of temperature and ice level into a single controller that can be parametrized from the keyboard to adapt to the various application configurations easily.

## Common features

<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage temperature</b>	-30...85°C
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Function</b>	Presence of water/ice, ice thickness, temperature control
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Accessories</b>	New USB/TTL Unicard for uploading/downloading parameters

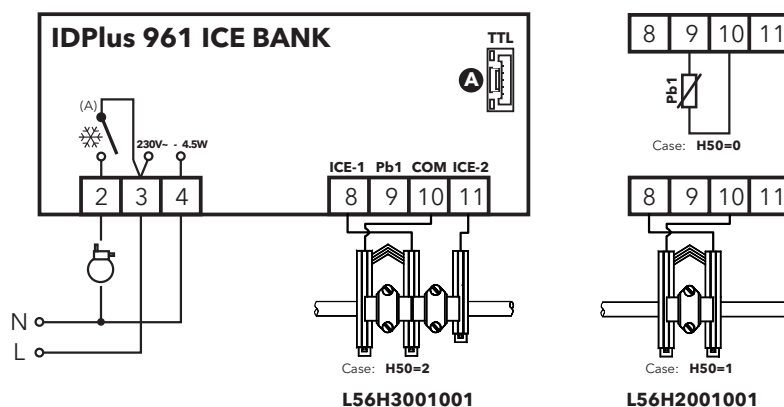
## Technical data

### IDPlus 961 ICE BANK

Display range:	NTC probe: -50.0...110.0°C
Display:	with decimal point * 3 digits + sign
Analogue inputs:	1 x NTC, 1 x L56 ice sensor
Connections:	TTL port for connection to Unicard/Copy Card
Digital outputs:	1 SPST 2 Hp 12(12)A 250 V~
Measurement range:	-55.0...110.0°C
Accuracy:	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C
Power consumption:	3W max
Power supply:	230V~ ±10% 50/60Hz

\* selectable by parameter

## Wiring diagrams





# IDPlus 971 - IDPlus 974

32x74 refrigeration thermostats



Codes	Descr.	Relay capacity	Power supply
IDP29DB7*0000	IDPlus 971 NTC	2Hp/8A	230V~
IDP29DB3*0000	IDPlus 971 NTC	2Hp/8A	12V~/∞
IDP2EDB7*0000	IDPlus 974 NTC	2Hp/8A/5A	230V~
IDP2EDB3*0000	IDPlus 974 NTC	2Hp/8A/5A	12V~/∞

\*The number or letter in this position indicates the languages available for the code:

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## Applications

Controllers in the IDPlus 971 range are new-generation devices suitable for static refrigeration units at normal and low temperatures; controllers in the IDPlus 974 range are suitable for static and ventilated refrigeration units at low temperatures. IDPlus 971 and 974 controllers are equipped with the following functions: **Deep Cooling Cycle** (advanced algorithm that allows a rapid reduction in temperature), **Easy Map** (function that allows multiple preloaded machine configurations) and **Condenser Over Heating** (function that allows monitoring of the compressor discharge temperature, notifying the need for maintenance of the condenser).

## Common features

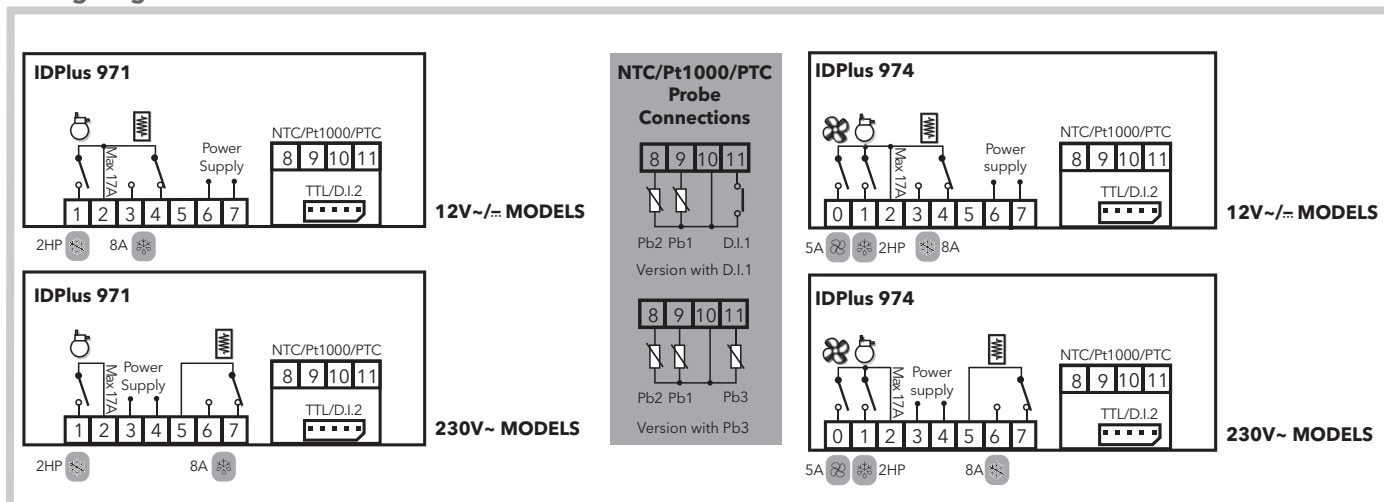
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Function</b>	HACCP, DCC, Easy Map, COH
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Connectivity</b>	can be connected to TelevisSystem and ModBus
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Accessories</b>	New USB/TTL Unicard for uploading/downloading parameters

## Technical data

	IDPlus 971	IDPlus 974
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...150.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...150.0°C</li> </ul>
Display:	with decimal point * 3 digits + sign	with decimal point * 3 digits + sign
Analogue inputs:	2 PTC / NTC / Pt1000 *	2 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*
Connections:	TTL port for connection to Unicard/Copy Card or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicard/Copy Card or TelevisSystem/ModBus monitoring device*
Digital outputs:	1 SPDT ½Hp 8(4)A 250V~ 1 SPST 2 Hp 12(12)A 250 V~	1 SPDT ½Hp 8(4)A 250V~ 1 SPST 2 Hp 12(12)A 250 V~ 1 SPST 5(2)A 250V~
Measurement range:	-55.0...150.0°C	-55.0...150.0°C
Accuracy:	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	3W max	3W max
Power supply:	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 12V~/∞ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230V~ ±10% 50/60Hz</li> <li>• 12V~/∞ ±10% 50/60Hz</li> </ul>
Buzzer:	present	present
HACCP:	present	present

\* selectable by parameter

## Wiring diagrams



# IDPlus 978

32x74 universal refrigeration thermostat



Codes	Descr.	Relay capacity	Power supply
IDP24DB7*0000	IDPlus 978 NTC	1.5Hp	230V~

\*The number or letter in this position indicates the languages available for the code:  
0=IT; E=EN; F=FR; G=DE; R=RU; S=ES; Z=PT(BR).

## Applications

Controllers in the IDPlus 978 range are new-generation devices suitable for small and medium-sized mono-blocks. IDPlus 978 controllers are equipped with the following functions: **Deep Cooling Cycle** (advanced algorithm that allows a rapid reduction in temperature), **Easy Map** (function that allows multiple preloaded machine configurations) and **Condenser Over Heating** (function that allows monitoring of the compressor discharge temperature, notifying the need for maintenance of the condenser).

## Common features

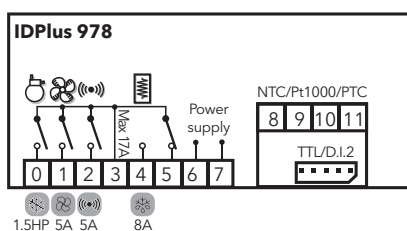
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Function</b>	HACCP, DCC, Easy Map, COH
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Connectivity</b>	can be connected to Televis <b>System</b> and ModBus
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Accessories</b>	New USB/TTL Unicard for uploading/downloading parameters

## Technical data

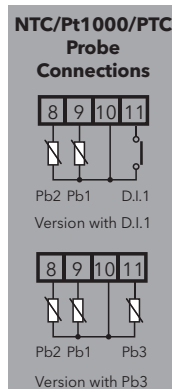
	IDPlus 978
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...150.0°C</li> </ul>
Display:	with decimal point * 3 digits + sign
Analogue inputs:	2 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*
Connections:	TTL port for connection to Unicard/Copy Card or Televis <b>System</b> /ModBus monitoring device*
Digital outputs:	1 SPDT ½Hp 8(4)A 250V~ 1 SPST 5A 250V~ 1 SPST 1.5HP 10(6)A 250V~ 1 SPST 5A 250V~
Measurement range:	-55.0...150.0°C
Accuracy:	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C
Power consumption:	3W max
Power supply:	230V~ ±10% 50/60Hz
Buzzer:	present
HACCP:	present

\* selectable by parameter

## Wiring diagrams



230V~ MODELS



# ID 985 /S/E/CK - Echo

32x74 refrigeration thermostats



Codes	Descr.	Power supply	Power supply
<b>ID34DR2SCDH00</b>	ID 985/S/E/CK	1.5Hp	100...240V~
<b>EH000010VE000</b>	Echo		

\*The number or letter in this position indicates the languages available for the code:  
0=IT; E=EN; F=FR; G=DE; R=RU; S=ES; Z=PT(BR).

## Applications

ID 985 controllers are suitable for any application on ventilated refrigeration units at normal or low temperature. The Echo is a remote signal repeater which can be connected to ID 985/S/E/CK controllers.

ID 985 /S/E/CK compact electronic controllers, specifically designed for supermarket refrigeration systems, are equipped with on-board integrated RS-485, remote display (Echo) and switching power supply; they guarantee quality and safety in the preservation of fresh and frozen foods and ensure the maximum efficiency of the refrigeration system in terms of energy saving.

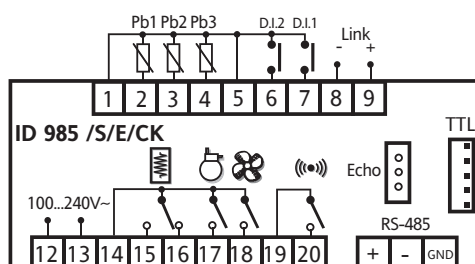
## Common features

<b>Front panel protection rating</b>	IP65	<b>Operating temperature</b>	-5...55°C
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	ID 985/S/E/CK	Echo
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -50.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -50.0...140.0°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	3 PTC or NTC *	-
Digital inputs:	2 voltage-free inputs	-
Connections:	TTL port for connection to Copy Card and TelevisSystem or to systems based on ModBus protocol Internal RS-485 for connection to TelevisSystem or to systems based on ModBus protocol	3-way connection (GND, data, 12V) on terminal block with quick connection
Digital outputs:	3 SPST 5(2)A 1/4hp 250V~ + 1 SPDT 8(3)A 250V~	-
Measurement range:	-55...140°C	-
Accuracy:	better than 0.5% of integral-scale + 1 digit	-
Resolution:	0.1°C	1 or 0.1°C
Power consumption:	2.5W max	-
Power supply:	100...240V~ ±10% 50/60Hz	from the instrument to which it is connected
Dimensions:	front panel 74x32mm, depth 66mm	front panel 48x28.6mm, depth 15mm
Installation:	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4mm (+0.2/-0.1mm) drilling template
Output for Echo:	present (/E model)	-
Link:	present (/CK model)	-
Clock:	present (/CK model)	-

## Wiring diagrams



# ICPlus 902

32x74 cold/hot thermostats



Codes	Descr.	Probe*	Power supply
ICP11D0750000	ICPlus 902 NTC-PTC 230V	NTC/PTC	230V~
ICP11D0450000	ICPlus 902 NTC-PTC 12/24V~/=	NTC/PTC	12...24V~/12...36V=

\*selectable by parameter

## Applications

ICPlus 902 controllers are one-step electronic devices, used to control temperature. They are compatible with Televis**System** and with Modbus protocol monitoring systems.

## Common features

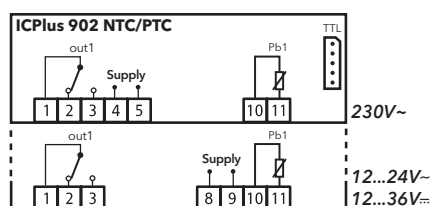
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	0...55°C
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

ICPlus 902 NTC/PTC	
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -50.0...140.0°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *
Digital inputs:	not available
Connections:	TTL port for connection to USB Unicard, Televis <b>System</b> and systems with ModBus protocol
Digital outputs:	1 SPDT 8(4)A 250V~
Measurement range:	from -50 to 140
Accuracy:	better than 0.5% of end of scale+1 digit
Resolution:	0.1 or 1°C
Power consumption:	<ul style="list-style-type: none"> <li>• 3W for 12...24V~ model</li> <li>• 3W for 230V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12V~, 24V~, 12...24V~/12...36V= (°) ±10% 50/60Hz</li> <li>• 115V~/230V~ ±10% 50/60Hz</li> </ul>

\* selectable by parameter (°) non-insulated power supply

## Wiring diagrams





# ICPlus 915

32x74 cold/hot thermostats



Codes	Descr.	Probe*	Power supply
ICP22JI750000	ICPlus 915 J/K PT100 230V	J/K PT100	230V~
ICP22JI450000	ICPlus 915 J/K PT100 12/24V~/~	J/K PT100	12...24V~/12...36V~
ICP22DI750000	ICPlus 915 NTC-PTC 230V	NTC/PTC	230V~
ICP22DI450000	ICPlus 915 NTC-PTC 12/24V~/~	NTC/PTC	12...24V~/12...36V~
ICP22I0750000	ICPlus 915 V/I 230V	V/I	230V~
ICP22I0450000	ICPlus 915 V/I 12/24V~/~	V/I	12...24V~/12...36V~

\*selectable by parameter

## Applications

IC Plus 915 controllers are electronic two-step devices, either dependent or independent or with neutral zone, used for the control of temperature, relative humidity and pressure. They are compatible with Televis**System** and with Modbus protocol monitoring systems.

## Common features

<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	0...55°C
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

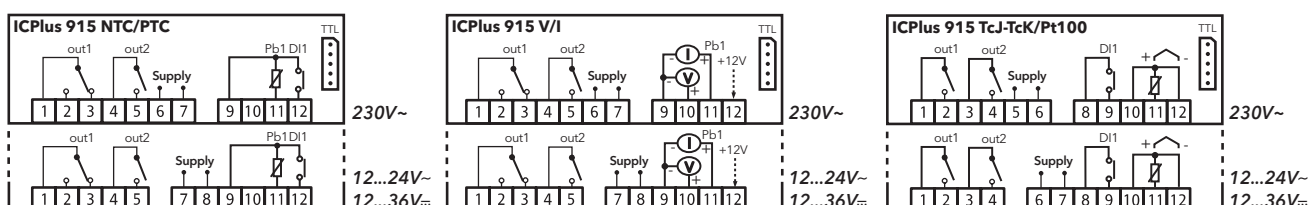
## Technical data

	ICPlus 915 NTC/PTC	ICPlus 915 V/I	ICPlus 915 TC/Pt100
Display range:	<ul style="list-style-type: none"> <li>NTC probe: -50.0...110.0°C</li> <li>PTC probe: -50.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>-199...199 *</li> <li>-199.9...199.9 *</li> <li>-1999...1999 *</li> </ul>	<ul style="list-style-type: none"> <li>Pt100 probe: -150...650°C</li> <li>TcJ probe: -40...750°C</li> <li>TcK probe: -40...1350°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 V-I (0...1V, 0...5V, 0...10V, 0...20mA, 4...20mA)*	1 Pt100 or 1 TcJ/TcK
Digital inputs:	1 clean contact at extra low safety voltage	not available	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to USB Unicard, Televis <b>System</b> and systems with ModBus protocol	TTL port for connection to USB Unicard, Televis <b>System</b> and systems with ModBus protocol	TTL port for connection to USB Unicard, Televis <b>System</b> and systems with ModBus protocol
Digital outputs:	1 SPDT 8(4)A 250V~ + 1 SPST 8(4)A 250V~	1 SPDT 8(4)A 250V~ + 1 SPST 8(4)A 250V~	1 SPST 8(4)A 250V~ + 1 SPST 8(4)A 250V~
Measurement range:	from -50 to 140	from -999 to 1000	from -150 to 1350
Accuracy:	better than 0.5% of end of scale+1 digit	better than 0.5% of end of scale+1 digit	Pt100: 0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C TcJ: 0.4% for whole scale + 1 digit TcK: 0.5% for whole scale + 1 digit, 0.3% from -40 to 800°C
Resolution:	0.1 or 1°C	0.1 or 1°C	Pt100: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond TcJ: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond TcK: 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°)</li> <li>±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°)</li> <li>±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°)</li> <li>±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>

\* selectable by parameter

(°) non-insulated power supply

## Wiring diagrams



# IC 917/PID (SSR)

PID 32x74 cold/hot thermostats



Codes	Descr.	Probe*	Power supply
IC12DI0TMD700	IC 917/PID	NTC/PTC	230V~
IC12ZI0TMD700	IC 917/PID	TC/Pt100	230V~
IC1RDI0TMD700	IC 917/PID SSR	NTC/PTC	230V~
IC1RZI0TMD700	IC 917/PID SSR	TC/Pt100	230V~

\*selectable by parameter

## Applications

IC 917 controllers are electronic two-step devices, either dependent or independent, ON/OFF action, PD, PID, Soft Start function and Autotuning

## Common features

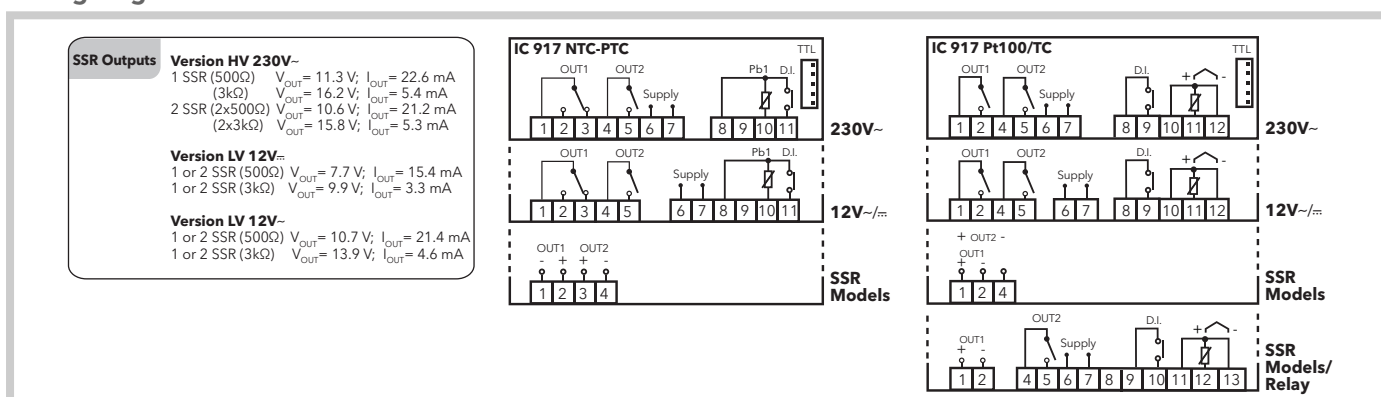
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 74x32mm, depth 59mm	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
		<b>Soft Start Function</b>	present

## Technical data

	IC 917/PID NTC/PTC (SSR)	IC 917/PID TC/Pt100 (SSR)
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• Pt100 probe: -150...650°C</li> <li>• TcJ probe: -40...750°C</li> <li>• TcK probe: -40...1350°C</li> </ul>
Display:	3 and a half digits + sign	3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 Pt100 or 1 TcJ/TcK*
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 1/2hp 250V~ • 1 SPST 8(3)A 1/2hp 250V~ <b>SSR models: please see wiring diagram</b>	2 SPST 8(3)A 1/2hp 250V~ <b>SSR models: please see wiring diagram</b>
Measurement range:	from -55 to 140°C	from -150 to 1350°C
Accuracy:	better than 0.5% of end of scale+1 digit	Pt100:0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C TcJ:    0.4% for whole scale + 1 digit TcK:    0.5% for whole scale + 1 digit, 0.3% from -40 to 800°C
Resolution:	0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond	Pt100:0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond TcJ:    0.1°C (0.1°F) up to 199.9°C, (1°F) beyond TcK:    0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>• 1.5W for 12V~ model</li> <li>• 3W for 230V~ model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12V~ model</li> <li>• 3W for 230V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12V~/~ ±10% 50/60Hz</li> <li>• 230V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12V~/~ ±10% 50/60Hz</li> <li>• 230V~ ±10% 50/60Hz</li> </ul>
Alarm:	optional	optional

\* selectable by parameter

## Wiring diagrams



# EMPlus 600

Temperature, humidity, pressure indicators



Codes	Descr.	Probe*	Power supply
<b>EMP60D0350000</b>	EMPlus 600 NTC-PTC	NTC/PTC	12V~/~
<b>EMP60D0450000</b>	EMPlus 600 NTC-PTC	NTC/PTC	12...24V~/~
<b>EMP60D0750000</b>	EMPlus 600 NTC-PTC	NTC/PTC	230V~
<b>EMP60P0350000</b>	EMPlus 600 Pt100/TCJ-K	Pt100/TC	12V~/~
<b>EMP60P0450000</b>	EMPlus 600 Pt100/TCJ-K	Pt100/TC	12...24V~/~
<b>EMP60P0750000</b>	EMPlus 600 Pt100/TCJ-K	Pt100/TC	230V~
<b>EMP60I0350000</b>	EMPlus 600 V-I	4...20mA/0...10V	12V~/~
<b>EMP60I0750000</b>	EMPlus 600 V-I	4...20mA/0...10V	230V~

\*selectable by parameter

## Applications

The EMPlus 600 is a device for measuring temperature, humidity and pressure in commercial refrigeration and industrial applications

## Common features

<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

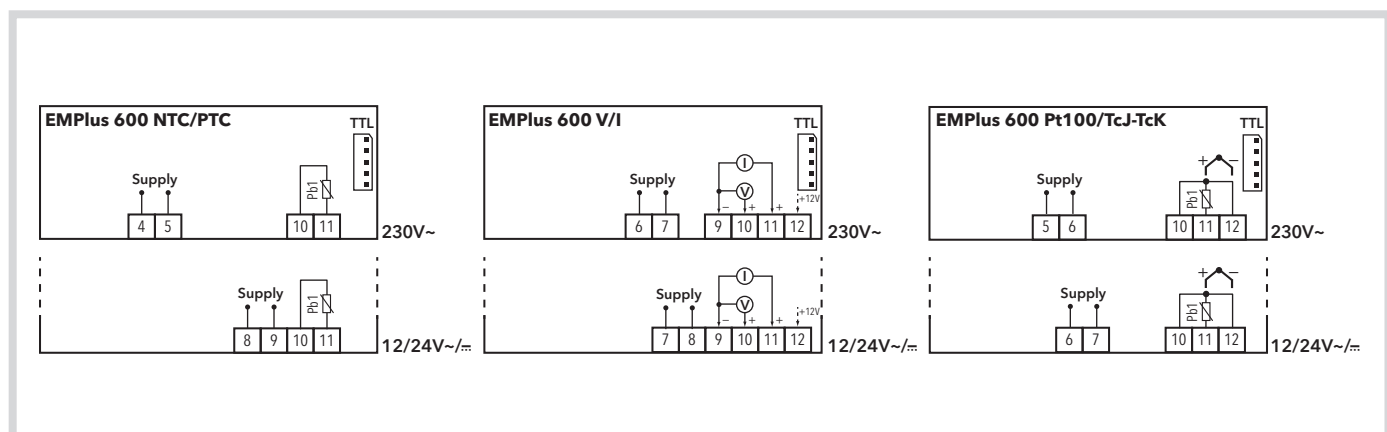
## Technical data

	EMPlus 600 NTC/PTC	EMPlus 600 V/I	EMPlus 600 TC/Pt100
Display range:	<ul style="list-style-type: none"> <li>NTC probe: -50.0...110.0°C</li> <li>PTC probe: -50.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>-199...199 *</li> <li>-199.9...199.9 *</li> <li>-1999...1999 *</li> </ul>	<ul style="list-style-type: none"> <li>Pt100 probe: -150...650°C</li> <li>TcJ probe: -40...750°C</li> <li>TcK probe: -40...1350°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 V-I (0...1V, 0...5V, 0...10V, 0...20mA, 4...20mA)*	1 Pt100 or 1 TcJ/TcK
Connections:	TTL port for connection to USB Unicard, TelevisSystem and systems with ModBus protocol	TTL port for connection to USB Unicard, TelevisSystem and systems with ModBus protocol	TTL port for connection to USB Unicard, TelevisSystem and systems with ModBus protocol
Measurement range:	from -50 to 140	from -999 to 1000	from -150 to 1350
Accuracy:	better than 0.5% of end of scale+1 digit	better than 0.5% of end of scale+1 digit	Pt100: 0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C TcJ: 0.4% for whole scale + 1 digit TcK: 0.5% for whole scale + 1 digit, 0.3% from -40 to 800°C
Resolution:	0.1 or 1°C	0.1 or 1°C	Pt100: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond TcJ: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) beyond TcK: 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>	<ul style="list-style-type: none"> <li>3W for 12...24V~ model</li> <li>3W for 230V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°) ±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°) ±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>12V~, 24V~, 12...24V~/12...36V~ (°) ±10% 50/60Hz</li> <li>115V~/230V~ ±10% 50/60Hz</li> </ul>

\* selectable by parameter

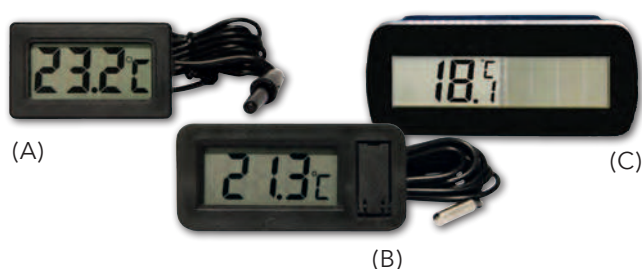
(°) non-insulated power supply

## Wiring diagrams



# EWTL 300 - EWTL 310 - DST-30

## LCD thermometers



Codes	Descr.	Probe cable length
<b>T1M1BT0107</b> (A)	EWTL 300	1.5m
<b>T1M1BT0109</b> (B)	EWTL 310	1.5m
<b>T1M1BT0105</b> (C)	DST-30	1m

### Applications

The EWTL 300/310 is a range of LCD digital temperature gauges with temperature probes connected to the instrument via a cable of length 1.5, 2 or 3 metres.

AN adapter that allows to replace 32x64 mm front tools (with 24.5x58 template hole mm) with the EWTL 300 thermometer is available.

DST-30 is a solar-cell thermometer specifically designed for refrigerated counters and display units.

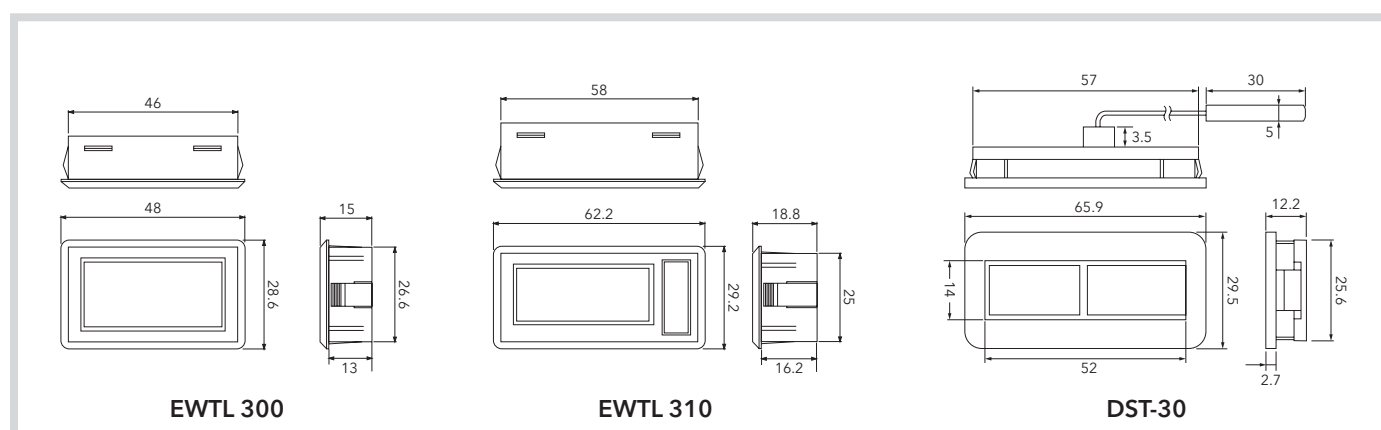
### Common features

**Installation** panel-mounted

### Technical data

	EWTL 300	EWTL 310	DST-30
Display:	LCD with 2 and 1/2 digits	LCD with 2 and 1/2 digits	LCD 24x14mm
Resolution:	0.1°C	0.1°C (1°C <20°C)	0.1°C
Accuracy:	±1°C	±1°C	±1°C
Probe:	connected to instrument, cable length 1.5m	connected to instrument, cable length 1.5m	connected to instrument, cable length 1m
Display refresh:	10 seconds	12 seconds	
Display range:	-50...70°C (-58...158 °F)	-50...70°C (-58...158 °F)	-20...80°C
Dimensions:	front panel 48x28.6 mm depth 13 mm	front panel 62.2x29.2 mm depth 16.2 mm	front panel 66x30 mm depth 11.6 mm
Installation:	46x26.6 mm	58x25 mm	57x25.6 mm
Power supply:	two 1.5V LR 44 batteries or equivalent - duration 12 months	one 1.5V LR 44 battery or equivalent - duration 12 months	integrated solar cells
Protection rating:			IP68

### Dimensions





# EWDR 981 - EWDR 984

DIN controllers for refrigeration



Codes	Descr.	Probe*	Power supply
DR26DI0TCD700	EWDR 981	NTC/PTC	230V~
DR3CDI0TCD700	EWDR 984	NTC/PTC	230V~

\*selectable by parameter

## Applications

The EWDR range of products, available in a 4 DIN module size (70x85mm), is designed for applications requiring controllers installed on DIN rails Omega, such as electrical panels for cold rooms, or applications with centralised electrical panels.

## Common features

<b>Container</b>	plastic casing with 4 DIN modules
<b>Dimensions</b>	front panel 70x85mm, depth 61mm
<b>Installation</b>	on DIN rail (Omega) or wall mounted
<b>Operating temperature</b>	-5...55°C
<b>Storage temperature</b>	-30...85°C

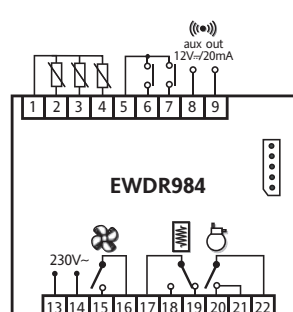
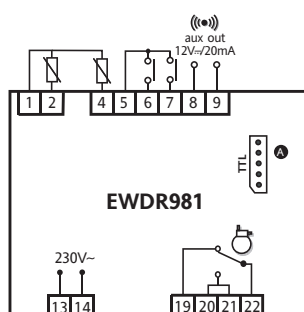
<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Connections</b>	on screw-on terminal block for ≤ 2.5mm wires <sup>2</sup> (just one wire per terminal for power connections)

## Technical data

	EWDR 981	EWDR 984
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *	3 PTC or NTC *
Digital inputs:	2 voltage-free inputs *	2 voltage-free inputs *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 15A 1hp 250V~	1 SPDT 8(3)A 250V~ 1 SPST 15A 1hp 250V~ 1 SPST 8(3)A 250V~
Analogue outputs:	output 12V~/24mA *	output 12V~/24mA *
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	5VA max	5VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz

\* selectable by parameter

## Wiring diagrams



# EWDR 983 LX/S - EWDR 985 LX/S/C/K

DIN controllers for remote counters



Codes	Descr.	Probe*	Power supply
<b>DR38DI0TCD700</b>	EWDR 983	NTC/PTC	230V~
<b>DR38DF0SCD700</b>	EWDR 983/CS LX	NTC/PTC	230V~
<b>DR34DI0TCD700</b>	EWDR 985	NTC/PTC	230V~
<b>DR35DR0SCD700</b>	EWDR 985/CS LX BUZ.	NTC/PTC	230V~

\*selectable by parameter

## Applications

The EWDR range of products, available in a 4 DIN module size (70x85mm), is designed for applications requiring controllers installed on DIN rails Omega, such as electrical panels for cold rooms, or applications with centralised electrical panels.

The EWDR 983 LX and EWDR 985 LX devices are equipped with an internal clock (RTC) for the management of the defrosting and the RS-485 serial port for the connection to Televis**System**.

## Common features

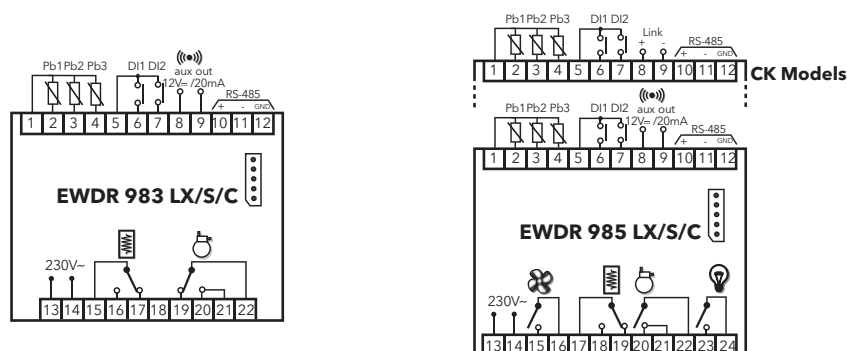
<b>Container</b>	plastic casing with 4 DIN modules	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Dimensions</b>	front panel 70x85mm, depth 61mm	<b>Connections</b>	on screw-on terminal block for ≤ 2.5mm wires <sup>2</sup> (just one wire per terminal for power connections)
<b>Installation</b>	on DIN rail (Omega) or wall mounted		
<b>Operating temperature</b>	-5...55°C		
<b>Storage temperature</b>	-30...85°C		

## Technical data

	EWDR 983 LX/S	EWDR 985 LX/S/C/K
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> </ul>
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	3 PTC or NTC *	3 PTC or NTC *
Digital inputs:	2 voltage-free inputs *	2 voltage-free inputs *
Connections:	TTL port for connection to Copy Card <b>LX only:</b> RS -485 for connection to Televis <b>System</b>	TTL port for connection to Copy Card <b>LX only:</b> RS -485 for connection to Televis <b>System</b>
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPDT 15A 1hp 250V~	1 SPST 8(3)A 1/2hp 250V~ 1 SPDT 8(3)A 1/2hp 250V~ 1 SPST 15A 1hp 250V~ 1 SPST 8(3)A 1/2hp 250V~
Analogue outputs:	output 12V~/24mA *	output 12V~/24mA *
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	5VA max	5VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Link:	not available	available
Clock:	available	available

\* selectable by parameter

## Wiring diagrams



# DR4020

## Universal DIN controllers



Codes	Descr.	Probe*	Power supply
E4D12E00BH710	DR4020	Pt100	100...240V~
E4D12A00BD710	DR4020	TC	100...240V~
E4D12I00BN710	DR4020	V/I/Pt100	100...240V~
E4D12N00BH710	DR4020	NTC/PTC/Pt1000	100...240V~
E4D12E00BH410	DR4020	Pt100	12...24V~/=
E4D12A00BD410	DR4020	TC	12...24V~/=
E4D12I00BN410	DR4020	V/I/Pt100	12...24V~/=
E4D12N00BH410	DR4020	NTC/PTC/Pt1000	12...24V~/=

\* selectable by parameter

### Applications

The new Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

### Common features

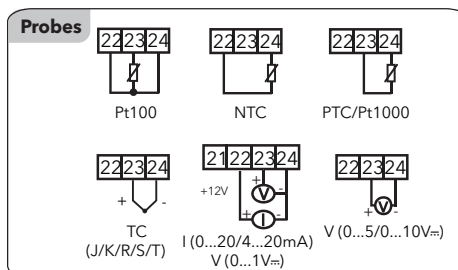
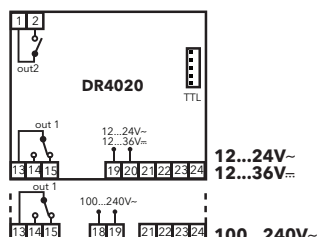
<b>Container</b>	plastic casing with 4 DIN modules	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 70x85mm, depth 61mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	on DIN rail (Omega) or panel mounting, with 70x45mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

### Technical data

DR4020	
Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes diagram on Wiring Diagram)
Digital inputs:	not available
Connections:	TTL port for connection to Copy Card and Unicard
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	not available
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	4W max
Power supply:	<ul style="list-style-type: none"> <li>12...24V~/12...36V= ±10% 50/60Hz</li> <li>100...240V~ ±10% 50/60Hz</li> </ul>

\*selectable by parameter

### Wiring diagrams



# DR4022

Universal DIN controllers with serial port



Codes	Descr.	Probe*	Power supply
E4D12EASBH710	DR4022	Pt100	100...240V~
E4D12NASBH710	DR4022	NTC/PTC/Pt1000	100...240V~
E4D12AASBD710	DR4022	TC	100...240V~
E4D12IASBN710	DR4022	V/I/Pt100	100...240V~
E4D12VASBN410	DR4022	V/I/Pt100	12...24V~/=

\*selectable by parameter

## Applications

The new Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

## Common features

<b>Container</b>	plastic casing with 4 DIN modules	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 70x85mm, depth 61mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	on DIN rail (Omega) or panel mounting, with 70x45mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

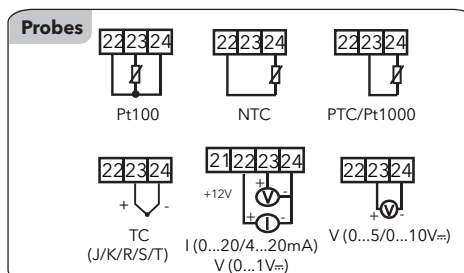
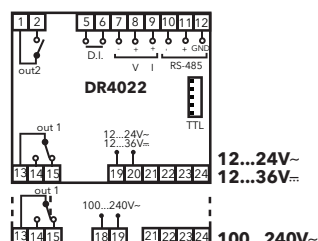
## Technical data

### DR4022

Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)
Digital inputs:	1 clean contact at extra low safety voltage
Connections:	TTL port and internal RS-485 for connection to Copy Card, Unicard, TelevisSystem and ModBus protocol systems
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	4W max
Power supply:	<ul style="list-style-type: none"> <li>12...24V~/12...36V= ±10% 50/60Hz</li> <li>100...240V~ ±10% 50/60Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams





# EW4820 (SSR)

Universal 48x48 controllers



Codes	Descr.	Probe*	Power supply
E481BI0XBH700	EW4820	V/I/Pt100	100...240V~
E481SI0XBN700	EW4820 SSR output	V/I/Pt100	100...240V~
E481BP0PMH700	EW4820	Pt100/Pt1000/NTC/PTC/TC	100...240V~
E481SP0PMH700	EW4820 SSR output	Pt100/Pt1000/NTC/PTC/TC	100...240V~
E481BP0PMH400	EW4820	Pt100/Pt1000/NTC/PTC/TC	12...24V~/~
E481SP0PMH400	EW4820 SSR output	Pt100/Pt1000/NTC/PTC/TC	12...24V~/~

\* selectable by parameter

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

## Common features

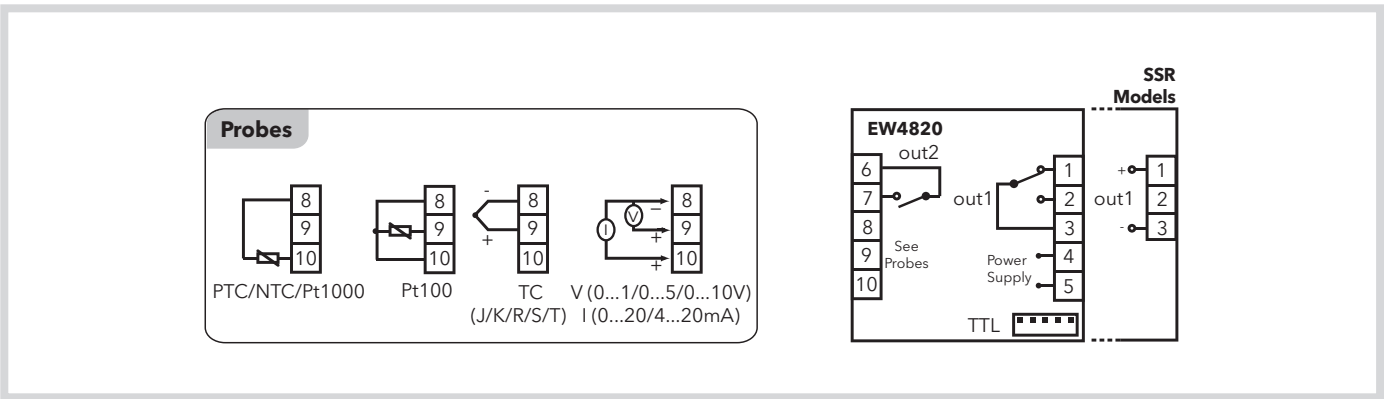
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 48x48mm, depth 113mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	panel-mounting, with 45x45mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	EW4820 (SSR)
Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)
Digital inputs:	not available
Connections:	TTL port for connection to Copy Card or TelevisSystem
Digital outputs:	1 SPDT 3A 250V~ 1 SPST 2A 250V~
<b>Digital outputs - SSR models:</b>	Vout = 0...12V~/ I <sub>max</sub> = 0...15mA / V <sub>min</sub> = 7.5V 1 SPST 2A 250V~
Analogue output:	not available
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	• 2.45W for 12...24V~/12...36V~/ model • 2.40W for 100...240V~/ model
Power supply:	• 12...24V~/12...36V~/ ±10% 50/60Hz • 100...240V~/ ±10% 50/60Hz

\*(selectable by parameter)

## Wiring diagrams



# EW4822 (SSR)

Universal 48x48 controllers with serial port



Codes	Descr.	Probe*	Power supply
<b>E481BIISBH700</b>	EW4822 AO 4...20mA	V/I/Pt100	100...240V~
<b>E481BPIQMH700</b>	EW4822 AO 0...20mA	Pt1000/Pt100/NTC/PTC/TC	100...240V~
<b>E481BPVQMH700</b>	EW4822 AO 0/10V	Pt1000/Pt100/NTC/PTC/TC	100...240V~
<b>E481SPIQMH700</b>	EW4822 AO 0...20mA SSR output	Pt1000/Pt100/NTC/PTC/TC	100...240V~
<b>E481BPIQMH400</b>	EW4822 AO 0...20mA	Pt1000/Pt100/NTC/PTC/TC	12...24V~/=
<b>E481SPIQMH400</b>	EW4822 AO 0...20mA SSR output	Pt1000/Pt100/NTC/PTC/TC	12...24V~/=

\*selectable by parameter

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

## Common features

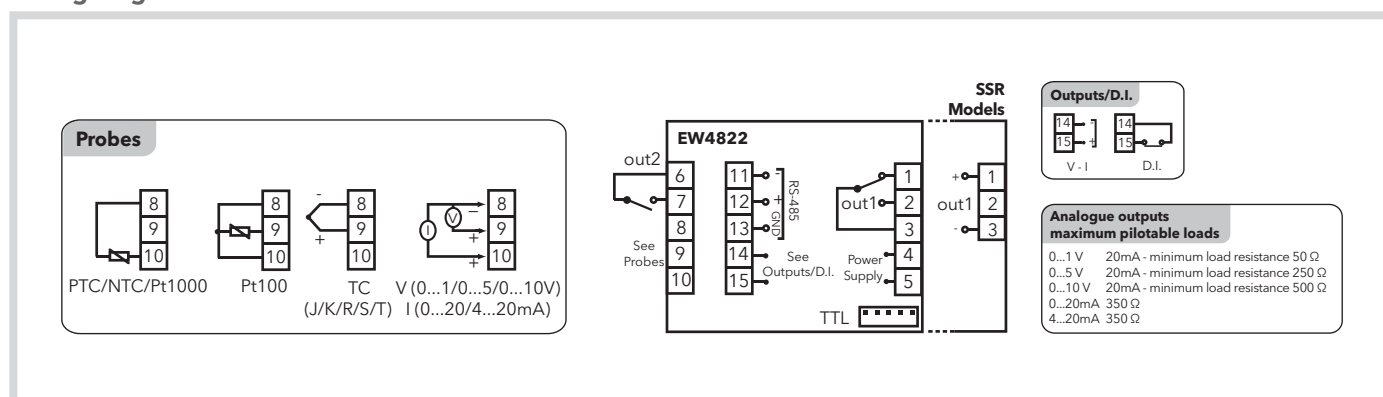
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 48x48mm, depth 113mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	panel-mounting, with 45x45mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	EW4822 (SSR)
Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)
Digital inputs:	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card or Televis <b>System</b> + internal RS-485 for connection to systems with ModBus protocol
Digital outputs:	1 SPDT 3A 250V~ 1 SPST 2A 250V~
<b>Digital outputs - SSR models:</b>	$V_{out} = 0...12V_{\sim} / I_{max} = 0...15mA / V_{min} = 7.5V$ 1 SPST 2A 250V~
Analogue output:	V: 0...1V, 0...5V, 0...10V or I: 0...20mA, 4...20mA maximum pilotable loads: please see wiring diagrams
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	<ul style="list-style-type: none"> <li>2.80W for 12...24V~/12...36V~model</li> <li>2.60W for 100...240V~model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>12...24V~/12...36V~ ±10% 50/60Hz</li> <li>100...240V~ ±10% 50/60Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# EW7210 - EW7220

## Universal 72x72 controllers



Codes	Descr.	Probe*	Power supply
<b>E7211A0XHD700</b>	EW7210	TC	100...240V~
<b>E7211E0XHD700</b>	EW7210	Pt100	100...240V~
<b>E7211N0XHD700</b>	EW7210	NTC/PTC/Pt1000	100...240V~
<b>E7211A0XHD400</b>	EW7210	TC	12...24V~/~
<b>E7211E0XHD400</b>	EW7210	Pt100	12...24V~/~
<b>E7211N0XHD400</b>	EW7210	NTC/PTC/Pt1000	12...24V~/~
<b>E7212E0XBH700</b>	EW7220	Pt100	100...240V~
<b>E7212A0XBD700</b>	EW7220	TC	100...240V~
<b>E7212I0XBH700</b>	EW7220	V/I/Pt100	100...240V~
<b>E7212N0XBD700</b>	EW7220	NTC/PTC/Pt1000	100...240V~
<b>E7212E0XBH400</b>	EW7220	Pt100	12...24V~/~
<b>E7212A0XBD400</b>	EW7220	TC	12...24V~/~
<b>E7212I0XBH400</b>	EW7220	V/I/Pt100	12...24V~/~
<b>E7212N0XBD400</b>	EW7220	NTC/PTC/Pt1000	12...24V~/~

\*selectable by parameter

### Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

### Common features

<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 72x72mm, depth 80mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	panel-mounting, with 67x67mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

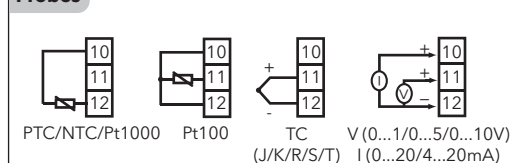
### Technical data

	EW7210	EW7220
Display:	no decimal point * 2 4-digit displays + sign	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)	1 input* (see Probes table)
Digital inputs:	not available	not available
Connections:	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	not available	not available
Measurement range:	according to probe used	according to probe used
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power consumption:	4W max	4W max
Power supply:	<ul style="list-style-type: none"> <li>12...24V~/12...36V~ ±10% 50/60Hz</li> <li>100...240V~ ±10% 50/60Hz</li> </ul>	<ul style="list-style-type: none"> <li>12...24V~/12...36V~ ±10% 50/60Hz</li> <li>100...240V~ ±10% 50/60Hz</li> </ul>

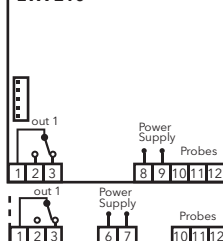
\*(selectable by parameter)

### Wiring diagrams

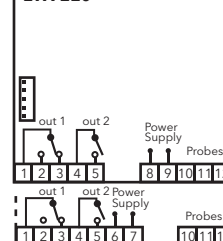
#### Probes



#### EW7210



#### EW7220



# EW7221 - EW7222

Universal 72x72 controllers with serial port



Codes	Descr.	Probe*	Power supply
<b>E7213PAXBH700</b>	Univ. EW7221	Pt100/Pt1000/NTC/PTC/TC	100...240V~
<b>E7213IAXBH700</b>	EW7221	V/I/Pt100	100...240V~
<b>E7213PAXBD700</b>	Univ. EW7221 - RS485	Pt100/Pt1000/NTC/PTC/TC	100...240V~
<b>E7213PAXBH400</b>	Univ. EW7221	Pt100	12...24V~/±
<b>E7213PASBH700</b>	EW7222 Univ.-RS485	Pt100/Pt1000/NTC/PTC/TC	100...240V~
<b>E7213IASBH700</b>	EW7222	V/I/Pt100	100...240V~
<b>E7213PASBH400</b>	EW7222 Univ.-RS485	Pt100/Pt1000/NTC/PTC/TC	12...24V~/±

\*selectable by parameter

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control, ranging from the moulding of plastic materials and packaging, to raw material transformation process control.

## Common features

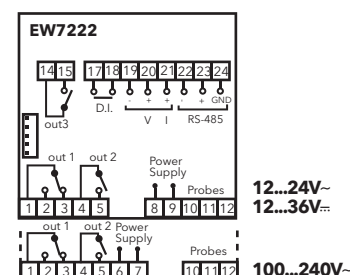
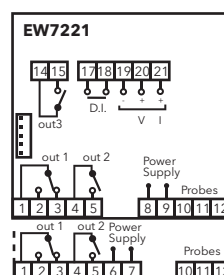
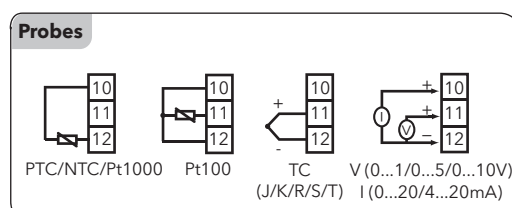
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 72x72mm, depth 80mm	<b>Storage temperature</b>	-20...85°C
<b>Installation</b>	panel-mounting, with 67x67mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	EW7221	EW7222
Display:	no decimal point * 2 4-digit displays + sign	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Analogue Inputs table)	1 input* (see Probes table)
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol	TTL and RS-485 port for connection to Copy Card, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~ 1 SPST 5A 250V~	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~ 1 SPST 5A 250V~
Analogue output:	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA
Measurement range:	according to probe used	according to probe used
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power consumption:	4W max	4W max
Power supply:	• 12...24V~/12...36V~ ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz	• 12...24V~/12...36V~ ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz

\*(selectable by parameter)

## Wiring diagrams



# EWTSPPlus 990

32x74 timers and counters



Codes	Descr.	Power supply
ET020I0XTG700	EWTSPPlus 990	230V~
ET020I0XTG500	EWTSPPlus 990	24V~
ET020I0XTG300	EWTSPPlus 990	12V~/=

## Applications

The Eliwell series of digital timers is the ideal measuring solution for all measurable quantities in commercial refrigeration and light industry. The range is used in all applications requiring precision control of processing stages and the management of functions linked to pre-set time intervals.

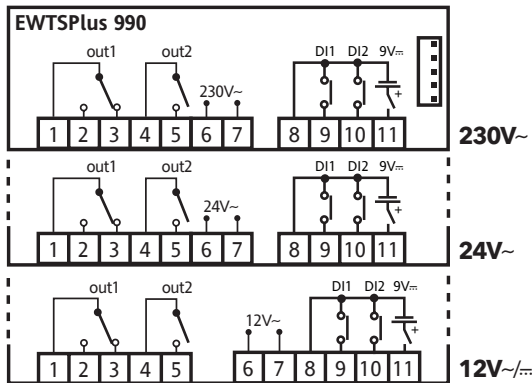
## Common features

<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 79x37mm, depth 59mm	<b>Storage temperature</b>	-30...85°C
<b>Installation</b>	panel-mounting, with 71x29mm (+0.2/-0.1mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	EWTSPPlus 990
Display range:	9999 hours / 99 hours and 59 minutes / 99 minutes and 59 seconds / 99 seconds and 99 hundredths of a second
Display:	no decimal point * 4 digits + sign
Digital inputs:	2 clean contacts at extra low safety voltage
Connections:	TTL port for connection to Copy Card and TelevisSystem
Digital outputs:	1 SPDT 8(3)A 1/2hp 250V~ 1 SPST 8(3)A 1/2hp 250V~
Accuracy:	3.6 sec/h
Power consumption:	3VA max
Power supply:	12V~/= or 24V~ or 230V~ ±10% 50/60Hz
External battery:	<ul style="list-style-type: none"><li>• power supply 9V=</li><li>• battery duration: depends on model, with 9V~/10mA/h battery duration 1h</li><li>• instrument absorption with power supply from 10mA battery</li></ul>

## Wiring diagrams



# EWRC 300 NT - EWRC 500 NT

Controllers for cold rooms



Codes	Descr.	Note
<b>RCS3HDLX2*700</b>	EWRC 300 NT 2HP BUZZER	Buzzer
<b>RCS3UDLX2*700</b>	EWRC 500 NT 2HP BUZZER	Buzzer
<b>RCS3UDTX2*700</b>	EWRC 500 NT 2HP RTC HACCP BUZ	HACCP/Buzzer
<b>RCA3UDRX2*700</b>	EWRC 500 NT 2HP BUZ 4DIN W/B	Buzzer/Circuit Breaker
<b>RCA3UDSX2*700</b>	EWRC 500 NT 2HP RTC HACCP BUZ 4DIN W/B	HACCP/Buzzer/ Circuit Breaker
<b>KP00Q150</b>	RS485 Plugin 40x49mm screw-in terminals	Optional module

\*The number or letter in this position indicates the language available for the code:

0: ITA; E: ENG; F: FRA; G: GER; O: POL; R: RUS; S: SPA; T: TUR; U: Arabic; W: SWE; Z: BRA

## Applications

Controllers for static and ventilated cold storage rooms with direct control of the single-phase compressors up to 2 HP for on-board installation.

EWRC 300 NT and EWRC 500 NT are equipped with 3 or 5 relay outputs freely configurable for controlling all the cell loads.

## Common features

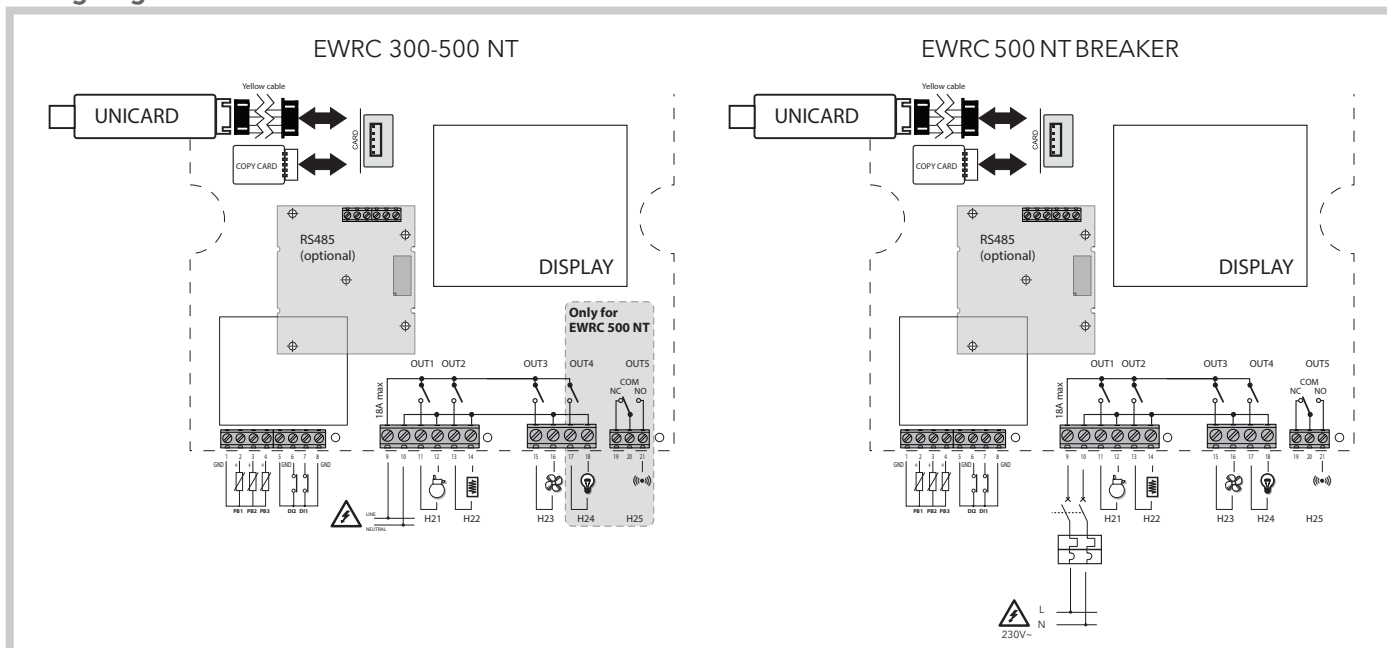
<b>Front panel protection rating</b>	IP65	<b>Operating temperature</b>	-5...50°C
<b>Container</b>	PC + ABS	<b>Storage temperature</b>	-20...85°C
<b>Display</b>	2 displays: 3 digits + sign and 4 digits	<b>Ambient operation</b>	
<b>Installation</b>	wall-mounted	<b>and storage humidity</b>	10...90% RH (non-condensing)

Technical data	EWRC 300 NT	EWRC 500 NT	EWRC 500 NT BREAKER
Max dimensions:	213x318mm front panel, depth 102mm	213x318mm front panel, depth 102mm	front panel 221x318mm, depth 107mm
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Power consumption:	14W max	14W max	14W max
Miniature circuit breaker:	-	-	230V~ Icn 4500 A 2P
Nominal current			In = 16A
Pulse voltage			4 KV
Power terminals:	screw-type	screw-type	screw-type
Analogue inputs:	3 x NTC / PTC*	3 x NTC / PTC*	3 x NTC / PTC*
Display range:	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C
Digital inputs:	2 voltage-free inputs	2 voltage-free inputs	2 voltage-free inputs
Connections:	TTL and RS485** port for Unicard, TelevisSystem and Modbus RTU systems	TTL and RS485** port for Unicard, TelevisSystem and Modbus RTU systems	TTL and RS485** port for Unicard, TelevisSystem and Modbus RTU systems
Digital outputs:	Common-line max 18A OUT1 common-line 2HP 12(12)A 250V~ OUT2 common-line 1HP 8(8)A 250V~ OUT3 common-line ½HP 8(4)A 250V~	Common-line max 18A OUT1 common-line 2HP 12(12)A 250V~ OUT2 common-line 1HP 8(8)A 250V~ OUT3 common-line ½HP 8(4)A 250V~ OUT4 common-line 1HP 8(8)A 250V~ OUT5 SPDT ½HP 8(4)A 250V~	Common-line max 18A OUT1 common-line 2HP 12(12)A 250V~ OUT2 common-line 1HP 8(8)A 250V~ OUT3 common-line ½HP 8(4)A 250V~ OUT4 common-line 1HP 8(8)A 250V~ OUT5 SPDT ½HP 8(4)A 250V~
Measurement range:	-55...150°C	-55...150°C	-55...150°C
Resolution:	1 or 0.1°C	1 or 0.1°C	1 or 0.1°C
HACCP:	optional	optional	optional
Clock:	optional	optional	optional

\* selectable from parameter

\*\*with optional module

## Wiring diagrams





# EWRC 5000 NT - EWRC 5010 NT - EWRC 5030 NT

Controllers for cold rooms



Code	Descr.	Notes
RCH300DTX*700	EWRC 5000 NT HACCP BZ 230Vac	Electronic control only
RCH301DTX*700	EWRC 5010 NT HACCP BZ 2.5-4A 230Vac	
RCH302DTX*700	EWRC 5010 NT HACCP BZ 4-6.3A 230Vac	
RCH303DTX*700	EWRC 5010 NT HACCP BZ 6-10A 230Vac	
RCH304DTX*700	EWRC 5010 NT HACCP BZ 13-18A 230Vac	
RCH305DTX*900	EWRC 5030 NT HACCP BZ 2.5-4A 400Vac	
RCH306DTX*900	EWRC 5030 NT HACCP BZ 4-6.3A 400Vac	
RCH307DTX*900	EWRC 5030 NT HACCP BZ 6-10A 400Vac	
RCH308DTX*900	EWRC 5030 NT HACCP BZ 9-14A 400Vac	
RCH309DTX*900	EWRC 5030 NT HACCP BZ 13-18A 400Vac	
RCH310DTX*900	EWRC 5030 NT HACCP BZ 17-20A 400Vac	
RCH311DTX*900	EWRC 5030 NT HACCP BZ 6kW	Evaporator unit with electric defrost 6kW
RCH312DTX*900	EWRC 5030 NT HACCP BZ 12kW	Evaporator unit with electric defrost 12kW

\*the number in this position indicates the language available for the code:  
1: ITA-ENG 2: ENG-AR 3:ITA-SPA 4:FRA-GER 5:GRE-RUS

## Applications

Certified electrical panels line ready for use with inbuilt installation for static and ventilated cold storage rooms. Both single and three phase user control.

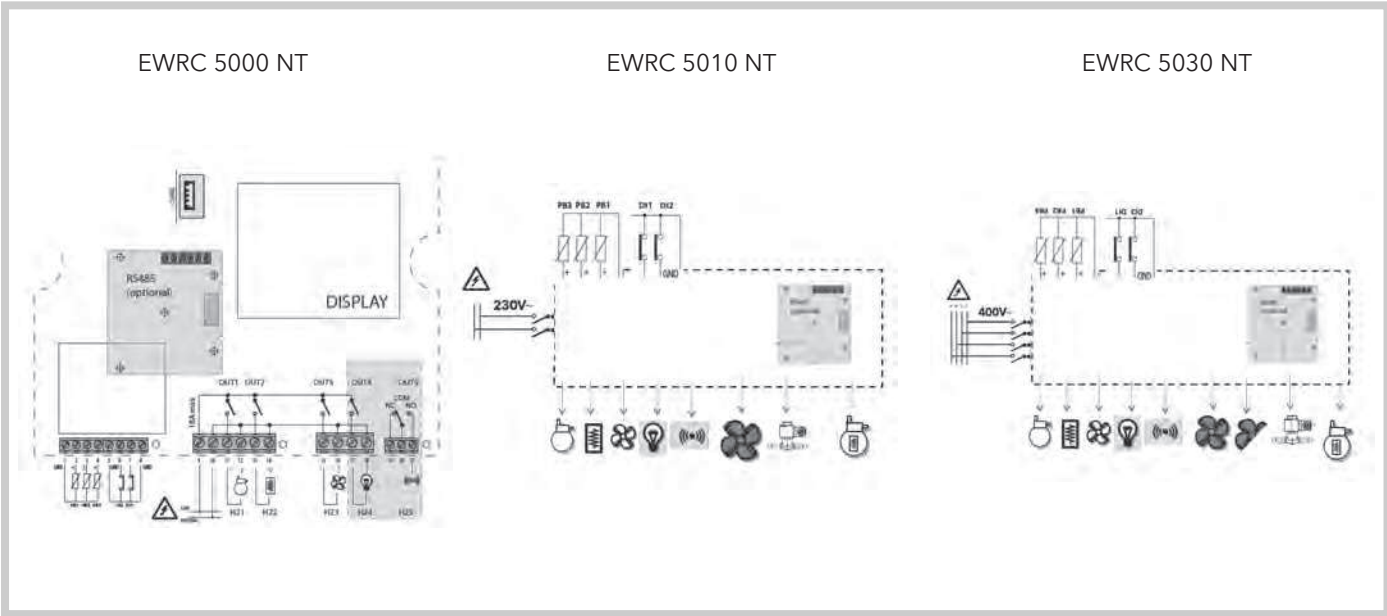
## Common features

Container	PC + ABS	Operating temperature	-5...40°C
Display	2 displays: 3 digits + sign and 4 digits	Storage temperature	-20...+70°C
Installation	wall-mounted	Ambient operation and storage humidity	10...90% RH (non-condensing)

Technical data	EWRC 5000 NT	EWRC 5010 NT	EWRC 5030 NT
Dimensions	450x 380, depth 160 (mm)	450x 380, depth 160 (mm)	450x 380, depth 160 (mm)
Power supply	230Vac +/-10% 50/60Hz	230Vac (Phase+Neutral +Earth)	400Vac (3Phase+Neutral +Earth)
Command type	single-phase	single-phase	Three-phase
Main switch	-	Two-pole thermal-magnetic breaker	Four-pole thermal-magnetic breaker
Connections	Screw terminals	Screw terminals on DIN bar	Screw terminals on DIN bar
Connectivity	TTL and RS485** port for Unicard, Televis-System and Modbus RTU systems	TTL and RS485** port for Unicard, Televis-System and Modbus RTU systems	TTL and RS485** port for Unicard, Televis-System and Modbus RTU systems
Analogue inputs	3 x NTC / PTC*	3 x NTC / PTC*	3 x NTC / PTC*
Display range	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C	NTC: -50.0...110.0°C; PTC: -55.0...150.0°C
Resolution	0.1°C	0.1°C	0.1°C
Digital inputs	2 voltage-free inputs	2 voltage-free inputs	2 voltage-free inputs
Auxiliary Protection	-	Dedicated thermal-magnetic breaker	Dedicated thermal-magnetic breaker
Buzzer	Present	Present	Present
HACCP	Present	Present	Present

\* selectable from parameter - \*\*with optional module

## Functional diagram



# IDPanel 978

Single-phase and three-phase electrical panels for cold rooms



Code	Descr.	Notes
ELP300DSX0700	IDPanel 978 5.5-8A 230Vac	HACCP / BZ
ELP301DSX0700	IDPanel 978 8-11A 230Vac	HACCP / BZ
ELP302DSX0900	IDPanel 978 3.7-5.5A 400Vac	HACCP / BZ
ELP303DSX0900	IDPanel 978 5.5-6A 400Vac	HACCP / BZ

## Applications

Electrical panels line ready for use with on-board installation for static and ventilated cold storage rooms. Control of compressor and electrical resistance in single-phase and three-phase version.

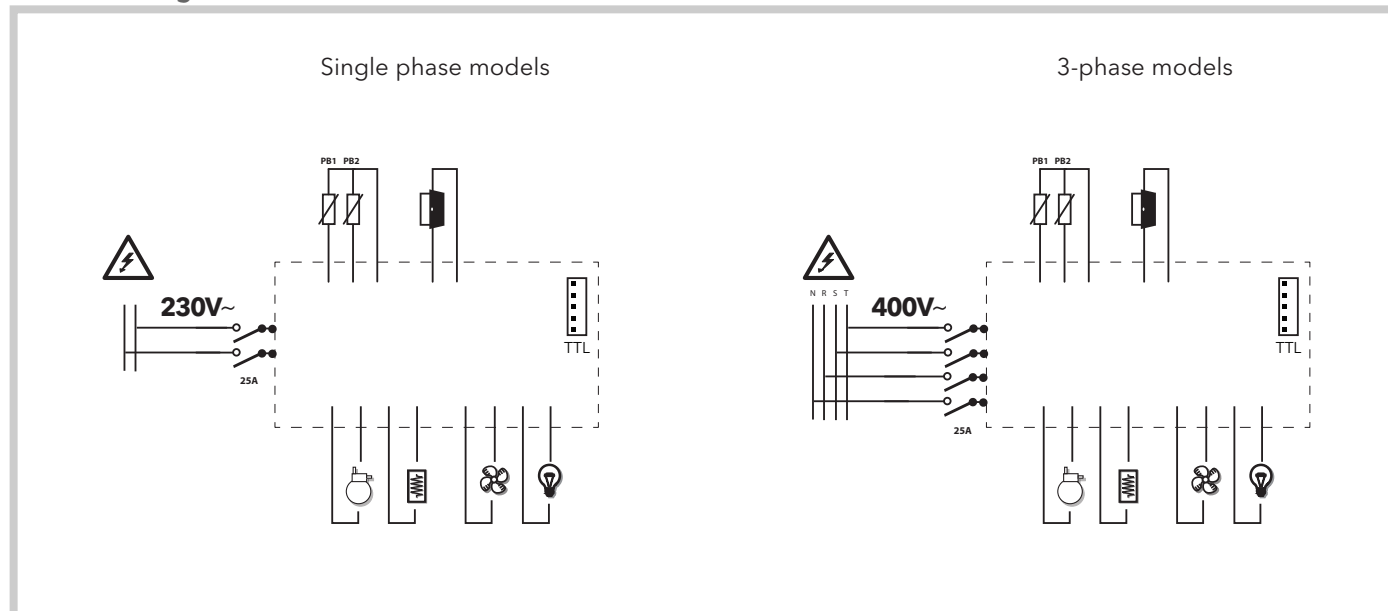
## Common features

<b>Front panel protection</b>	IP54	<b>Operating temperature</b>	-5...50°C
<b>Container</b>	PC + ABS	<b>Storage temperature</b>	-20...+70°C
<b>Control</b>	IDPlus 978 Thermoregulator	<b>Ambient operation</b>	
<b>Installation</b>	wall-mounted	<b>and storage humidity</b>	10...90% RH (non-condensing)

Technical data	IDPanel 978 5.5-8A 230Vac	IDPanel 978 8-11A 230Vac	IDPanel 978 3.7-5.5A 400Vac	IDPanel 978 5.5-6A 400Vac
Box sizes	213 x 318mm front panel, depth 102mm	213 x 318mm front panel, depth 102mm	213 x 318mm front panel, depth 102mm	213 x 318mm front panel, depth 102mm
Power supply	230Vac (Phase+Neutral +Earth)	230Vac (Phase+Neutral +Earth)	400Vac (3Phase+Neutral +Earth)	400Vac (3Phase+Neutral +Earth)
Command type	single-phase	single-phase	Three-phase	Three-phase
Door lock mains switch	25A	25A	25A	25A
Connections	Screw terminals on DIN bar	Screw terminals on DIN bar	Screw terminals on DIN bar	Screw terminals on DIN bar
Connectivity	TTL port for connection to Unicard/Copycard or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicard/Copycard or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicard/Copycard or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicard/Copycard or TelevisSystem/ModBus monitoring device*
General protection	Fuses	Fuses	Fuses	Fuses
Motor protection	Thermal relay	Thermal relay	Thermal relay	Thermal relay
Analogue inputs	2 PTC / NTC /Pt1000*	2 PTC / NTC /Pt1000*	2 PTC / NTC /Pt1000*	2 PTC / NTC /Pt1000*
Configurable inputs	1 digital (SELV) / analogue (PTC/ NTC/Pt1000) 1 digital (SELV) / serial TTL*	1 digital (SELV) / analogue (PTC/ NTC/Pt1000) 1 digital (SELV) / serial TTL*	1 digital (SELV) / analogue (PTC/ NTC/Pt1000) 1 digital (SELV) / serial TTL*	1 digital (SELV) / analogue (PTC/ NTC/Pt1000) 1 digital (SELV) / serial TTL*
Compressor	1PH 5.5 - 8.0 A	1PH 8.0 - 11.0 A	3PH 3.7 - 5.5 A	3PH 5.5 - 6.0 A
Defrost	1PH 800W	1PH 800W	3PH 2400W	3PH 2400W
Evaporator fan	1PH 10(6)A 250Vac	1PH 10(6)A 250Vac	3PH 2400W	3PH 2400W
Light	1PH 8(4)A 250Vac	1PH 8(4)A 250Vac	1PH 8(4)A 250Vac	1PH 8(4)A 250Vac

\* selectable by parameter

## Functional diagram



# EWCM 400D PRO

Compact controllers for compressor racks



Codes	Descr.	Notes
EPDT1PCR2400A	EWCM 436D PRO /A-CRII W/CABLES	Includes I/O wiring, RS-485 analogue and serial output
EPDT1PCR2400	EWCM 436D PRO /A-CRII	
COLV0000E0100	WIRING LV FREE/FLEX 1 m 20 WAY	I/O Wiring
COLV000042100	WIRING WIRING OUT 4WAY 1m	Analogue output wiring
COLV000035100	WIRING RS485 FREE/FLEX 1m	RS-485 serial wiring
E7213PASBH700	SKP 10	Display / Optional remote keyboard

## Applications

The new series of controllers for EWCM 400D PRO compressor racks was designed to manage central cooling up to 4 compressors of which one has variable capacity. Furthermore, the controller manages the two-step condensation fans or in continuous modulation via inverter. The management of the floating condensation set point according to the external temperature conditions completes the characteristics also offering energy saving functions.

The EWCM 436D PRO /A-CRII model is designed for CRii range compressors with capacity modulation.

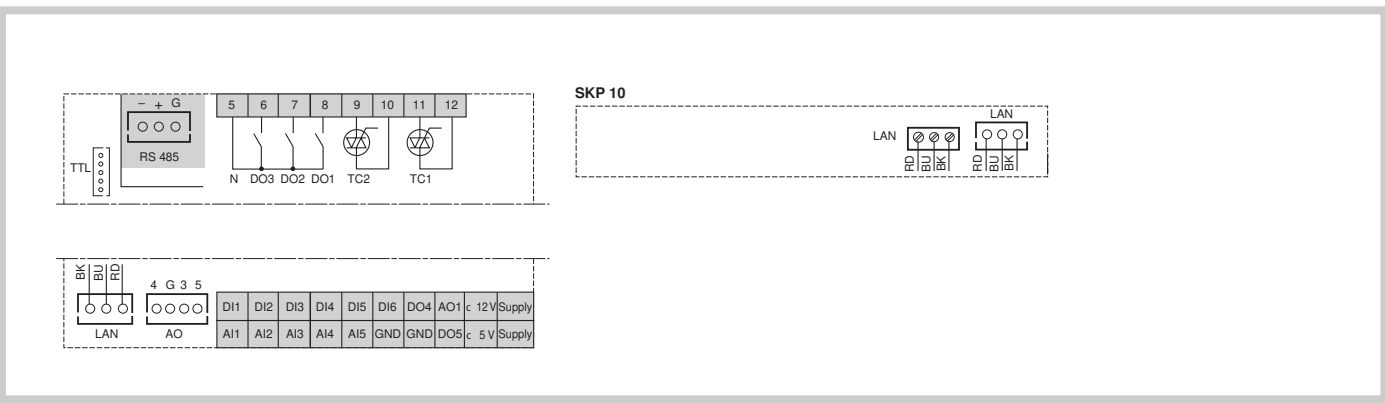
## Common features

Control of compressor racks up to 4 compressors and condenser fans	Two-step or inverter fan control
Modulation of the capacity for CRii series compressors up to 3 valves	Energy saving with floating condensation
	RS-485 serial and Modbus RTU open supervision protocol

## Technical data

EWCM 400D PRO	
I/O	Description
Analogue Inputs	3 configurable analogical, clean contact digital, NTC inputs 2 voltage/current analogue configurable inputs, clean contact digital inputs
Digital Inputs	6 clean contact digital inputs
Analogue outputs	TC1, TC2: TRIAC 3 A - 230 Vac output TRIAC high voltage 1 PWM analogue output (2) low voltage (SELV) 2 analogue outputs 0 ... 10 V, low voltage (SELV) 1 analogue output 0 ... 10 V / 4 ... 20 mA / 0 ... 20 mA, low voltage (SELV)
Digital outputs	3 relay outputs 2 A - 230 Vac 2 low voltage open collector outputs (SELV)
Connectivity	RS 485 for connection to TelevisSystem TTL programming port for MFK, DMI, UNICARD LAN Bus of expansion for display / remote keyboard
Clock	Present
Power consumption	6 VA
Power supply	12 ... 24V~ not insulated

## Wiring diagrams



# EWCM 4120 - 4150 - 4180

32x74 controllers for compressor racks



Codes	Descr.	Power supply
<b>EM6A12001EL10</b>	EWCM4120 /C	12V~
<b>EM6A12001EL11</b>	EWCM4120 /C with wires	12V~
<b>EM6A22105EL10</b>	EWCM4150 /C	12V~
<b>EM6A22105EL11</b>	EWCM4150 /C with wires	12V~
<b>EM6A22101EL10</b>	EWCM4180 /C	12V~
<b>EM6A22101EL11</b>	EWCM4180 /C with wires	12V~

<b>EM6A12001EL16</b>	KIT EWCM 4120/C	see kit table
<b>EM6A22101EL16</b>	KIT EWCM 4180/C	see kit table

## Applications

The EWCM 4000 range, which consists of three different controllers, is the ideal solution for small and medium-sized compressor racks, where ease of use, high control reliability and versatility are essential features for meeting all operational requirements in compressor rack management.

## Common features

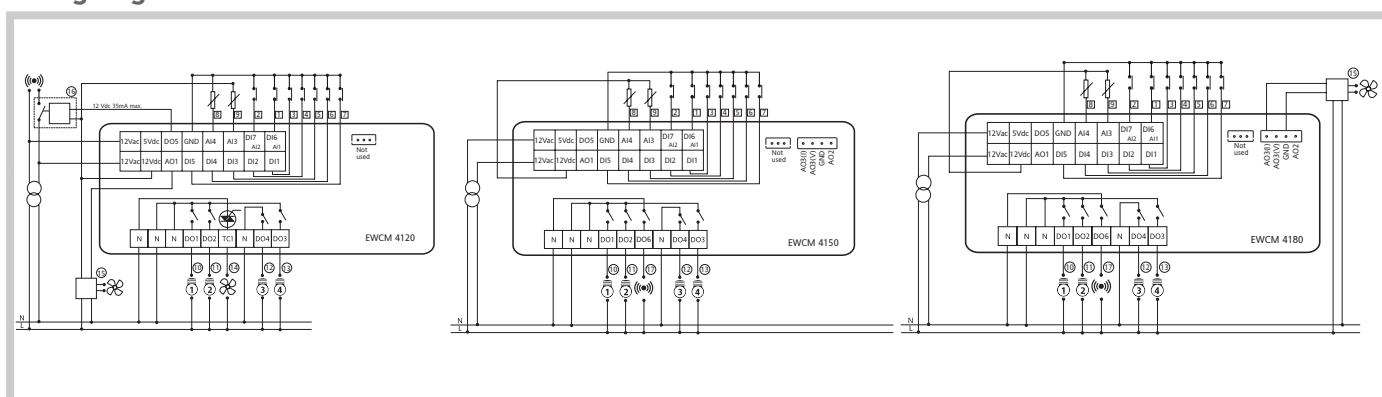
<b>Display</b>	4 figure LED	<b>Operating temperature</b> -5...60°C
<b>Container</b>	plastic casing, flame retardant grade UL94-V0	<b>Storage temperature</b> -20...85°C
<b>Dimensions</b>	front panel 32x74mm, depth 70mm	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)
<b>Installation</b>	panel-mounted, with 71x29mm hole	

Technical data	EWCM 4120	EWCM 4150	EWCM 4180
Analogue inputs:	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*
Digital inputs:	7 SELV contacts	7 SELV contacts	7 SELV contacts
Analogue outputs:	<ul style="list-style-type: none"> <li>• TRIAC</li> <li>• PWM - Open Collector</li> </ul>	<ul style="list-style-type: none"> <li>• 2 PWM - Open Collector</li> <li>• 0...10V / 4...20mA / 0...20mA*</li> </ul>	<ul style="list-style-type: none"> <li>• 2 PWM - Open Collector</li> <li>• 0...10V / 4...20mA / 0...20mA*</li> </ul>
Digital outputs:	4 SPST 2A 250V~ + Open Collector	5 SPST 2A 250V~ + Open Collector	5 SPST 2A 250V~ + Open Collector
Connections:	TTL port for connection to Copy Card and TelevisSystem via optional module	TTL port for connection to Copy Card and TelevisSystem via optional module	TTL port for connection to Copy Card and TelevisSystem via optional module
Clock:	present	present	present
Power consumption:	5VA max	5VA max	5VA max
Power supply:	12V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz

\* (selectable by parameter)

KIT	Description	Details
<b>EM6A12001EL16</b>	EWCM 4120/C KIT	1 x EM6A12001EL11 - EWCM 4120/C with wires 1 x TF411200 - transformer 230/12 5VA shielded 1 x TD400030 - EWPA 030 R 0/5V 0/30BAR Ratiometric transd. 1 x TD400010 - EWPA 010 R 0/5V 0/10BAR Ratiometric transd. 2 x CO000027 - WIR. EWPA 1m R 0/5V Wir. for ratiometric transd.
<b>EM6A22101EL16</b>	EWCM 4180/C KIT	1 x EM6A22101EL11 - EWCM 4180/C with wires 1 x TF411200 - transformer 230/12 5VA shielded 1 x TD400030 - EWPA 030 R 0/5V 0/30BAR Ratiometric transd. 1 x TD400010 - EWPA 010 R 0/5V 0/10BAR Ratiometric transd. 2 x CO000027 - WIR. EWPA 1m R 0/5V Wir. for ratiometric transd.

## Wiring diagrams



# EWCM 9000 PRO DOMINO /CO2T

Control for transcritical CO2 booster / parallel compression solution



Code	Descr.	Notes
EPAS1PCTA500	EWCM 9000 PRO 42D SSR /CO2T	With integrated display and SSR output
EPAS0PCTA500	EWCM 9000 PRO 42B SSR /CO2T	SSR Outputs
EP4000000B00	EXP 4D PRO 14 I/O	Expansion module 14/ I/O
EPK01000000	EVK PRO DISPLAY /GR	Remote display

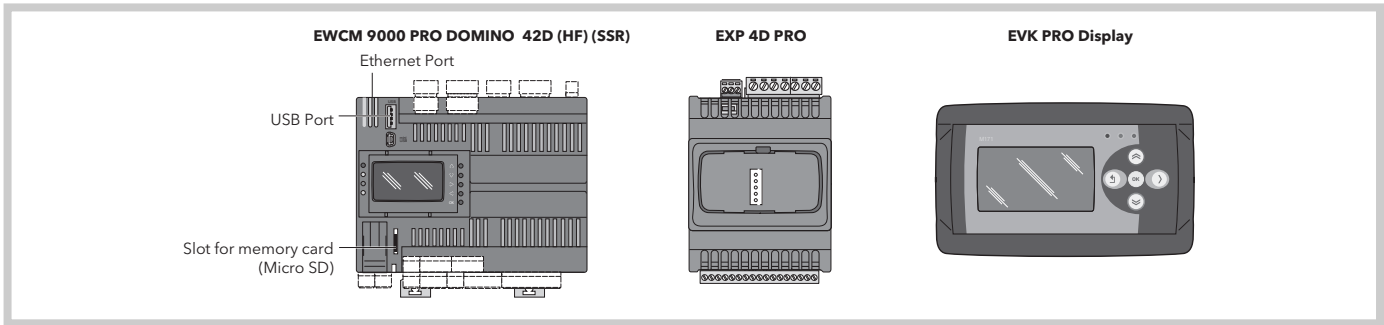
## Applications

The new series of controllers for EWCM 9000 PRO DOMINO compressor racks is the solution for the sustainable systems based on natural refrigerants. The EWCM 9000 PRO DOMINO /CO2T model is dedicated to the solutions for transcritical CO2 with booster circuit and allows for the management of up to two circuits for heat recovery. EWCM 9000 PRO is compact and can be expanded with configurable keyboard modules thanks to the software tool provided to rapidly adapt to various plant solutions. The controller can be connected to the Televis system, Modbus/RTU and Modbus/TCP systems and has a data registration system for diagnosis. In the area reserved for the [www.eliwel.com](http://www.eliwel.com) there are language updates available, and the applicative detailed documentation.

## Features

Management of 2 circuits up to 8 compressors	Expandable up to 12 EXP 4D PRO modules
Parallel booster/compression management up to 4 compressors	Up to 2 optional remote displays
Management of modulating condensation fans	

Technical data	EWCM 9000 PRO DOMINO	EWCM 9000 PRO DOMINO SSR	EXP 4D PRO	EVK PRO
Dimensions	144 x 110 mm frontal panel, depth 60 mm	144 x 110 mm frontal panel, depth 60 mm	70.2 x 87 mm frontal panel, depth 61.6 mm	front panel 190 x 96 mm, depth 9.9 mm, total depth 35 mm
Power supply	24 Vac / 20...38 Vdc	24 Vac / 20...38 Vdc	24 Vac / 24 Vdc not insulated	24 Vac / 24 Vdc
Power consumption	35 VA / 15 W	35 VA / 15 W	16 VA / 7 W	5W
Analogue inputs	12 configurable inputs: NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 0-20 mA 4-20 mA 0-10 V / 0-5 V 0-5 V ratiometric	12 configurable inputs: NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 0-20 mA 4-20 mA 0-10 V / 0-5 V 0-5 V ratiometric	4 configurable inputs NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 4-20 mA 0-10 V / 0-5 V	-
Digital inputs	10 SELV +24 V ac/dc opto isolator inputs 2 rapid opto isolator inputs, up to 2 kHz	10 SELV +24 V ac/dc opto isolator inputs 2 rapid opto isolator inputs, up to 2 kHz	4 safety extra low voltage SELV	-
Analogue outputs	4 outputs 0-10 V 2 configurable outputs 0-10 V 4-20 mA Open Collector	4 outputs 0-10 V 2 configurable outputs 0-10 V 4-20 mA Open Collector	2 x 0-10V	-
Digital outputs	10 3 A SPST +250 V a.c. relays 2 1 A SPDT +250 V a.c. relays	8 3 A SPST +250 V a.c. relays 2 1 A SPDT +250 V a.c. relays 2 SSR x 0.5 A +240 V c.a.	3 3 A SPST +250 V a.c. relays 1 1 A SPDT +250 V a.c. relays	-
Display	128x64px backlit graphic LCD 4 status LEDs	128x64px backlit graphic LCD 4 status LEDs	-	128x64px backlit graphic LCD 3 status LEDs
Connectivity	CAN Bus of expansion 2 RS 485 protocol Modbus RTU serials 1 USB type A (Host) Mass Storage (FAT32) 1 mini USB type B (Device) for PC connection 1 Ethernet port 10 Modbus/TCP protocol	CAN Bus of expansion 2 RS 485 protocol Modbus RTU serials 1 USB type A (Host) Mass Storage (FAT32) 1 mini USB type B (Device) for PC connection 1 Ethernet port 10 Modbus/TCP protocol	CAN Bus of expansion	CAN Bus of expansion
Memory	MicroSD expansion slot for diagrams up to 16GB	MicroSD expansion slot for diagrams up to 16GB	-	-



# EWCM 8900 - 9100 EO

DIN controllers for compressor racks



Codes	Descr.	Details
<b>EM32AG2*0GH00</b>	EWCM 8900 EO	13 DIN
<b>EM32BH2*0GH00</b>	EWCM 9100 EO	13 DIN
<b>EMK0000B0G000</b>	spare keyboard ENG/ITA	
<b>CO000029</b>	3m cable keyboard-base	
<b>CCA0BUI02N000</b>	USB Copy Card	

The letter in this position indicates the languages available for the code:

A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; O: RUS/ENG; Q: TUR/ENG  
Keyboard included.

## Applications

The new series of controllers for EWCM EO (Environmentally Optimised) compressor racks provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data. Energy saving is guaranteed thanks to the dedicated control algorithms.

- Sub-critical CO<sub>2</sub> management, glycol, R290 and R427 rooms
- Rooms managed in cascade by Plug & Play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of [www.eliwell.com](http://www.eliwell.com).

## Common features

<b>Insulation Class</b>	2
<b>Operating temperature</b>	-5...55°C
<b>Storage temperature</b>	-30...85°C
<b>Ambient humidity of use and storage</b>	10...90% RH (non-condensing)

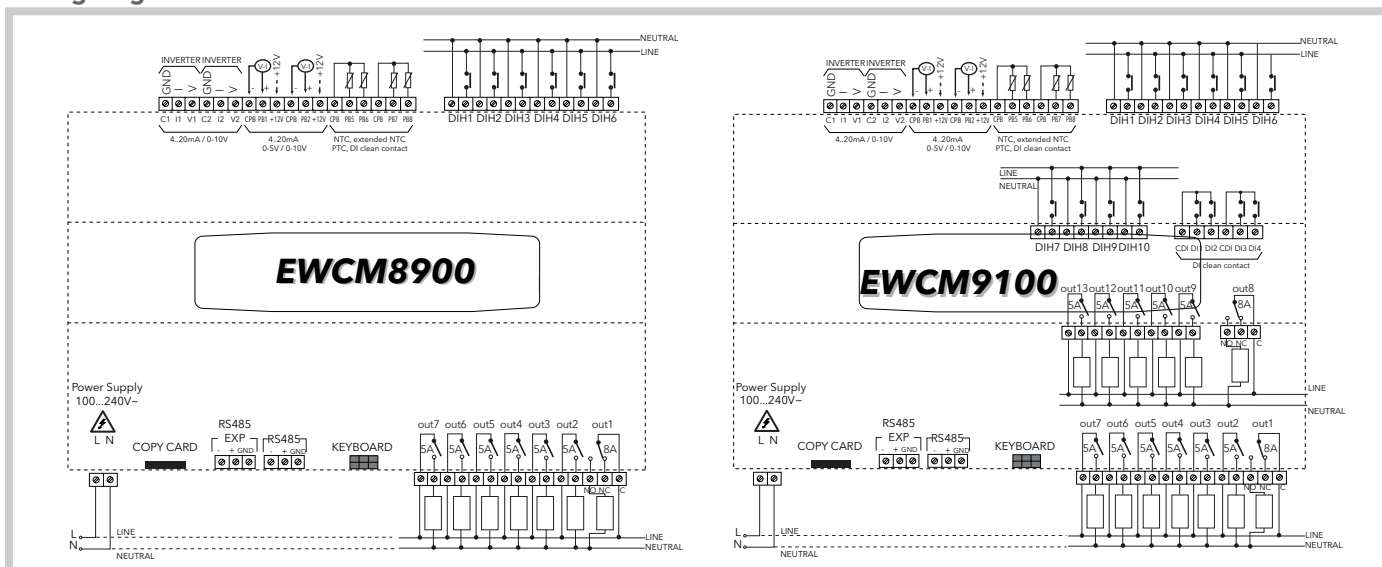
### Connector for base-keyboard

<b>connection</b>	rapid 6-way connector
<b>Compatible refrigerants</b>	R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO <sub>2</sub> ), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23

## Technical data

	EWCM 8900	EWCM 9100
Container	PC+ABS UL94 V-0 plastic resin casing, 13 DIN modules (227.5x110x60mm)	PC+ABS UL94 V-0 plastic resin casing, 13 DIN modules (227.5x110x60mm)
Installation:	on DIN Omega bar support	on DIN Omega bar support
Analogue inputs:	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs	6 voltage (100...240V~)	10 voltage (100...240V~) + 4 configurable voltage-free.
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	2 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ + 1 SPDT 8(3)A 250V~	11 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to TelevisSystem and systems based on the ModBus protocol</li> <li>• RS-485 EXP for connection to pulse/stepper (V800/V910) driver</li> </ul>	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to TelevisSystem and systems based on the ModBus protocol</li> <li>• RS-485 EXP for connection to pulse/stepper (V800/V910) driver</li> </ul>
Display:	LCD on external keyboard	LCD on external keyboard
Functions:	inverter control both in suction and discharge	inverter control both in suction and discharge
Clock:	present	present
Power consumption:	20W	20W
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

## Wiring diagrams





# EWCM 9900 EO

DIN controllers for compressor racks



Codes	Descr.	Details
EM83C13*0GH00	EWCM 9900 EO	18 DIN
EMK0000B0G000	spare keyboard ENG/ITA	
CO000029	3m cable keyboard-base	
CCA0BUI02N000	USB Copy Card	

The letter in this position indicates the languages available for the code:  
A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; O: RUS/ENG  
Keyboard included.

## Applications

The new series of controllers for EWCM EO (Environmentally Optimised) compressor racks provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data. Energy saving is guaranteed thanks to the dedicated control algorithms.

- Sub-critical CO<sub>2</sub> management, glycol, R290 and R427 rooms
- Rooms managed in cascade by Plug & Play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of [www.eliwell.com](http://www.eliwell.com).

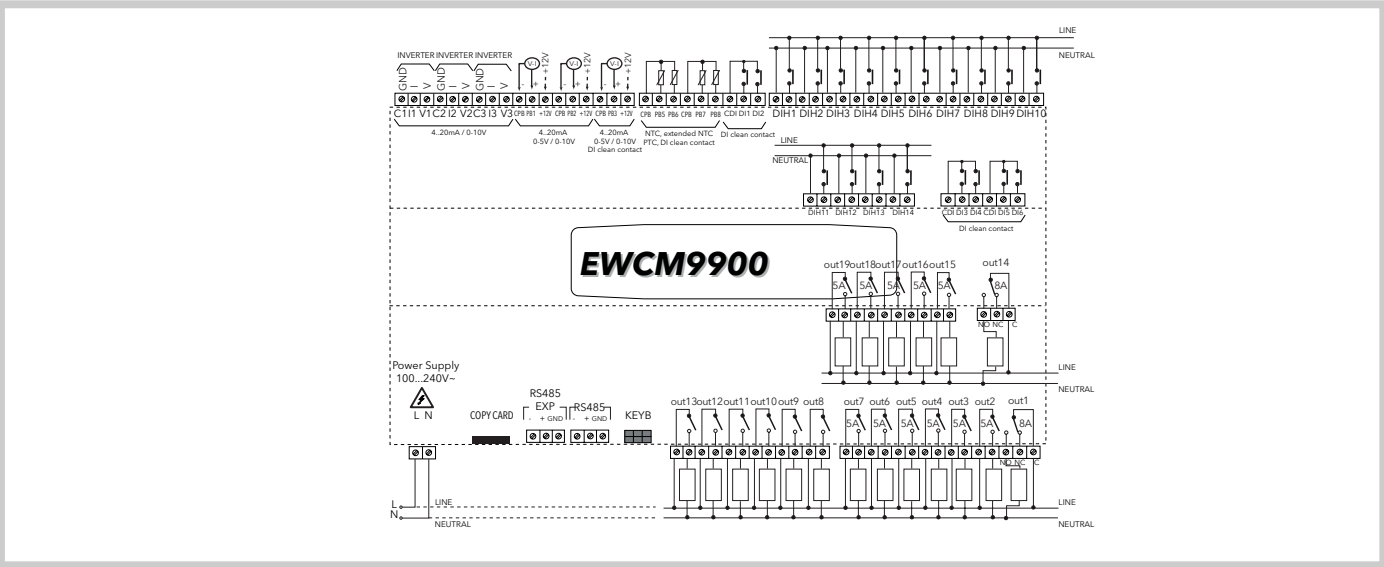
## Common features

<b>Insulation Class</b>	2	<b>Connector for base-keyboard connection</b>	rapid 6-way connector
<b>Operating temperature</b>	-5...55°C	<b>Compatible refrigerants</b>	R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO <sub>2</sub> ), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23
<b>Storage temperature</b>	-30...85°C		
<b>Ambient humidity of use and storage</b>	10...90% RH (non-condensing)		

## Technical data

	EWCM 9900
Container	PC+ABS plastic resin casing, UL94 V-0 18 DIN modules (315x110x60mm) on DIN Omega bar support
Installation:	
Analogue inputs:	4 NTC/NTC extended/PTC/DI + 2 high precision current/voltage (4...20mA / 0...5V / 0...10V) + 1 current/voltage (4...20mA / 0...5V / 0...10V)
Digital inputs	14 voltage (100...240V~) + 6 configurable voltage-free
Analogue outputs:	3 voltage/current (0...10V/4...20mA)
Digital outputs:	17 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	• TTL port for connection to CopyCard USB • RS-485 for connection to Televis <b>System</b> and systems based on the ModBus protocol • RS-485 EXP for connection to pulse/stepper (V800/V910) driver
Display:	LCD on external keyboard
Functions:	inverter control both in suction and discharge
Clock:	present
Power consumption:	20W
Power supply:	100...240V~ ±10% 50/60Hz

## Wiring diagrams



# FASEC 33 - FASEC 43 (C) - FASEC 53

Speed controllers for single-phase fans



Codes	Descr.	Power supply	Function
<b>FA53370000</b>	FASEC 33	220V~	condensation
<b>FA54370000</b>	FASEC 43	220V~	evaporation
<b>FA55370000</b>	FASEC 53	220V~	manual
<b>CN111114</b>	Octal baseboard		

\* probe not included

## Applications

The FASEC 33 and FASEC 43 (C) instruments are designed for speed control and are particularly suited for applications on refrigeration units for the condensation function.

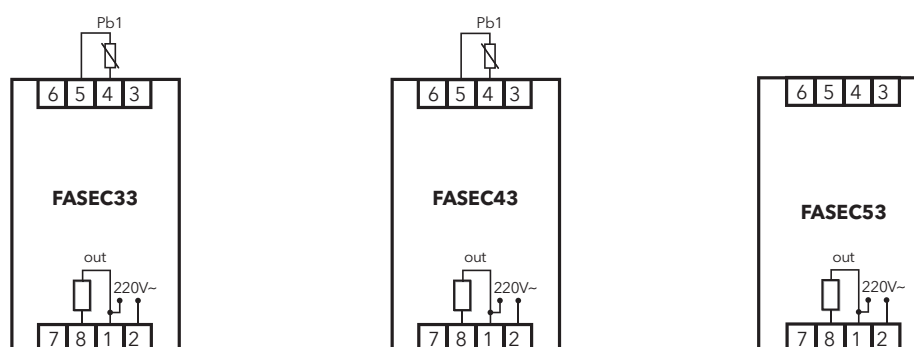
The FASEC 53 is a manual fan regulator suitable for applications on refrigeration units.

## Common features

<b>Front panel protection</b>	IP20	<b>Installation</b>	panel-mounted, with 45x92mm hole
<b>Container</b>	plastic body in flame-retardant NORYL	<b>Operating temperature</b>	-5...60°C
<b>Dimensions</b>	front panel 48x96mm, depth 96mm excluding baseboard	<b>Storage temperature</b>	-30...75°C

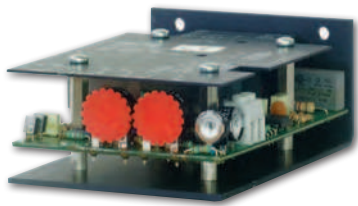
Technical data	FASEC 33	FASEC 43 (C)	FASEC 53
Connections:	Octal baseboard	Octal baseboard	Octal baseboard
Regulation:	-	-	from 0 to 100% with knob on front panel
Analogue inputs:	1 PTC	1 PTC	-
Setting output:	1 triac 2.5A, triac 7A (optional)	1 triac 2.5A, triac 7A (optional)	1 triac 2.5A, triac 7A (optional)
Setting range:	0...60°C	<ul style="list-style-type: none"> <li>FASEC 43: -40...30°C</li> <li>FASEC 43C: 0...60°C</li> </ul>	
External filter (for version 7A):	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt
Type of setting:	proportional to phase capacity step	proportional to phase capacity step	manual phase capacity step
Type of function:	for condensation	for evaporation	manual
Power supply:	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz

## Wiring diagrams



# FASEC 100 series - FASEC 500 series

Speed controllers for single-phase fans



Codes	Descr.	Power supply	Function
FA100780	FASEC 100	220V~	condensation/evaporation
FA105780	FASEC 105	220V~	condensation/evaporation
FA155700	FASEC 155	220V~	manual
FA500780	FASEC 500	220V~	
FA505780	FASEC 505	220V~	
FA555700	FASEC 555	220V~	

\* probe not included

## Applications

FASEC 100 and 500 units are automatic fan regulators suitable for applications on refrigeration units for both evaporation and condensation.

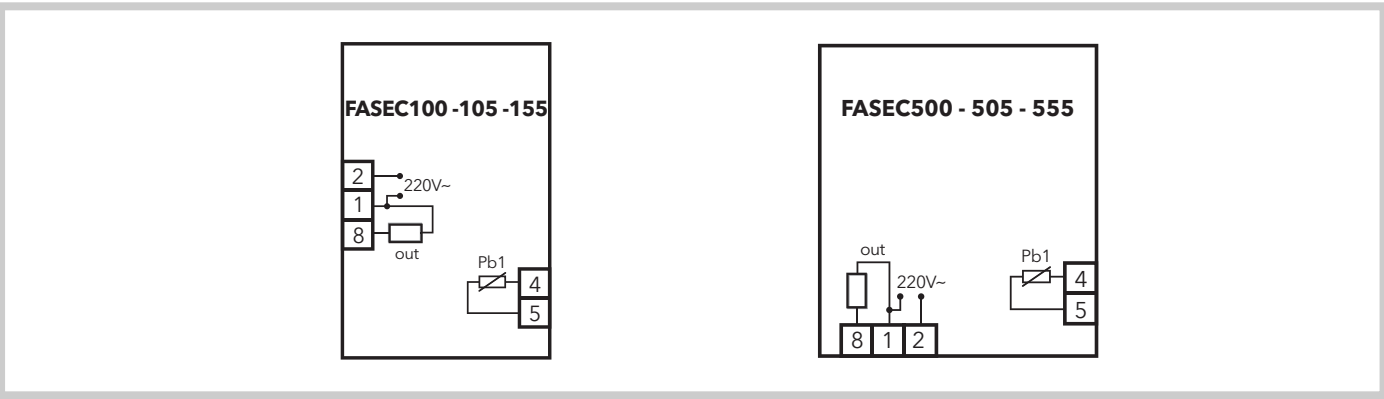
## Common features

<b>Installation</b>	panel-mounted or on panel back (FASEC 100, FASEC 500), wall-mounted (FASEC 105, 155, 505, 555)	<b>Operating temperature</b> -5...60°C <b>Storage temperature</b> -30...75°C
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Technical data	FASEC 100	FASEC 105	FASEC 155
Casing:	open board version	IP55 plastic container	IP55 plastic container
Connections:	on screw-on terminal block	on screw-on terminal block	on screw-on terminal block
Analogue inputs:	1 PTC	1 PTC	1 PTC
Setting output:	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit
Switching point:	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C
Type of setting:	phase capacity step	phase capacity step	phase capacity step
Type of function:	for condensation and evaporation	for condensation and evaporation	manual
Power supply:	220V~ ±10% 50Hz	220V~ ±10% 50Hz	220V~ ±10% 50Hz
Pilotable power:	5A	7A	7A
Type of control:	automatic	automatic	automatic

Technical data	FASEC 500	FASEC 505	FASEC 555
Casing:	open board version	IP55 plastic container	IP55 plastic container
Connections:	on screw-on terminal block	on screw-on terminal block	on screw-on terminal block
Analogue inputs:	1 PTC	1 PTC	1 PTC
Setting output:	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit	proportional on filtered triac with anti-interference unit
Switching point:	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C	settable with trimmer in range 3...55°C
Type of setting:	phase capacity step	phase capacity step	phase capacity step
Type of function:	for condensation and evaporation	for condensation and evaporation	manual
Power supply:	220V~ ±10% 50Hz	220V~ ±10% 50Hz	220V~ ±10% 50Hz
Pilotable power:	23A	23A	23A
Type of control:	automatic	automatic	automatic

## Wiring diagrams



# WM 253

## Speed controllers for single-phase wall fans



Codes	Descr.	Probe	Power supply
<b>VM253710</b>	WM 253 Manual	-	230V~

### Applications

The WM 253 units are automatic fan regulators suitable for air conditioning systems.

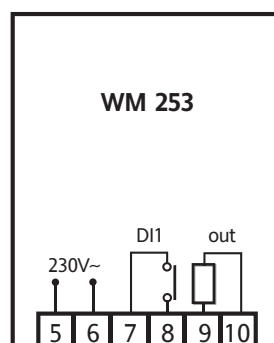
### Common features

<b>Front panel protection</b>	IP50	<b>Operating temperature</b>	-5...55°C
<b>Container</b>	Flame retardant ABS plastic with snap closure	<b>Storage temperature</b>	-30...75°C
<b>Dimensions</b>	front panel 75x108mm, depth 49mm	<b>Ambient operation</b>	
<b>Installation</b>	wall-mounted, fixing screws provided	<b>and storage humidity</b>	10...90% RH (non-condensing)

### Technical data

	<b>WM 253</b>
Connections:	on screw-on terminal block for max 2.5mm wires
Setting:	from 0 to 100% with knob on front panel
Input:	not available
Setting output:	2.5A triac
Type of function:	manual control; speed proportional to position of potentiometer on front panel
Type of setting:	proportional to phase capacity step
Power consumption:	3VA max
Power supply:	230V~ ±10% 50Hz

### Wiring diagrams



# DRM300 - RGM300

Speed controllers for three-phase fans



Codes	Descr.	Details
ND3124000CS01	DRM300 12A SCR 0-10V 400V IP55	Slave
ND3204000CS01	DRM300 20A SCR 0-10V 400V IP55	Slave
ND3284000CS01	DRM300 28A SCR 0-10V 400V IP55	Slave
AR312400UPPS1	RGM300 12A SCR NTC 400V IP55	Master/Slave
AR360400UPPS1	RGM300 60A SCR NTC 400V IP55	Master/Slave

## Applications

Regulators in the DRM300 range are three-phase multi-function power units, managed by a cutting-edge extended range micro processor (-40/85°C), to control three-phase Vac voltage through an SCR phase capacity step system.

Regulators in the RGM300 range are three-phase multi-function power units, managed by a cutting-edge extended range micro processor (-40/85°C), to control three-phase Vac voltage through an SCR phase capacity step system.

DRM300 and RGM300 units are used in Air Conditioning, Refrigeration, Heating, Ventilation, De-stratification, Thermo-ventilation, Suction and air Treatment plants in general.

## Common features

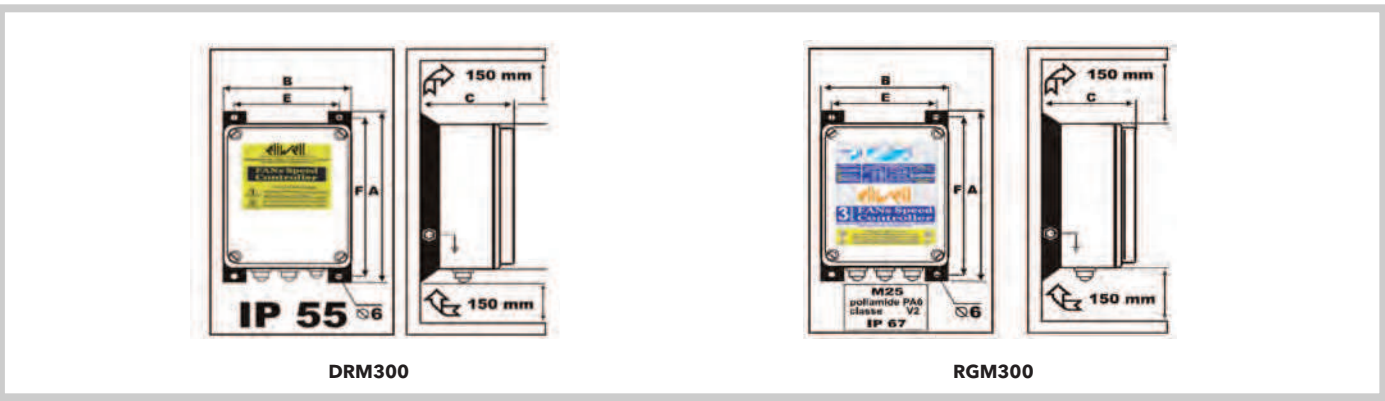
Flexible and can be used straight away	Signals in mA - V <sub>ac</sub> - PWM
Includes Quick Start mode, with all regulation parameters pre-set	The software supervises regulator and fan operations

## Technical data

	DRM300 12A - 20A - 28A	RGM300 12A - 60A
Dimensions:	<b>12A models:</b> 201x285x130mm (BxAxC) <b>20A models:</b> 235x350x181mm (BxAxC) <b>28A models:</b> 235x350x204mm (BxAxC)	<b>12A models:</b> 201x285x130mm (BxAxC) <b>60A models:</b> 315x460x228mm (BxAxC)
Power supply:	400V~ extended range (min 340V - max 480V) -15% / +20% 3-phase	400V~ -15% / +20%
Frequency:	50/60Hz with recognition and automatic selection of network frequency	50/60Hz with automatic selection
Rated current @50°C:	12A - 20A - 28A based on model	12A - 60A based on model
Control circuit power:	5VA	10VA
Power dispelled in the environment:	<b>12A models:</b> 48W <b>20A models:</b> 80W <b>28A models:</b> 112W	<b>12A models:</b> 72W <b>60A models:</b> 360W
Control signal:	0...10V <sub>ac</sub> 4...20mA PWM	0...10V <sub>ac</sub> 0...5V <sub>ac</sub> 4...20mA 0...20mA
Ambient operating temperature:	-20...+50°C*	-20...+50°C**
Ambient storage temperature:	-30...+85°C	-30...+85°C
Use environment humidity and in storage:	RH < 85% (non condensing)	RH < 85% (non condensing)

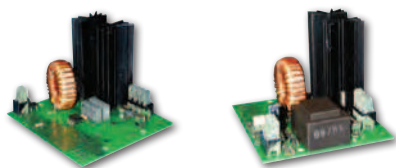
\*for temperatures < -10°C use **Start/Stop** \*\*for temperatures < -10°C use **S2**

## Dimensions



# CFS02- CFS04 - CFS06 - CFS08

Power modules to control fan speed



Codes	Descr.
<b>CF10x11011000</b>	CFS0x
<b>CF10x21011000</b>	CFS0x /V
<b>CF10x31011000</b>	CFS0x /I

x=2,4,6,8

## Applications

The instruments in the new CFS range are optional modules which can be connected to the main control systems for regulation of single-phase fan speed at currents between 2 A and 9 A. The power supply is 230V~ max.

## Features

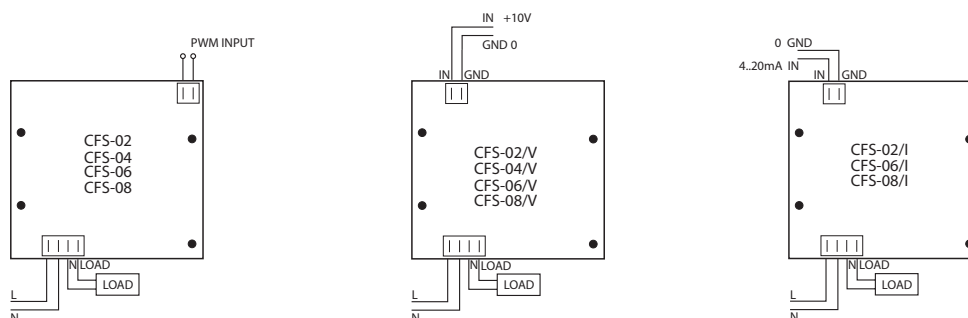
CFS regulators come in an "open board" format and are available in various models (see table).

Models differ in relation to the rated load current applicable and the type of control signal, whether current, voltage or PWM (pulse modulation).

## Technical data

	CFS 02-04-06-08	CFS 02-04-06-08/V	CFS 02-06-08/I
Dimensions:	<b>CFS02:</b> 90.0x83.0x38.0mm(LxDxH)+1.6mm(PCB) <b>CFS 04:</b> 90.0x83.0x51.0mm(LxDxH)+1.6mm(PCB) <b>CFS06:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB) <b>CFS08:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB)	<b>CFS02/V:</b> 90.0x83.0x38.0mm(LxDxH)+1.6mm(PCB) <b>CFS04/V:</b> 90.0x83.0x51.0mm(LxDxH)+1.6mm(PCB) <b>CFS06/V:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB) <b>CFS08/V:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB)	<b>CFS02/I:</b> 90.0x83.0x38.0mm(LxDxH)+1.6mm(PCB) <b>CFS04/I:</b> 90.0x83.0x51.0mm(LxDxH)+1.6mm(PCB) <b>CFS06/I:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB) <b>CFS08/I:</b> 90.0x83.0x63.5mm(LxDxH)+1.6mm(PCB)
Power supply	230V~ ±10% 50Hz	230V~ ±10% 50Hz	230V~ ±10% 50Hz
Rated current at 40°C:	2.5A - CFS02 model 5A - CFS04 model 7A - CFS06 model 9A - CFS08 model	2.5A - CFS 02/V model 5A - CFS 04/V model 7A - CFS 06/V model 9A - CFS 08/V model	2.5A - CFS 02/I model 5A - CFS 04/I model 7A - CFS 06/I model 9A - CFS 08/I model
Rated current @50°C	2A - CFS02 model 4A - CFS04 model 6A - CFS06 model 8A - CFS08 model	2A - CFS 02/V model 4A - CFS 04/V model 6A - CFS 06/V model 8A - CFS 08/V model	2A - CFS 02/I model 5A - CFS 04/I model 6A - CFS 06/I model 8A - CFS 08/I model
Control signal:	PWM	0...10V $\overline{\text{m}}$	4...20mA
Ambient operating temperature:	-10...+50°C	-10...+50°C	-10...+50°C
Ambient storage temperature:	-20...+85°C	-20...+85°C	-20...+85°C
Use environment humidity and in storage:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

## Wiring diagrams





# SOLUTIONS FOR SUPERMARKETS

In the commerce sector, fresh food product sales are definitely where energy is used most. Technologies are now available which can give you substantial power savings - up to 24% of the plant's energy bill.

Energy saving solutions must also satisfy the sector's basic requirements, with special attention for food quality as provided by HACCP regulations and European standards (EN13845 - EN12830) governing fresh and frozen food products.

Eliwell, always attentive to the needs of the sector, offers a product range combining energy efficiency with storage quality and excellent presentation of stored products. For Eliwell, eco-sustainability also means offering open solutions capable of integrating a variety of system components, including lighting, air conditioning and domestic water into a single solution, depending on the installation's characteristics and location.



# CO<sub>2</sub> transcritical system

Control solution with transcritical CO<sub>2</sub> booster / parallel compression application



Code	Descr.	Notes
EPAS1PCTA500	EWC9000 PRO 42D SSR /CO <sub>2</sub> T	With integrated display and SSR output
EPAS0PCTA500	EWC9000 PRO 42B SSR /CO <sub>2</sub> T	SSR Outputs
EP4000000B00	EXP 4D PRO 14 I/O	Expansion module 14/ I/O
EPK01000000	EVK PRO DISPLAY /GR	Remote display

## Applications

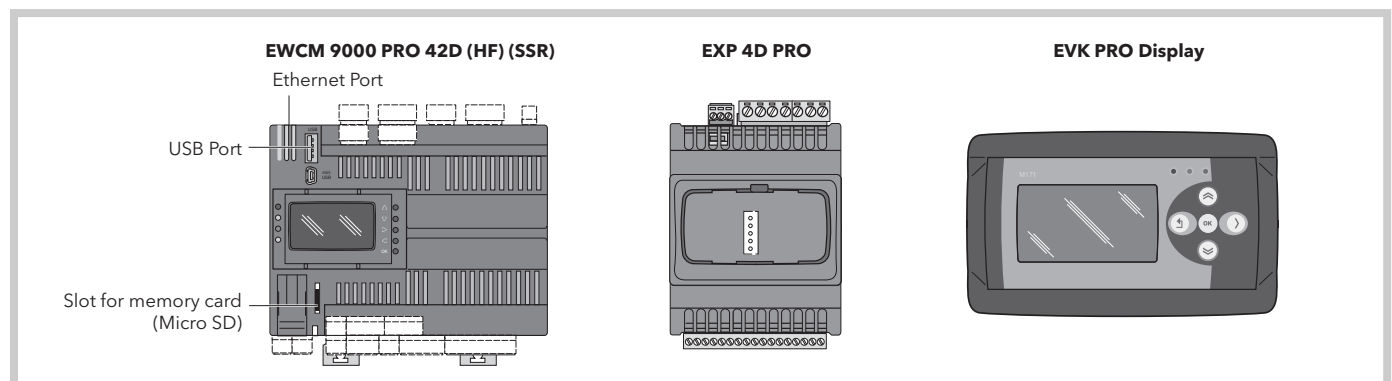
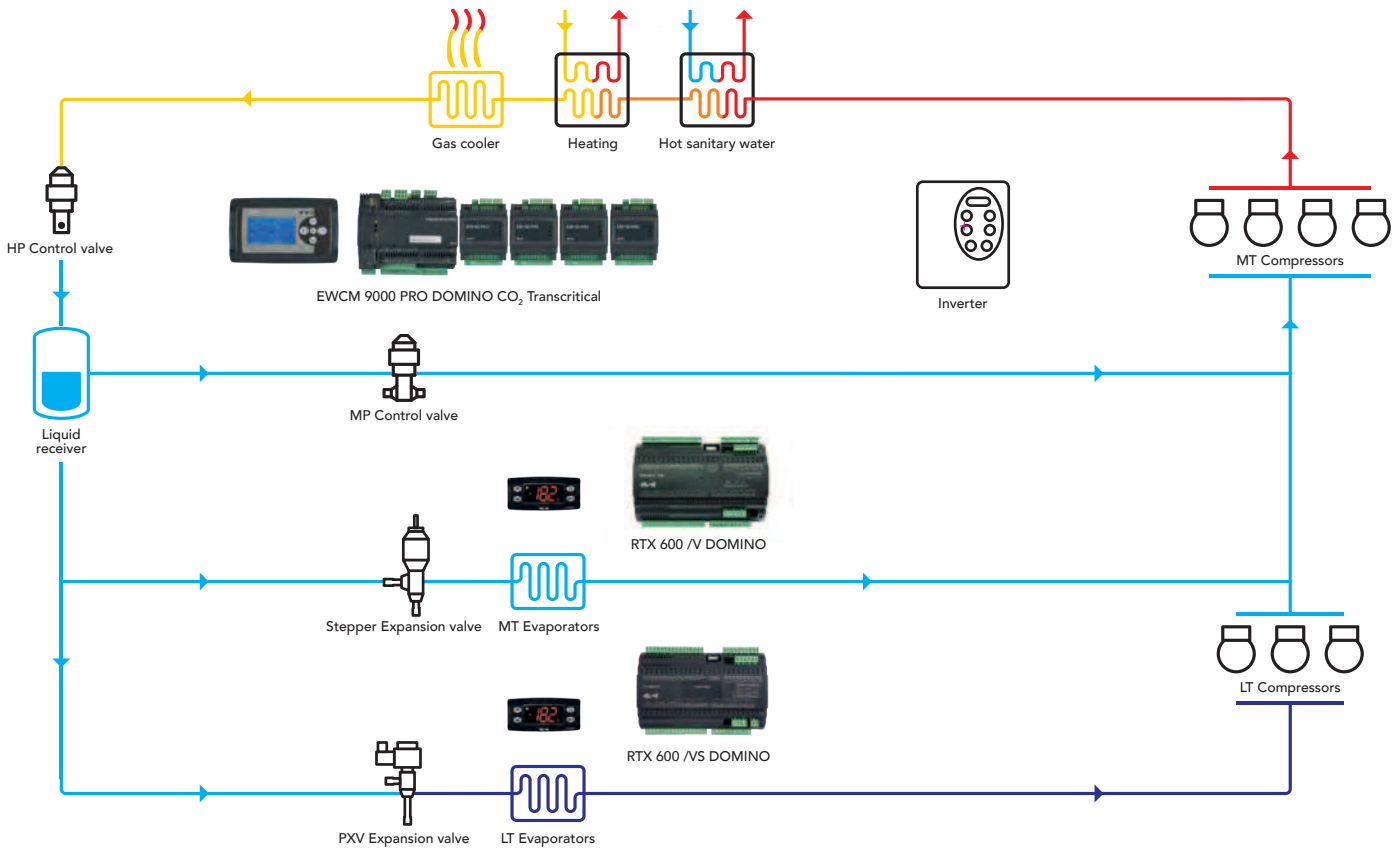
The new series of controllers for EWC9000 PRO compressor racks is the solution for the sustainable systems based on natural refrigerants.

The EWC9000 PRO DOMINO /CO<sub>2</sub>T model is dedicated to the solutions for transcritical CO<sub>2</sub> with booster circuit and allows for the management of up to two circuits for heat recovery.

EWC9000 PRO DOMINO is compact and can be expanded with configurable keyboard modules thanks to the software tool provided to rapidly adapt to various plant solutions. The controller can be connected to the Televis system, Modbus/RTU and Modbus/TCP systems and has a data registration system for diagnosis. In the area reserved for the [www.eliwell.com](http://www.eliwell.com) there are language updates available, and the applicative detailed documentation.

## Features

Management of 2 circuits up to 8 compressors	Expandable up to 12 EXP 4D PRO modules
Parallel booster/compression management up to 4 compressors	Up to 2 optional remote displays
Management of modulating condensation fans	





# EWCM 9000 PRO-HF

Programmable controller with transcritical CO2 booster / parallel compression application



Code	Descr.	Notes
EPAS1FCTA500	EWCM 9000 PRO-HF 42D SSR /CO2T	With integrated display and SSR output
EPAS0FCTA500	EWCM 9000 PRO-HF 42B SSR /CO2T	SSR Outputs
EP4000000B00	EXP 4D PRO 14 I/O	Expansion module 14/ I/O
EPK010000000	EVK PRO DISPLAY /GR	Remote display

## Applications

EWCM 9000 PRO-HF allows for the controller to be adapted to specific needs thanks to the options of integrating and changing the applicative controller software. The FREE Studio development tool allows for all the controller's maximum performance to be taken advantage of, re-configuring the I/O and making the most of the vast field connectivity and that of the system found on the controller

The basic library provided by Eliwell allows for the development times to be reduced thanks also to the debugging systems, simulation and diagnostics, even remotely, that can be found in the FREE Studio system

Furthermore, Eliwell has a team specialised in supporting the developers and a network of partners capable of assisting clients in devising customised solutions.

## Features

Controller freely programmable with FREE Studio	Expandable up to 12 modules and 2 remote keyboards
Basic library for transcritical CO2 booster / parallel compression solution	Modbus/RTU, Modbus/TCP, CAN, Web server/http connectivity
Diagnostic and simulation tools	

Technical data	EWCM 9000 PRO DOMINO EWCM 9000 PRO-HF	EWCM 9000 PRO DOMINO SSR EWCM 9000 PRO-HF SSR	EXP4D PRO	EVK PRO
Dimensions	144 x 110 mm frontal panel, depth 60mm	144 x 110 mm frontal panel, depth 60mm	70.2 x 87 mm frontal panel, depth 61.6 mm	190 x 96 mm frontal panel, depth 9.9mm, total depth 35mm
Power supply	24 Vac / 20...38 Vdc	24 Vac / 20...38 Vdc	24 Vac / 24 Vdc	24 Vac / 24 Vdc
Power consumption	35 VA / 15 W	35 VA / 15 W	16 VA / 7 W	5W
Analogue inputs	12 configurable inputs: NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 0-20 mA 4-20 mA 0-10 V 0-5 V 0-5 V ratiometric	12 configurable inputs: NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 0-20 mA 4-20 mA 0-10 V 0-5 V 0-5 V ratiometric	4 configurable inputs NTC -40...+137°C DI NTC -50...+110°C PT1000 -200...+850°C PTC -55...+150°C 4-20 mA 0-10 V 0-5 V	-
Digital inputs	10 SELV +24 V ac/dc opto isolator inputs 2 rapid opto isolator inputs, up to 2 kHz	10 SELV +24 V ac/dc opto isolator inputs 2 rapid opto isolator inputs, up to 2 kHz	4 safety extra low voltage SELV	-
Analogue outputs	4 outputs 0-10 V 2 configurable outputs 0-10 V 4-20 mA Open Collector	4 outputs 0-10 V 2 configurable outputs 0-10 V 4-20 mA Open Collector	2 x 0-10V	-
Digital outputs	10 3 A SPST +250 V a.c. relays 2 1 A SPDT +250 V a.c. relays	8 3 A SPST +250 V a.c. relays 2 1 A SPDT +250 V a.c. relays 2 SSR x 0.5 A +240 V c.a.	3 3 A SPST +250 V a.c. relays 1 1 A SPDT +250 V a.c. relays	-
Display	128x64px backlit graphic LCD 4 status LEDs	128x64px backlit graphic LCD 4 status LEDs	-	128x64px backlit graphic LCD 3 status LEDs
Connectivity	CAN Bus of expansion 2 RS 485 protocol Modbus RTU serials 1 USB type A (Host) Mass Storage (FAT32) 1 mini USB type B (Device) for PC connection 1 Ethernet port 10 Modbus/TCP protocol	CAN Bus of expansion 2 RS 485 protocol Modbus RTU serials 1 USB type A (Host) Mass Storage (FAT32) 1 mini USB type B (Device) for PC connection 1 Ethernet port 10 Modbus/TCP protocol	CAN Bus of expansion	CAN Bus of expansion
Memory	MicroSD expansion slot for diagrams up to 16GB	MicroSD expansion slot for diagrams up to 16GB	-	-

# EWCM 8900 - 9100 EO

DIN controllers for compressor racks



Codes	Descr.	Details
<b>EM32AG2*0GH00</b>	EWCM 8900 EO	13 DIN
<b>EM32BH2*0GH00</b>	EWCM 9100 EO	13 DIN
<b>EMK0000B0G000</b>	spare keyboard ENG/ITA	
<b>CO000029</b>	3m cable keyboard-base	
<b>CCA0BUI02N000</b>	USB Copy Card	

The letter in this position indicates the languages available for the code:

A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; O: RUS/ENG; Q: TUR/ENG  
Keyboard included.

## Applications

The new series of controllers for EWCM EO (Environmentally Optimised) compressor racks provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data. Energy saving is guaranteed thanks to the dedicated control algorithms.

- Sub-critical CO<sub>2</sub> management, glycol, R290 and R427 rooms
- Rooms managed in cascade by Plug & Play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of [www.eliwel.com](http://www.eliwel.com).

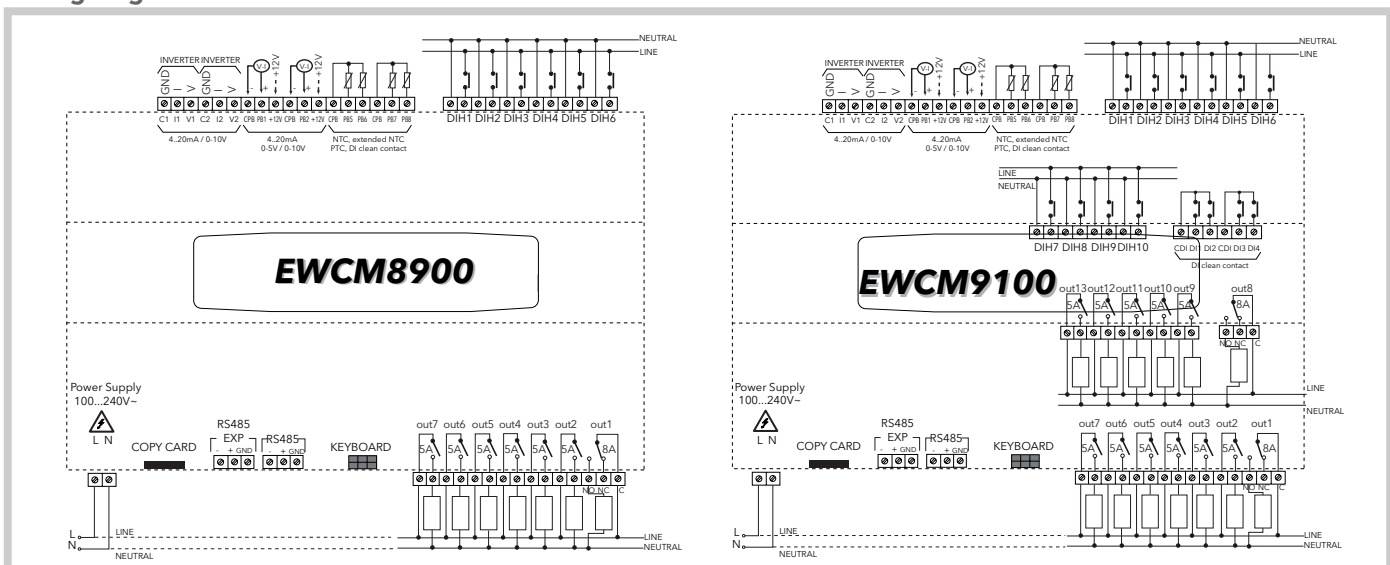
## Common features

<b>Insulation Class</b>	2	<b>Connector for base-keyboard connection</b>	rapid 6-way connector
<b>Operating temperature</b>	-5...55°C	<b>Compatible refrigerants</b>	R22, R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO <sub>2</sub> ), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23
<b>Storage temperature</b>	-30...85°C		
<b>Ambient humidity of use and storage</b>	10...90% RH (non-condensing)		

## Technical data

	EWCM 8900	EWCM 9100
Container	PC+ABS plastic resin casing, UL94 V-0 13 DIN modules (227.5x110x60mm)	PC+ABS plastic resin casing, UL94 V-0 13 DIN modules (227.5x110x60mm)
Installation:	on DIN Omega bar support	on DIN Omega bar support
Analogue inputs:	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs	6 voltage (100...240V~)	10 voltage (100...240V~) + 4 configurable voltage-free.
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	2 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ + 1 SPDT 8(3)A 250V~	11 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to TelevisSystem and systems based on the ModBus protocol</li> <li>• RS-485 EXP for connection to pulse/stepper (V800/V910) driver</li> </ul>	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to TelevisSystem and systems based on the ModBus protocol</li> <li>• RS-485 EXP for connection to pulse/stepper (V800/V910) driver</li> </ul>
Display:	LCD on external keyboard	LCD on external keyboard
Functions:	inverter control both in suction and discharge	inverter control both in suction and discharge
Clock:	present	present
Power consumption:	20W	20W
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

## Wiring diagrams



# EWCM 9900 EO

DIN controllers for compressor racks



Codes	Descr.	Details
EM83CI3*0GH00	EWCM 9900 EO	18 DIN
EMK0000B0G000	spare keyboard ENG/ITA	
CO000029	3m cable keyboard-base	
CCA0BUI02N000	USB Copy Card	

The letter in this position indicates the languages available for the code:  
A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; O: RUS/ENG  
Keyboard included.

## Applications

The new series of controllers for EWCM EO (Environmentally Optimised) compressor racks provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data. Energy saving is guaranteed thanks to the dedicated control algorithms.

- Sub-critical CO<sub>2</sub> management, glycol, R290 and R427 rooms
- Rooms managed in cascade by Plug & Play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of [www.eliwell.com](http://www.eliwell.com).

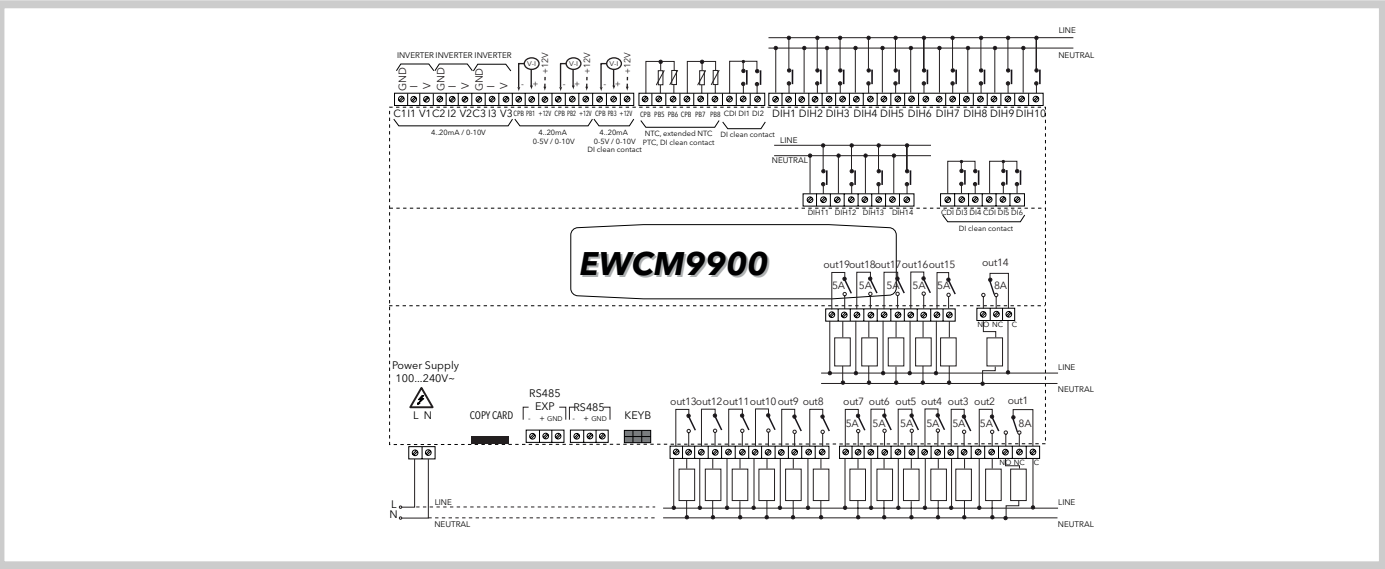
## Common features

Insulation Class	2	Connector for base-keyboard connection	rapid 6-way connector
Operating temperature	-5...55°C	Compatible refrigerants	R22, R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO <sub>2</sub> ), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23
Storage temperature	-30...85°C		
Ambient humidity of use and storage	10...90% RH (non-condensing)		

## Technical data

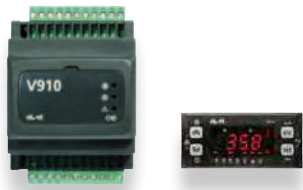
	EWCM 9900
Container	PC+ABS plastic resin casing, UL94 V-0 18 DIN modules (315x110x60mm) on DIN Omega bar support
Installation:	
Analogue inputs:	4 NTC/NTC extended/PTC/DI + 2 high precision current/voltage (4...20mA / 0...5V / 0...10V) + 1 current/voltage (4...20mA / 0...5V / 0...10V)
Digital inputs	14 voltage (100...240V~) + 6 configurable voltage-free
Analogue outputs:	3 voltage/current (0...10V/4...20mA)
Digital outputs:	17 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	• TTL port for connection to CopyCard USB • RS-485 for connection to TelevisSystem and systems based on the ModBus protocol • RS-485 EXP for connection to pulse/stepper (V800/V910) driver
Display:	LCD on external keyboard
Functions:	inverter control both in suction and discharge
Clock:	present
Power consumption:	20W
Power supply:	100...240V~ ±10% 50/60Hz

## Wiring diagrams



# Subcritical CO<sub>2</sub> cascade system

## Motorised electronic valve control



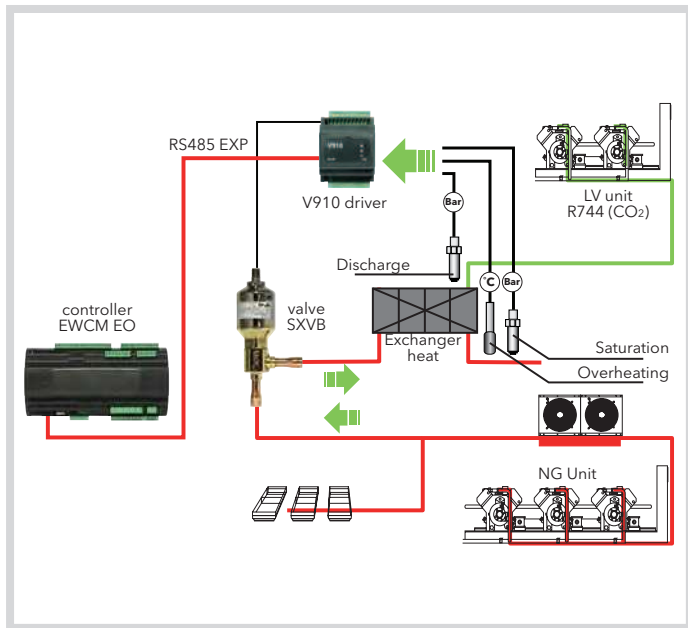
Codes	Descr.	Details
<b>EVD4A31BS2100</b>	V910 V3 EEVD step valve 24V RS485	EEV driver module with dual PID controller
<b>SKP1000000000</b>	SKP10 - Configuration keyboard	Keyboard for configuration
<b>DMI100x002000*</b>	Device Manager Interface	

\*x=1: End User; x=2: Service; x=3: Manufacturer

## Applications

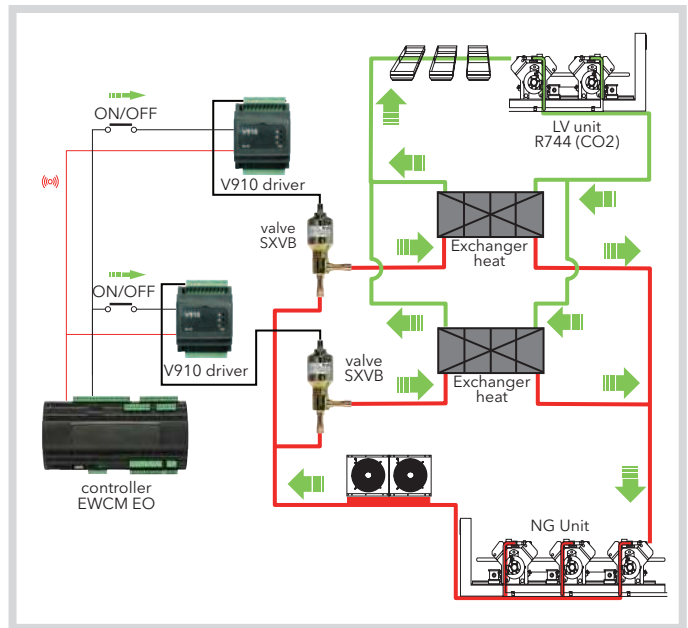
The V910 driver for motorised electronic valve control is designed for excellent control of heat exchangers in CO<sub>2</sub> subcritical cascade systems in combination with HFC and HFO refrigerants.

Its flexibility makes it ideal for the control of hot gas bypass systems, compressor supply temperature / pressure and liquid subcooling.



### Solution integrated with EWCM 8/9000 EO

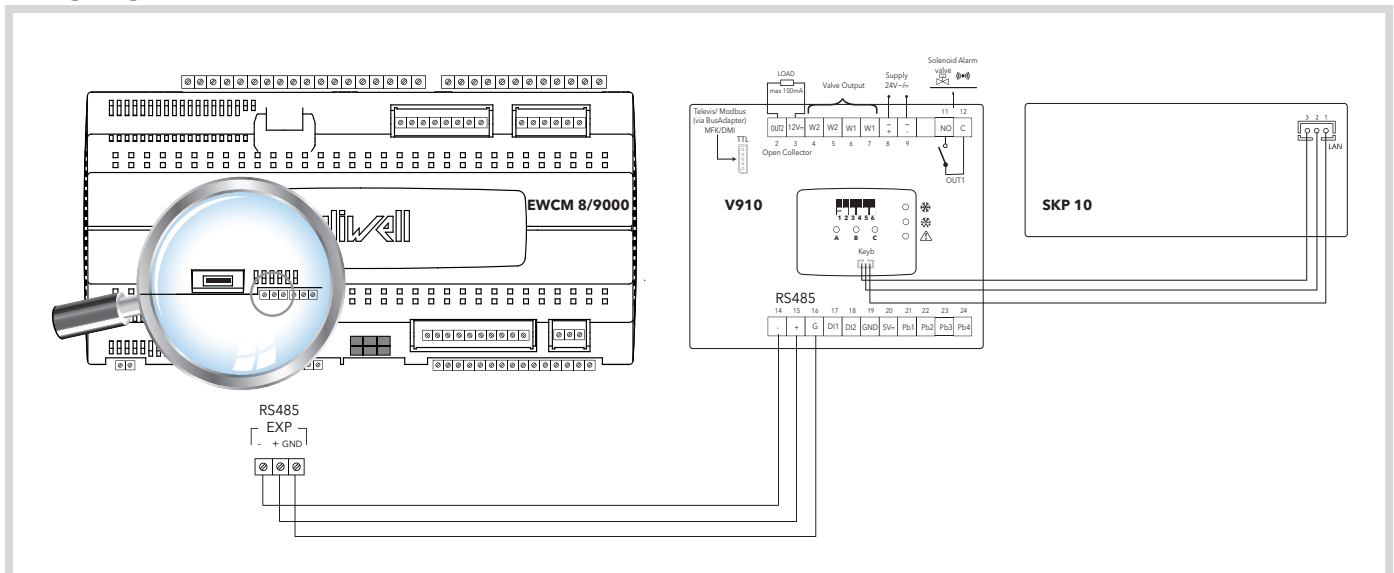
The high-precision PID control of the V910 module is integrated with the EWCM 8/9000 EO series controllers through the serial port dedicated to share real-time configuration and the heat exchanger control status, also through the Televis supervision system.



### Solution for dual heat exchanger

V910 is designed also for operation independent from the central controller, thus providing the option for configurations with multiple heat exchangers in series or parallel to provide better power modulation and greater safety thanks to a redundant configuration.

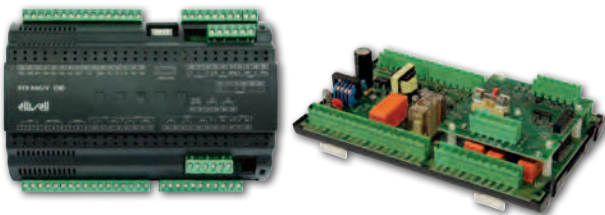
## Wiring diagram





# RTX600/V DOMINO - RTD600/V DOMINO - KDEPlus - ECPlus

DIN controllers for remote EEV systems



Codes	Descr.
EWK RTP0000000	TX 600 /V DOMINO + KDEPlus KIT
RTPNVBM0S3H00	RTX 600 /V DOMINO
RTQNVBM4S3H00	RTD 600 /V DOMINO
KDE400E004000	KDEPlus
EH000050V4000	ECPlus

## Applications

**RTX600/V** and **RTD600/V DOMINO** are electronic devices used to control remote counters, with electronic expansion valve, used singly or together in islands or can be remote. The innovative DOMINO adaptive control algorithm can work with overheating values of 4 K with R744 and less than 3 K for HFC and HFO, increasing the level of system efficiency simply by increasing the suction pressure.

The RTX600/V DOMINO and RTD600 /V DOMINO controllers can be interfaced with the KDEPlus keyboard, the ECPlus display module and the new KDTPPlus keyboards with touch technology.

## Features

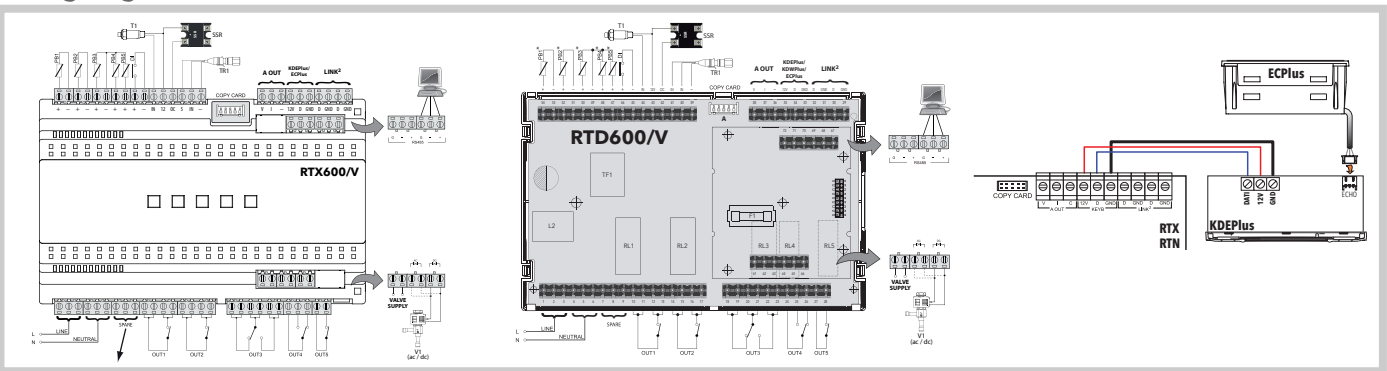
Adaptive overheating control for values below 3 K	Rapid synchronisation of remote and island cabinets with <b>Link<sup>2</sup></b> plug-n-play
Valve control configuration <b>with only 2 parameters</b>	Compatible with NTC, Pt1000, PTC probes
Intelligent defrosting (with clock) to <b>save energy</b> and preserve food better	
Control of heating elements of frames / anti-mist resistances	

## Technical data

	RTX600/V DOMINO-RTD600/V DOMINO	KDEPlus	ECPlus
Casing:	PC+ABS resin casing, UL94 V-0 <b>RTX600/V</b> : with box <b>RTD600/V</b> : without box	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	Body and window in polycarbonate
Dimensions:	10 DIN modules	front panel 74x32 mm, depth 30 mm	front panel 48x28.6 mm - depth 15 mm
Installation:	on DIN Omega bar support	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	-	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:	• NTC: -50.0°C...+110°C; • PTC: -55.0°C...+150°C; • Pt1000: -60°C...+150°C	see power board	see power board
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 1 4...20mA/D.I.* 1 ratiometric/D.I.* + 1 voltage-free D.I.	-	-
Connections:	• 1 voltage serial for keypad • 1 voltage serial for LAN • 1 RS-485 for connection to Televis <b>System</b> or ModBus monitoring system • 1 TTL port for connection to Unicard and DeviceManager (via DMI)	• screw terminals for connection to power board • JST for connection to KDEPlus display	• JST for connection to KDEPlus user terminal
Digital outputs:	2 SPST 16(8)A max 250V~ 2 SPDT 16(8)A + 8(4)A max 250V~ 1 SPST 8(4)A max 250V~ 1 O.C. multifunction: 12V~ 20mA 1 SSR 100...240V~/~; I <sub>max</sub> =300mA	-	-
Analogue outputs:	1 D.A.C. multifunction: 0...10V - 4...20mA	-	-
Accuracy:	better by 1.0%	-	-
Resolution:	1 or 0.1°C	-	-
Power supply:	SMP5 100...240V~ ±10% 50/60 Hz	from power board	from power board
Power consumption:	7.5W max	-	-
Ambient operating temperature:	-5...+55°C	-5...+55°C	-5...+55°C
Ambient storage temperature:	-30...+85°C	-30...+85°C	-30...+85°C
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

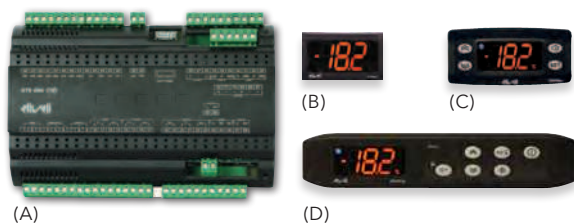
\* selectable by parameter ° selectable by parameter (from power board)

## Wiring diagrams



# RTX600 - KDEPlus - KDWPlus - ECPlus

DIN controllers for counters and cold rooms



Codes	Descr.
<b>RTX5HBM0S2H00</b>	RTX600
<b>KDE400E004000</b>	KDEPlus
<b>KDW6004004080</b>	KDWPlus
<b>EH000050V4000</b>	ECPlus

## Applications

**RTX600** (Environmentally Optimised, optimised for the environment) is an electronic device specifically designed for plug-in applications, with thermostatic valve. The RTX600 controller can be interfaced with the KDEPlus, KDWPlus keyboards and the ECPlus display module.

## Features

Relay of up to **2HP** for direct control of loads.

Removable terminals and customised quick connections

Intelligent defrosting (with clock) to **save energy** and preserve food better

Control of heating elements of frames / anti-mist resistances

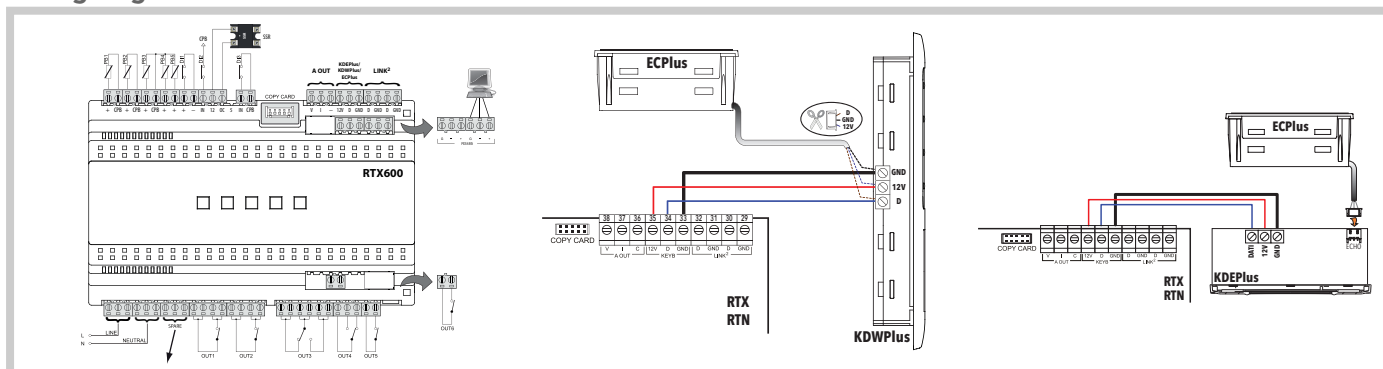
Rapid synchronisation of remote and island cabinets with **Link<sup>2</sup>** plug-n-play

Compatible with NTC, Pt1000, PTC probes

Technical data	RTX 600	KDEPlus	KDWPlus	ECPlus
Casing:	PC+ABS resin casing, UL94 V-0	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	
Dimensions:	10 DIN modules	front panel 74x32 mm, depth 30 mm	front panel 180x37 mm, depth 23mm	front panel 48x28.6 mm - depth 15 mm
Installation:	on DIN Omega bar support	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel-mounting, with 150x31 mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	-	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:	<ul style="list-style-type: none"> <li>• NTC: -50.0°C...+110°C;</li> <li>• PTC: -55.0°C...+150°C;</li> <li>• Pt1000: -60°C...+150°C</li> </ul>	see power board	see power board	see power board
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 3 D.I.* voltage-free	-	-	-
Connections:	<ul style="list-style-type: none"> <li>• 1 voltage serial for keypad</li> <li>• 1 voltage serial for LAN</li> <li>• 1 RS-485 for connection to TelevisSystem or Modbus</li> <li>• 1 TTL for connection to Unicard/DeviceManager (via DMI)</li> </ul>	-	<ul style="list-style-type: none"> <li>• screw terminals for connection to power board</li> <li>• JST for connection to ECPlus display</li> </ul>	-
Digital outputs:	1 SPST 2HP max 240V~ 1 SPST + 1 SPDT 1HP max 250V~ 1 SPDT 8(4)A max 250V~ 2 SPST 8(4)A max 250V~ 1 O.C. 12VC 20mA	-	-	-
Analogue outputs:	1 D.A.C. 0...10V - 4...20mA	-	-	-
Accuracy:	better by 1.0%	-	-	-
Resolution:	1 or 0.1°C	-	-	-
Power supply:	SMPS 100...240V ~ ±10% 50/60Hz	from power board	from power board	from power board
Power consumption:	7.5W max	-	-	-
Ambient operating temperature:	-5...+50°C	-5...+55°C	-5...+55°C	-5...+55°C
Ambient storage temperature:	-30...+85°C	-30...+85°C	-30...+85°C	-30...+85°C
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

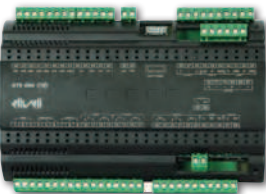
\* selectable by parameter ° selectable by parameter (from power board)

## Wiring diagrams



# RTX600 - KDTPlus

DIN controllers for counters and cold rooms



(A)



KDT



Horizontal KDT

Codes	Descr.
RTX5HBM0S2H00	RTX600
KDT6HB0F17080	KDTPlus STD WHITE 6 BN 30x149 /BUZ /JST MC
KDT6VBWF17080	KDTPlus WHITE 6 BN WHITE 87x135 /BUZ /JST MC

## Applications

**RTX600** (Environmentally Optimised, optimised for the environment) is an electronic device specifically designed for plug-in applications, with thermostatic valve. The RTX600 controller can be interfaced with the KDEPlus, KDWPlus keyboards and the ECPlus display module.

## Features

Relay of up to <b>2HP</b> for direct control of loads.	Rapid synchronisation of remote and island cabinets with <b>Link<sup>2</sup></b> plug-n-play
Removable terminals and customised quick connections	Compatible with NTC, Pt1000, PTC probes
Intelligent defrosting (with clock) to <b>save energy</b> and preserve food better	
Control of heating elements of frames / anti-mist resistances	

Technical data	RTX 600	Horizontal KDT	Vertical KDT
Casing:	PC+ABS resin casing, UL94 V-0	Polymethylmethacrylate (PMMA) front panel	Polymethylmethacrylate (PMMA) front panel
Dimensions:	10 DIN modules	front panel 180x40mm, depth 1.5mm	front panel 87x135mm, depth 1.5mm
Installation:	on DIN Omega bar support	panel mounting, can be set for a distance of up to 100m, with 150x31mm drilling template	panel mounting, can be set for a distance of up to 100m, with 67x120mm drilling template
Display:	-	3 digits+sign, 8 coloured icons colours can selected from: amber/red/blue/white 6 capacitive touch keys	3 digits+sign, 8 coloured icons colours can selected from: amber/red/blue/white 6 capacitive touch keys
Display range:	<ul style="list-style-type: none"><li>• NTC: -50.0°C...+110°C;</li><li>• PTC: -55.0°C...+150°C;</li><li>• Pt1000: -60°C...+150°C</li></ul>		
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 3 D.I.* voltage-free		
Connections:	<ul style="list-style-type: none"><li>• 1 voltage serial for keypad</li><li>• 1 voltage serial for LAN</li><li>• 1 RS-485 for connection to TelevisSystem or Modbus</li><li>• 1 TTL for connection to Unicard/ DeviceManager (via DMI)</li></ul>		
Digital outputs:	1 SPST 2HP max 240V~ 1 SPST + 1 SPDT 1HP max 250V~ 1 SPDT 8(4)A max 250V~ 2 SPST 8(4)A max 250V~ 1 O.C. 12VC 20mA		
Analogue outputs:	1 D.A.C. 0...10V - 4...20mA		
Accuracy:	better by 1.0%		
Resolution:	1 or 0.1°C		
Power supply:	SMPS 100...240V~ ±10% 50/60Hz		
Power consumption:	7.5W max		
Ambient operating temperature:	-5...+50°C		
Ambient storage temperature:	-30...+85°C		
Ambient operation and storage humidity:	10...90% RH (non-condensing)		

\* selectable by parameter ° selectable by parameter (from power board)

## Wiring diagrams



# EEV Pulse SYSTEM

EEV system for retrofit



Codes	Descr.	Details
<b>EVD2A43BSC000</b>	V800/P1	see model table
<b>EVD2A53BSC000</b>	V800/P3	see model table
<b>ID34DR4SCDH00</b>	ID985 /V	see model table
<b>WK1400100N000</b>	IWK /V	see model table
<b>EVK2A43BXC010</b>	Standard kit	see kit table
<b>EVK2A43BXC020</b>	Starter kit	see kit table
<b>DMI100x002000</b>	Device Manage Interface	see accessories table

## Applications

The Electronic Expansion Valve (EEV) is designed to maximise the energy saving and performance potential of refrigerated cabinets in retail applications. The complete Eliwell solution consists of the EEV V800 driver, which can be connected to the IWK/V remote display device, and the ID 985/V electronic controller.

## Features

**Container** PC+ABS UL94 V-0 plastic resin casing

**Operating temperature** -5...55°C

**Storage temperature** -20...85°C

**Ambient operation**

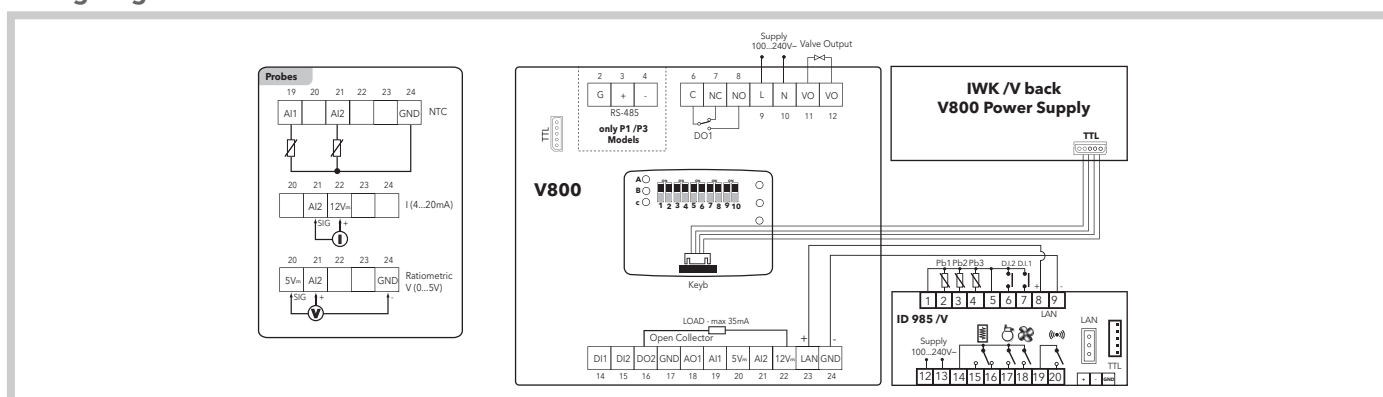
**and storage humidity** 10...90% RH (non-condensing)

## Technical data

	V800	ID 985/V	IWK/V
Dimensions:	front panel 70.2x87mm, depth 61.6mm	front panel 74x32mm, depth 60mm	front panel 74x32mm, depth 30mm
Installation:	on DIN Omega bar support	panel mounting with 71x29mm drilling template	panel mounting with 71x29mm drilling template
Display:	-	no decimal point * 3 and a half digits + sign	no decimal point * 4 and a half digits + sign
Display range:	-	-55...140°C	-55...140°C
Analogue inputs:	1 NTC/4-20mA/0-5V* 1 NTC/4-20mA*	3 NTC/PTC*	-
Digital inputs:	2 voltage free	2 voltage free	-
Connections:	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard and Televis<b>System</b></li> <li>• TTL port for connection to USB Copy Card and IWK/V</li> <li>• LAN port for connection to ID 985/V</li> <li>• RS-485 serial port: <b>Models/P1/P3</b></li> </ul>	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard and Televis<b>System</b></li> <li>-</li> <li>• LAN port for connection to V800</li> <li>• RS-485 serial port</li> </ul>	<ul style="list-style-type: none"> <li>-</li> <li>-</li> <li>• TTL port for connection to V800</li> <li>-</li> <li>-</li> </ul>
Digital outputs:	1 SPDT N.O. 5A 250V~, N.C. 2A 250V~ 1 open collector max current 35mA	1 SPDT 5(2)A 1/4 HP 250V~ 3 SPST 3A 250V~	-
Analogue outputs:	1 0...10V max current 20mA	-	-
Accuracy:	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit	better than 0.5% of integral-scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C	1 or 0.1°C
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	from V800
Power consumption:	3W max	2.5W max	<1W
User interface:	10-way DipSwitch	LED display	LED display

\* (selectable by parameter)

## Wiring diagrams



# EEV Pulse SYSTEM

EEV system for retrofit



Codes	Descr.	Details
EVD2A43BSC000	V800/P1	see model table
EVD2A53BSC000	V800/P3	see model table
ID34DR4SCDH00	ID985 /V	see model table
WK1400100N000	IWK /V	see model table
EVK2A43BXC010	Standard kit	see kit table
EVK2A43BXC020	Starter kit	see kit table
DMI100x002000	Device Manage Interface	see accessories table

## Applications

The Electronic Expansion Valve (EEV) is designed to maximise the energy saving and performance potential of refrigerated cabinets in retail applications. The complete Eliwell solution consists of the EEV V800 driver, which can be connected to the IWK/V remote display device, and the ID 985/V electronic controller.

## Models

Code	Description	Details
EVD2A43BSC000	V800 - P1	230V~ valve control. on-board RS485
EVD2A53BSC000	V800 - P3	230V valve control ∞. on-board RS485
ID34DR4SCDH00	ID985 /V	Electronic controller with V800 driver control via LAN serial port
WK1400100N000	IWK /V	Remote terminal for parameter config., displ. I/O, alarms, etc.

## Kit

Code	Description	Details
EVK2A43BXC010	Standard Kit	Includes: <ul style="list-style-type: none"><li>• 1 x ID 985 /V</li><li>• 1 x V800/P2</li><li>• 1 x "FAST" NTC probe (SN8P0X3002):</li><li>• 1 x ratiometric probe (TD420030)</li></ul>
EVK2A43BXC020	Starter Kit	Includes: <ul style="list-style-type: none"><li>• 1 x ID 985 /V</li><li>• 1 x V800/P2</li><li>• 1 x "FAST" NTC probe (SN8P0X3002):</li><li>• 1 x ratiometric probe (TD420030)</li><li>• 1 USB Copy Card (CCA0BUI02N000)</li><li>• 1 x Device Manager CD (DMP1000002000)</li><li>• 1 x Device Manager Interface - DMI</li></ul>

## Accessories

Code	Description	Details
DMI100x002000	Device Manager Interface	Hardware interface x=1: End User x=2: Service x=3: Manufacturer

## Refrigerant compatibility

R404A - R22 - R410A - R134A - R744 (CO<sub>2</sub>) - R507A - R717 (NH<sub>3</sub>) - R290 - R407a - R448a - R449a - R450a - R513A

## PULSE valve compatibility\*

Model	Brand
PXV	Eliwell manufactured by Castel
AKV10	Danfoss
AKV15	Danfoss
AKV20	Danfoss
AKVA (NH <sub>3</sub> )	Danfoss
EX2	Alco
HP130	Parker
DS1120	Parker

\*if using other valves, contact Eliwell Technical Support

# PXV

## Electronic pulse expansion valve



### Applications

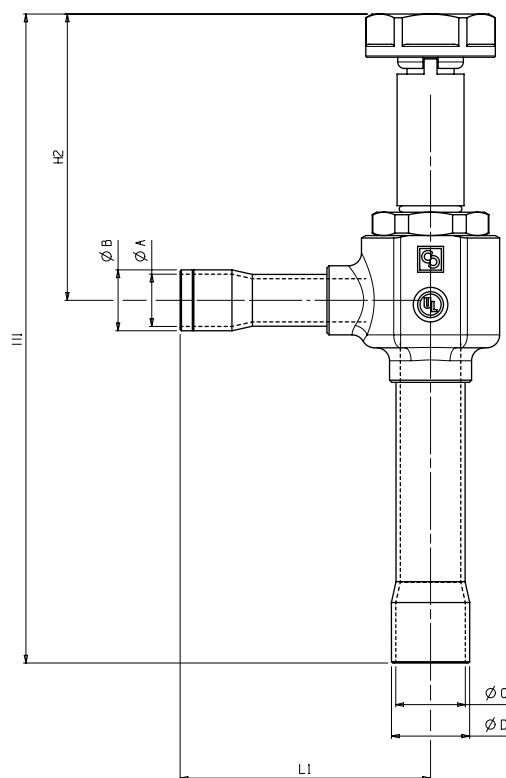
The PXV solenoid operated expansion valve controls the flow of refrigerant to the evaporator by modulating the opening time of the valve element, allowing a wide range of power variation. Highly precise and reliable control of refrigerant flow increases the efficiency of the entire system. There are 9 interchangeable orifices available, with power ratings from 1 kW to 24 kW. This valve must be piloted by a V800 electronic driver. The typical application is in refrigeration systems, especially refrigerated counter displays of the kind used in supermarkets.

### Technical data

#### PXV

Voltage tolerance (V~):	+6/-10%
IEC Enclosure rating:	IP65; IP68
Operating principle:	Pulse Width Modulation
Maximum operating time:	6 seconds
Minimum operating time:	1 second
Capacity (R404A):	15 kW
Adjustment range (capacity range):	10...100%
Braze welded connections:	3/8" - 1/2", 10mm - 12mm, 1/2" - 5/8", 12mm - 16mm
TS temperature:	- 40°C - 100°C
Ambient temperature:	- 40°C - 50°C
Leakage from valve seat:	<1cc/min <0.003 of kv value
Minimum open pressure differential min OPD:	0 bar
Maximum open pressure differential MOPD:	see COILS table - page 53
Maximum operating pressure:	80 bar CO2 models 45 bar other models
Burst Pressure:	250/140 bar
Certifications:	ANNEX BB of IEC60335-2-89
PED:	ART. 4.3 of 2014/68/EU

### Dimensions





# PXV

## Electronic pulse expansion valve



### General specifications and cooling capacities of valves (HFO-HFC-HC refrigerants)

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m3/h)	Cooling capacity (kW)			
			(inches)		(mm)			R134a	R507	R407C	R410A
			IN	OUT	IN	OUT					
PXVN03S010000	1	0.5	3/8"	1/2"	-	-	0.010	0.8	0.8	1.03	1.47
PXVNM10S01000			-	-	10	12					
PXVN03S020000	2	0.7	3/8"	1/2"	-	-	0.017	1.5	1.6	1.9	2.7
PXVNM10S02000			-	-	10	12					
PXVN03S030000	3	0.8	3/8"	1/2"	-	-	0.023	1.8	2.0	2.2	3.4
PXVNM10S03000			-	-	10	12					
PXVN03S040000	4	1.1	3/8"	1/2"	-	-	0.043	2.9	3.0	3.5	5.5
PXVNM10S04000			-	-	10	12					
PXVN03S050000	5	1.3	3/8"	1/2"	-	-	0.065	4.9	5.3	6.2	9.5
PXVNM10S05000			-	-	10	12					
PXVN03S060000	6	1.7	3/8"	1/2"	-	-	0.113	6.8	7.2	8.4	12.9
PXVNM10S06000			-	-	10	12					
PXVN03S070000	7	2.3	3/8"	1/2"	-	-	0.200	10.7	11.6	14.2	20.6
PXVNM10S07000			-	-	10	12					
PXVN04S070000	7	2.3	1/2"	5/8"	-	-	0.200	10.7	11.6	14.2	20.6
PXVNM12S07000			-	-	12	16					
PXVN04S080000	8	2.5	1/2"	5/8"	-	-	0.230	12.9	13.8	16.4	24.5
PXVNM12S08000			-	-	12	16					
PXVN04S090000	9	2.7	1/2"	5/8"	-	-	0.250	14.4	15.4	18.1	27.3
PXVNM12S09000			-	-	12	16					

### General specifications and cooling capacities of valves (HCFC - HFC refrigerants)

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m3/h)	Cooling capacity (kW)	
			(inches)		(mm)			R22	R404A
			IN	OUT	IN	OUT			
PXVB03S010000	1	0.5	3/8"	1/2"	-	-	0.010	0.93	0.77
PXVBM10S01000			-	-	10	12			
PXVB03S020000	2	0.7	3/8"	1/2"	-	-	0.017	1.7	1.6
PXVBM10S02000			-	-	10	12			
PXVB03S030000	3	0.8	3/8"	1/2"	-	-	0.023	2.0	1.9
PXVBM10S03000			-	-	10	12			
PXVB03S040000	4	1.1	3/8"	1/2"	-	-	0.043	3.2	3.0
PXVBM10S04000			-	-	10	12			
PXVB03S050000	5	1.3	3/8"	1/2"	-	-	0.065	5.6	3.2
PXVBM10S05000			-	-	10	12			
PXVB03S060000	6	1.7	3/8"	1/2"	-	-	0.113	7.6	7.1
PXVBM10S06000			-	-	10	12			
PXVB03S070000	7	2.3	3/8"	1/2"	-	-	0.200	12.8	11.4
PXVBM10S07000			-	-	10	12			
PXVB04S070000	7	2.3	1/2"	5/8"	-	-	0.200	12.8	11.4
PXVBM12S07000			-	-	12	16			
PXVB04S080000	8	2.5	1/2"	5/8"	-	-	0.230	14.8	13.7
PXVBM12S08000			-	-	12	16			
PXVB04S090000	9	2.7	1/2"	5/8"	-	-	0.250	16.3	15.2
PXVBM12S09000			-	-	12	16			

Rated cooling capacities refer to: Evaporation temp.  $T_{\text{evap}} = -25^{\circ}\text{C}$  • Condensation temp.  $T_{\text{cond}} = 0^{\circ}\text{C}$  • Temp. of valve input liquid  $T_{\text{liq}} = -4^{\circ}\text{C}$

General specifications and cooling capacities of CO<sub>2</sub> valves (R744)

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m3/h)	Coolong capacity (kW)
			(inches)		(mm)			Refrigerant
			IN	OUT	IN	OUT		R744 (CO <sub>2</sub> )
PXVE03S000000	0	0.3	3/8"	1/2"	-	-	0.003	1.04
PXVEM10S000000			-	-	10	12		
PXVE03S010000	1	0.5	3/8"	1/2"	-	-	0.010	2.6
PXVEM10S010000			-	-	10	12		
PXVE03S020000	2	0.7	3/8"	1/2"	-	-	0.017	4.4
PXVEM10S020000			-	-	10	12		
PXVE03S030000	3	0.8	3/8"	1/2"	-	-	0.023	5.8
PXVEM10S030000			-	-	10	12		
PXVE03S040000	4	1.1	3/8"	1/2"	-	-	0.043	9.1
PXVEM10S040000			-	-	10	12		
PXVE03S050000	5	1.3	3/8"	1/2"	-	-	0.065	15.7
PXVEM10S050000			-	-	10	12		
PXVE03S060000	6	1.7	3/8"	1/2"	-	-	0.113	21..4
PXVEM10S060000			-	-	10	12		
PXVE03S070000	7	2.3	1/2"	5/8"	-	-	0.200	34.3
PXVEM10S070000			-	-	12	16		
PXVE04S070000	7	2.3	1/2"	5/8"	-	-	0.200	34.3
PXVEM12S070000			-	-	12	16		
PXVE04S080000	8	2.5	1/2"	5/8"	-	-	0.230	41.5
PXVEM12S080000			-	-	12	1		
PXVE04S090000	9	2.7	1/2"	5/8"	-	-	0.250	46.3
PXVEM12S090000			-	-	12	16		

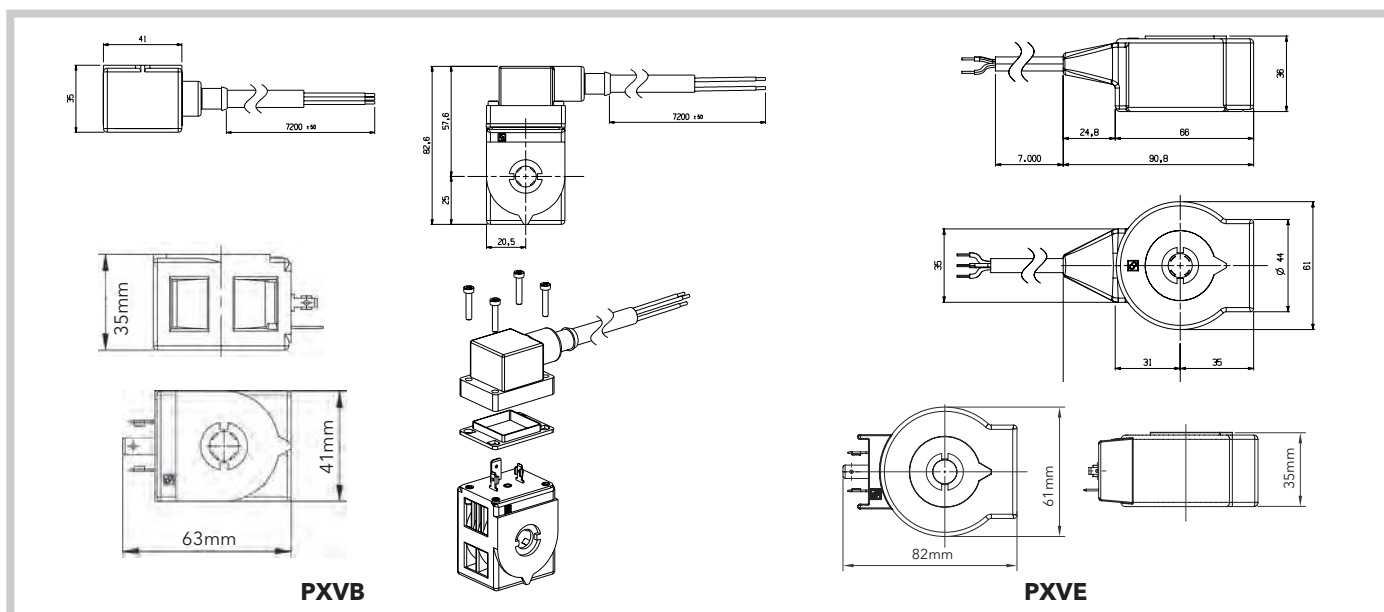
Rated cooling capacities refer to: Evaporation temp. T<sub>evap</sub> = -25°C • Condensation temp. T<sub>cond</sub> = 0°C • Temp. of valve input liquid T<sub>liq</sub> = -4°C

## Coils and connectors

Code	Voltage (Vac)*	voltage tolerance (%)	frequency Hz	power W	insulation class	MOPD (bar)		electrical connections
						orifice	orifice	
						0 - 4	5 - 9	
PXVB0ARA60000	220 / 230	+6 / -10	50/60	8	F	35	22	IP65 connector: PXVB0AR020000
PXVB0ARA6A072	220 / 230	+6 / -10	50/60	8	F	35	22	IP68 connector: PXVB0AR030000
PXVE0ARA60000	220 / 230	+6 / -10	50/60	12	F	>45	>45	cable & connector 7,2 mt assembled
PXVE0ARA6M070	220 / 230	+6 / -10	50/60	12	F	>45	>45	IP65 connector: PXVB0AR020000
								moulded style with 7.0 mt cable

\* contact sales dept. for other power supply

## Coil and connector - dimensions



# RTX 600 /VS DOMINO

DIN controllers for remote systems with Stepper EEV



## Applications

The RTX600 /VS DOMINO is an electronic device for controlling remote counters and cold rooms, with Stepper type electronic expansion valve that can be used singly or together in islands or remote counters with more evaporators. The innovative DOMINO adaptive control algorithm can work with overheating values of 4 K with R744 and less than 3 K for HFC and HFO, increasing the level of system efficiency simply by increasing the suction pressure. The RTX600/Vs DOMINO controllers can be interfaced with the KDEPlus keyboard, the ECPlus display module and the new KDTPlus keyboards with touch technology.

## Features

Adaptive overheating control for values below 3 K  
Valve control configuration with only 2 parameters  
Single model for Eliwell SXVB valves and third parties

Code	Descr.
<b>EWKRTS0300000</b>	RTX 600 /VS DOMINO + POWER-PACK KIT KDEPlus
<b>RTSNOBM053H00</b>	RTX 600 /VS DOMINO POWER-PACK
<b>EWKRTS0400000</b>	RTX 600 /VS DOMINO KIT KDEPlus
<b>RTSNOBM052H00</b>	RTX 600 /VS DOMINO
<b>KS0000S1</b>	VS POWER-PACK
<b>KDE400E004000</b>	KDEPlus
<b>EH000050V4000</b>	ECPlus
<b>TF111205</b>	TF TRANSF 230/24 35VA PROT. DIN

Smart defrost control designed to save energy and ensure better preservation of food  
Control of heating elements of frames / anti-mist resistances  
Fast synchronisation of remote counters and cold islands

Technical data	RTX 600 /VS DOMINO	KDEPlus	ECPlus
Dimensions:	10 DIN modules	front panel 74x32 mm, depth 30 mm	front panel 48x28.6 mm - depth 15 mm
Installation:	on DIN Omega bar support	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	-	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:	• NTC: -50.0°C...+110°C; • PTC: -55.0°C...+150°C; • Pt1000: -60°C...+150°C	see power board	see power board
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 1 4...20mA/D.I.* 1 ratiometric/D.I.* + 1 voltage-free D.I.	-	-
Connections:	• 1 RS-485 serial isolated for monitoring • 1 keyboard serial • 1 serial per local Link <sup>2</sup> on-site • 1 TTL for Unicard/Copycard connection	-	-
Digital outputs:	• 3 16(8) A - 250 Vac relays • 2 8(4) A - 250 Vac relays 1 Open Collector output (12 Vdc - 20 mA)	-	-
Analogue outputs:	1 D.A.C. multifunction: 0...10V - 4...20mA	-	-
Valve driver output:	• 4 way connector for bipolar command	-	-
Auxiliary power supply	• Auxiliary input for 24Vac 35VA max driver valve	-	-
Accuracy:	better by 1.0%	-	-
Resolution:	1 or 0.1°C	-	-
Power supply:	SMPS 100...240V ~ ±10% 50/60Hz	from power board	from power board
Power consumption:	12.5W max	-	-
Ambient operating temperature:	-5...+50°C	-5...+55°C	-5...+55°C
Ambient storage temperature:	-30...+85°C	-30...+85°C	-30...+85°C
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

## Power-Pack

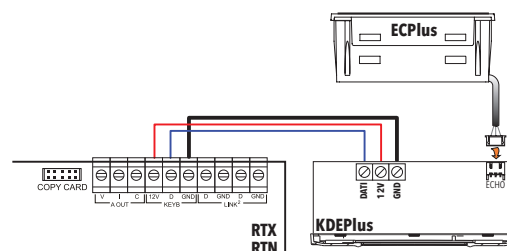
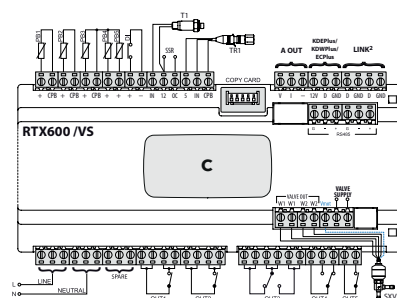
Sliding assembly in the RTX 600 /VS front compartment

Power supply from power board

Ambient operating temperature: -5...+50°C

Ambient storage temperature: -30...+85°C

Ambient operation and storage humidity: 10...90% RH (non-condensing)



# EEV Stepper system

## EEV stepper system



Codes	Descr.
<b>XVD420H485000</b>	XVD 420H RS-485
<b>SKP1000000000</b>	SKP10 Configuration Keyboard
<b>DMI100x002000*</b>	Device Manager Interface (Hardware interface)
<b>TF111205</b>	Transformer 230V~/24V~ 35VA

\*x=1: End User; x=2: Service; x=3: Manufacturer

## Applications

The driver for the proportional motorised valve XVD is designed to optimize energy efficiency and the refrigerated utilities performance. Its wide compatibility with refrigerants and with the valves on the market, whether unipolar or bipolar, makes this product particularly flexible. In addition, the availability of the service keyboard SKP10 and of the USB interface allows easy and fast set-up of the system.

## Features

<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing	<b>Ambient operation and storage humidity</b>	10...90% RH (non-condensing)
<b>Usage time</b>	-5...+55°C		
<b>Storage temperature</b>	-20...+85°C		

## Technical data

	XVD 420H 485	SKP10
Dimensions:	70.2x87 mm frontal panel, depth 61.6 mm	front panel 74x32mm, depth 60mm
Installation:	on DIN Omega bar support	panel mounting (71x29mm drilling template)
Display:	-	3 and a half digits + sign
Display range:	-	-55...140°C
Analogue inputs:	2x NTC/Pt1000/4...20mA/0-5V~/0-10V~/* 2x NTC/Pt1000	-
Digital inputs:	2 voltage free	-
Connections:	<ul style="list-style-type: none"> <li>TTL (Keyb) for connection to Unicard/MFK/DMI</li> <li>TTL for Televis/Modbus connection</li> <li>RS485 for connection Televis/Modbus</li> </ul>	<ul style="list-style-type: none"> <li>Lan port for connection to XVD</li> </ul>
Digital outputs:	1 SPST: N.O. 5A 250V~ 1 Open Collector 12V~/max 100mA	-
Accuracy:	better than 0.5% of end of scale	better than 0.5% of end of scale
Resolution:	0.1°C	1 or 0.1°C
Power supply:	24V~/±10% 50/60 Hz	100...240V~ ±10% 50/60Hz
Power consumption:	30VA / 25W	<1W
Interface:	-	LED display

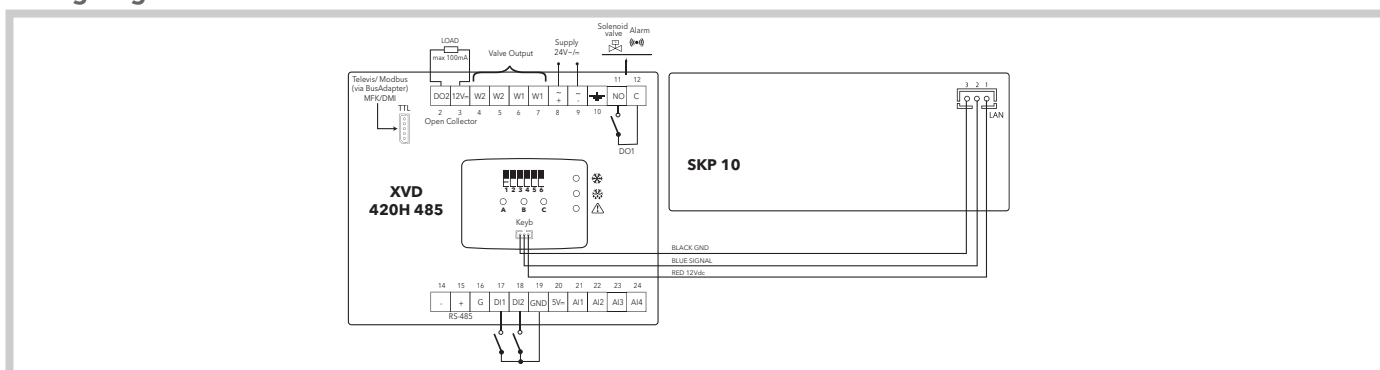
\* selectable by parameter

## STEPPER valve compatibility\*

Models	Brand
SXVB 24V Bipolar	Eliwell
ETS50 12V Bipolar, ETS100 12V Bipolar	Danfoss
EX5 24V Bipolar, EX6 24V Bipolar, EX7 24V Bipolar, EX8 24V Bipolar	Alco
SER(I) G, J, K, B, C, D 12V Bipolar	Sporlan
SER 1.5 TO 20 12V Bipolar	Sporlan
SEI-30 12V Bipolar, SEI-50 12V Bipolar	Sporlan
SEH 12V Only bipolar model	Sporlan

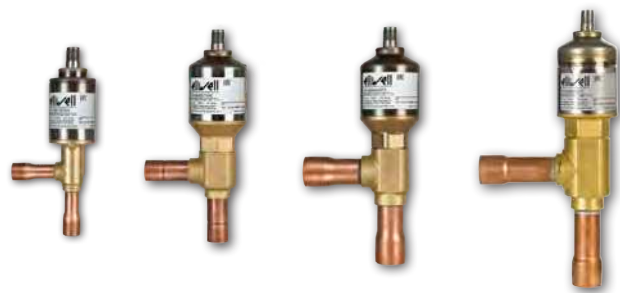
\*if using other valves, contact Eliwell Technical Support

## Wiring diagrams



# SXVB

## Bipolar “stepper” expansion valve

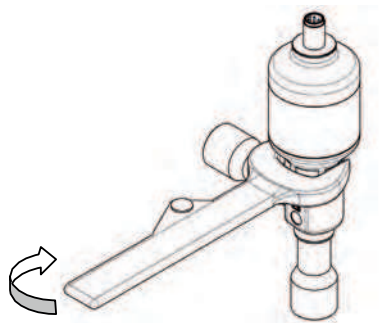


### Applications

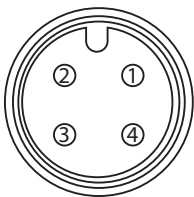
The bipolar expansion valve series SXVB regulates the flow of refrigerant to the evaporator by proportionally modulating its opening and closing, allowing a wide range of power variation. Highly precise and reliable control of refrigerant flow increases the efficiency of the entire system. There are four valve bodies and ten orifices to meet power ratings ranging from 10kW (R404) to 257 kW (R410).

Technical data	BODY1	BODY2	BODY3	BODY4
Actuator type	bipolar stepper motor			
Control	full step			
Stroke\steps for complete closure	10.5mm \ 415 steps	8.2mm \ 197 steps	8.2mm \ 197 steps	12.5mm \ 985 steps
Rated power	from 4 to 260kW (R410A)			
Rated power operating conditions	evap. +5°C, cond. +38°C subcooling 0 K, overheating 0 K			
Adjustment range	10...95%			
Refrigerants	HFC, HFO, (contact sales office for use with R744 and HC)			
MOPD [bar]	35	40	35	30
Maximum operating pressure [bar]	45			
TS temperature	-40 / +105			
Protection	IP67			
Driver	Eliwell XVD, Eliwell V900, Eliwell V910, Eliwell RTX /VS (body1 and body2)			
Connections and geometry	braze welded tube, angled			
Operation	bidirectional			
Sight glass	not available			
Certifications	CE			
Possible operating angles	360°			
Motor	integral	inspectable		removable and replaceable
Step angle	7.5°	15°		7.5°
Step	0.0127mm	0.042mm		0.0127mm
Nominal speed [step/s]	35	20		70
Contact current	100% duty cycle			
No. of cycles tested between 10% and 100%	~5 million cycles			
Over-run steps	100	60	60	150
Rated voltage	24V			
Rated phase current	200(350 peak)mA	200(300 peak)mA		560mA
Connector	4-way M12 4G3m std (6m and 15m also available)			

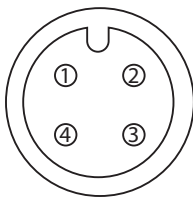
### Tightening torque - Connector



➔Min = 31.5 Nm  
➔Max = 35 Nm



Connector valve



Connector Cable

- 1 Brown
- 2 White
- 3 Blue
- 4 Black

# SXVB

Bipolar "stepper" expansion valve



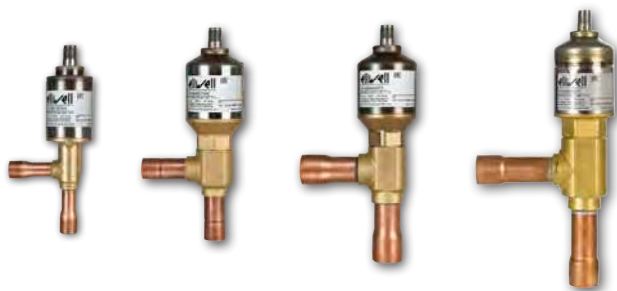
## General specifications and cooling capacities of valves

Code	Body	Orifice hole (mm)	ODS connections	Analogue	MOPD	Rated cooling capacity (kW)				
						R134a	R407C	R404A	R507A	R410A
SXVB261150030	1	1.5	3/8"	→ Radial	35	13.2	13.6	10.7	10.7	17.5
				↑ Axial		12.6	12.6	10.2	9.7	16.5
SXVB261150040			1/2"	→ Radial		13.2	13.6	10.7	10.7	17.5
				↑ Axial		12.6	12.6	10.2	9.7	16.5
SXVB26115M100			10mm	→ Radial		13.2	13.6	10.7	10.7	17.5
				↑ Axial		12.6	12.6	10.2	9.7	16.5
SXVB26115M120			12mm	→ Radial		13.2	13.6	10.7	10.7	17.5
				↑ Axial		12.6	12.6	10.2	9.7	16.5
SXVB261200030		2.0	3/8"	→ Radial		19.4	21.3	16.5	16.5	27.2
				↑ Axial		18.4	19.4	15.0	14.6	24.7
SXVB261200040			1/2"	→ Radial		19.4	21.3	16.5	16.5	27.2
				↑ Axial		18.4	19.4	15.0	14.6	24.7
SXVB26120M100			10mm	→ Radial		19.4	21.3	16.5	16.5	27.2
				↑ Axial		18.4	19.4	15.0	14.6	24.7
SXVB26120M120			12mm	→ Radial		19.4	21.3	16.5	16.5	27.2
				↑ Axial		18.4	19.4	15.0	14.6	24.7
SXVB261270030		2.7	3/8"	→ Radial		24.7	27.2	21.3	21.3	34.4
				↑ Axial		23.3	24.7	19.4	18.4	31.0
SXVB261270040			1/2"	→ Radial		24.7	27.2	21.3	21.3	34.4
				↑ Axial		23.3	24.7	19.4	18.4	31.0
SXVB26127M100			10mm	→ Radial		24.7	27.2	21.3	21.3	34.4
				↑ Axial		23.3	24.7	19.4	18.4	31.0
SXVB26127M120			12mm	→ Radial		24.7	27.2	21.3	21.3	34.4
				↑ Axial		23.3	24.7	19.4	18.4	31.0
SXVB262270040	2	2.7	1/2"	↑ Axial	40	27.2	36.9	26.0	25.8	44.6
				→ Radial		23.3	35.9	24.1	24.6	42.7
SXVB262270050			5/8"	↑ Axial		27.2	36.9	26.0	25.8	44.6
				→ Radial		23.3	35.9	24.1	24.6	42.7
SXVB262270070			7/8"	↑ Axial		27.2	36.9	26.0	25.8	44.6
				→ Radial		23.3	35.9	24.1	24.6	42.7
SXVB26227M120			12mm	↑ Axial		27.2	36.9	26.0	25.8	44.6
				→ Radial		23.3	35.9	24.1	24.6	42.7
SXVB262320040		3.2	1/2"	↑ Axial		34.0	50.4	35.5	34.8	60.1
				→ Radial		32.0	47.5	33.5	32.7	56.3
SXVB262320050			5/8"	↑ Axial		34.0	50.4	35.5	34.8	60.1
				→ Radial		32.0	47.5	33.5	32.7	56.3
SXVB262320070			7/8"	↑ Axial		34.0	50.4	35.5	34.8	60.1
				→ Radial		32.0	47.5	33.5	32.7	56.3
SXVB26232M120			12mm	↑ Axial		34.0	50.4	35.5	34.8	60.1
				→ Radial		32.0	47.5	33.5	32.7	56.3
SXVB263360070	3	3.6	7/8"	↑ Axial	35	48.5	70.3	49.5	49.5	84.2
				→ Radial		36.6	66.3	46.3	46.1	78.2
SXVB263360090			1 1/8"	↑ Axial		48.5	70.3	49.5	49.5	84.2
				→ Radial		36.6	66.3	46.3	46.1	78.2
SXVB263400070		4.0	7/8"	↑ Axial	35	58.4	85.1	59.5	58.8	102.0
				→ Radial	30	45.5	80.2	55.4	54.7	95.0
SXVB263400090			1 1/8"	↑ Axial	35	58.4	85.1	59.5	58.8	102.0
				→ Radial	30	45.5	80.2	55.4	54.7	95.0
SXVB263440070		4.4	7/8"	↑ Axial	35	71.3	103.0	72.3	72.0	122.8
				→ Radial	25	54.5	96.0	67.3	66.5	113.9
SXVB263440090			1 1/8"	↑ Axial	35	71.3	103.0	72.3	72.0	122.8
				→ Radial	25	54.5	96.0	67.3	66.5	113.9



# SXVB

## Bipolar "stepper" expansion valve



### General specifications and cooling capacities of valves

Code	Body	Orifice hole (mm)	ODS connections	Analogue	MOPD	Rated cooling capacity (kW)				
						R134a	R407C	R404A	R507A	R410A
SXVB264560070	4	5.6	7/8"	→ Radial	30	104.0	131.2	102.0	101.0	166.3
				↑ Axial		104.0	131.2	102.0	101.0	166.3
SXVB264560090			1 1/8"	→ Radial		104.0	131.2	102.0	101.0	166.3
				↑ Axial		104.0	131.2	102.0	101.0	166.3
SXVB264560110			1 3/8"	→ Radial		104.0	131.2	102.0	101.0	166.3
				↑ Axial		104.0	131.2	102.0	101.0	166.3
SXVB26456M280			28mm	→ Radial		104.0	131.2	102.0	101.0	166.3
				↑ Axial		104.0	131.2	102.0	101.0	166.3
SXVB264650070		6.5	7/8"	→ Radial		132.7	167.3	129.7	127.7	211.9
				↑ Axial		132.7	167.3	129.7	127.7	211.9
SXVB264650090			1 1/8"	→ Radial		132.7	167.3	129.7	127.7	211.9
				↑ Axial		132.7	167.3	129.7	127.7	211.9
SXVB264650110			1 3/8"	→ Radial		132.7	167.3	129.7	127.7	211.9
				↑ Axial		132.7	167.3	129.7	127.7	211.9
SXVB26465M280			28mm	→ Radial		132.7	167.3	129.7	127.7	211.9
				↑ Axial		132.7	167.3	129.7	127.7	211.9
SXVB264750070		7.5	7/8"	→ Radial		159.4	203.0	156.4	155.4	257.4
				↑ Axial		159.4	203.0	156.4	155.4	257.4
SXVB264750090			1 1/8"	→ Radial		159.4	203.0	156.4	155.4	257.4
				↑ Axial		159.4	203.0	156.4	155.4	257.4
SXVB264750110			1 3/8"	→ Radial		159.4	203.0	156.4	155.4	257.4
				↑ Axial		159.4	203.0	156.4	155.4	257.4
SXVB26475M280			28mm	→ Radial		159.4	203.0	156.4	155.4	257.4
				↑ Axial		159.4	203.0	156.4	155.4	257.4

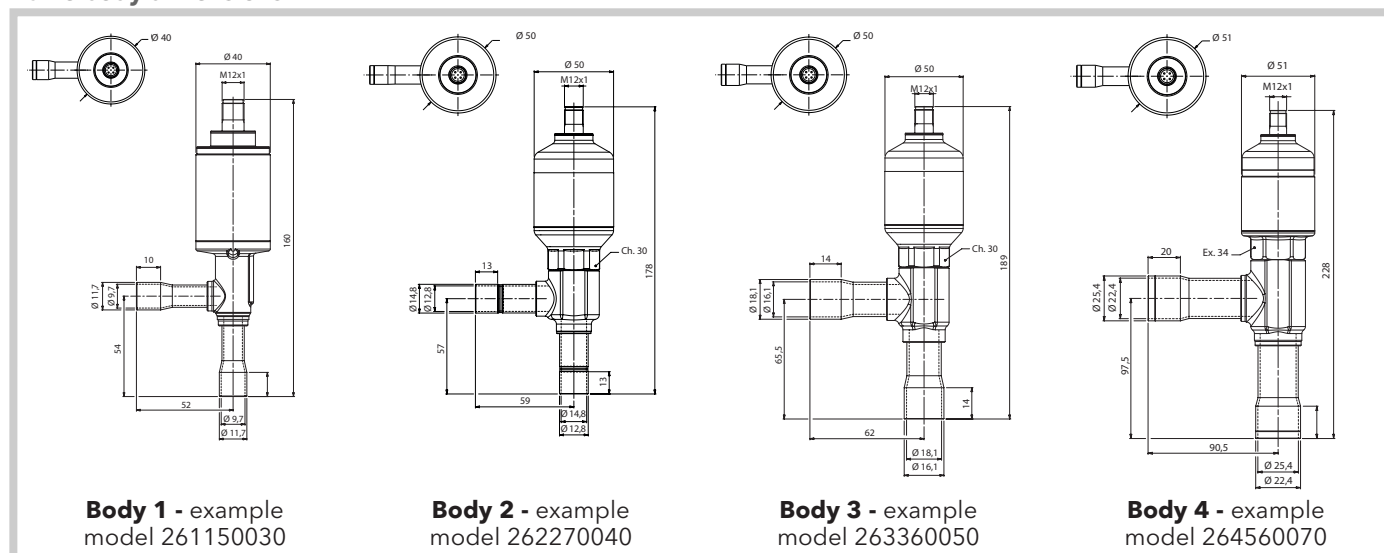
\*Rated cooling capacities refer to:

Evaporation temp.  $T_{\text{evap}} = +5^{\circ}\text{C}$  • Condensation temp.  $T_{\text{cond}} = +38^{\circ}\text{C}$  • Sub-cooling  $0^{\circ}\text{K}$  • Overheating  $0^{\circ}\text{K}$

### Cable

Code	Description
SXVB2624VC300	3m cable
SXVB2624VC015	15m cable

### Valve body dimensions



# TelevisGo

Monitoring and maintenance systems via web



Codes	Descr.	Applications
<b>TGOCSE101E00K</b>	KIT TelevisGo SSD 10*	up to 10 controllers
<b>TGOCSE301E00K</b>	KIT TelevisGo SSD 30*	up to 30 controllers
<b>TGOCSE601E00K</b>	KIT TelevisGo SSD 60*	up to 60 controllers
<b>TGOCSE2H1E00K</b>	KIT TelevisGo SSD 224*	up to 224 controllers

\*contains No.1 SerialAdapter + 1.5m serial cable

Codes	Descr.	Applications
<b>TGOCSE101ER0K</b>	KIT TelevisGo SSD LE 10*	up to 10 controllers
<b>TGOCSE301ER0K</b>	KIT TelevisGo SSD LE 30*	up to 30 controllers
<b>TGOCSE601ER0K</b>	KIT TelevisGo SSD LE 60*	up to 60 controllers

LE versions do not include the Algorithms function

\*contains No.1 SerialAdapter + 1.5m serial cable

## Applications

TelevisGo is a family of devices to monitor, control and manage installations from a distance.

The product is based on a PC Embedded standard platform to offer calculation power, data filing space with solid state disc (SSD) and easy system expansion using standard peripherals available on the market.

The Off-Line Configuration function is used for even faster installation and the repetition of settings on other plants.



### Data recording and alarm management

- Recording temperature / pressure / humidity / digital inputs and outputs / functional statuses
- Recording alarm conditions and sending a signal by email and SMS



### Energy reports

- Connection to energy meters with MODBUS protocol
- Dashboards dedicated to the real time and historic display of energy consumption
- Graphic display of energy consumption combined with the functional parameters of the system



### Graphic display of the system

- Display and access to data and parameters of the controllers by means of a freely configurable graphic interface
- HTML interface accessible by most browsers for PC, tablet and smartphone (Internet Explorer, Mozilla, Firefox)
- The graphic interface can be planned off-line with the tools freely available for download from the site [www.eliwell.com](http://www.eliwell.com)



### Web connectivity

- All TelevisGo functions are accessible in remote mode with a web browser
- It is possible to access all the historic and real time information and to interact with each controller connected to the system to change its parameters and activate the functions
- The complete management of TelevisGo is included (configuration, updating, restarting of the device)
- TelevisGo can be connected to the Internet with ADSL, 3G or 4G connections, or by configuring the LAN/WAN network to which the device is connected



### Activity automation

- Automation of recurrent activities such as switching the lights on and off for energy saving
- Periodic sending by e-mail of detailed reports in PDF format
- Periodic transfer of data to centralised systems for performance analysis



### Algorithms and Expandability with IEC 61131\*

- System extensions with new Plug & Play algorithms installable from the web interface
- Algorithms for management of floating evaporation, faulty pressure probe backup and distribution of the dewpoint for energy saving functions with RTX600 /V and EWCW 9000 EO
- System for the development of new algorithms for distributed management of the installation based on FREE Studio with standard languages IEC 61131

\*functions not available in LE versions

# TelevisGo

Monitoring and maintenance systems via web



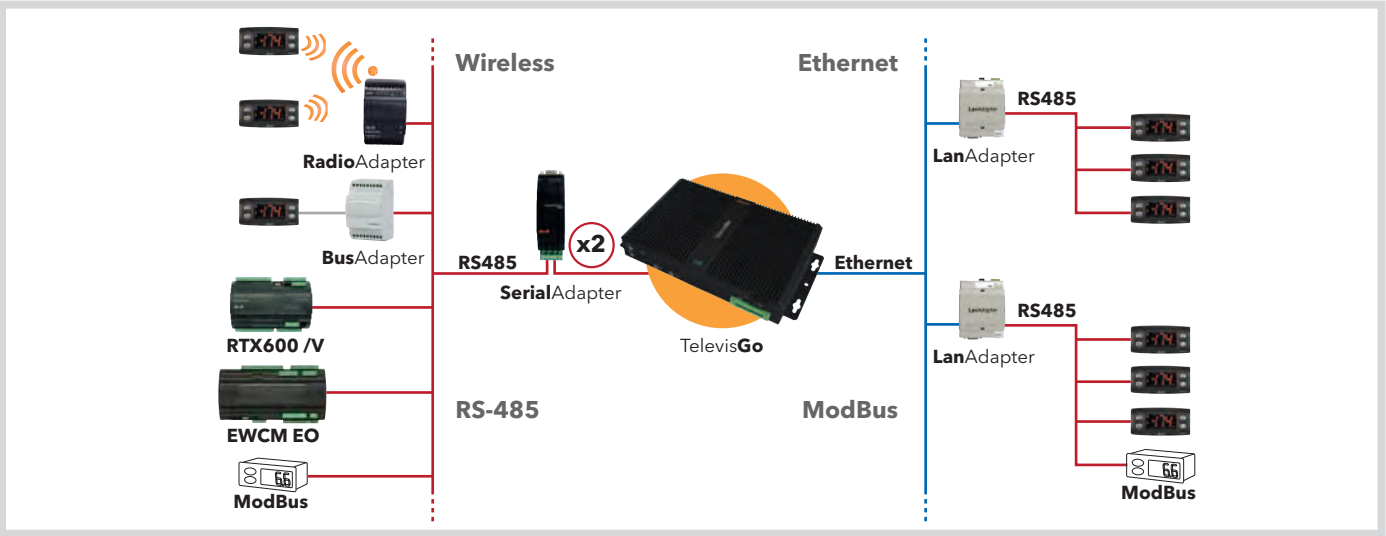
## Features

<b>For the end user</b>	<ul style="list-style-type: none"><li>• recording of HACCP temperatures</li><li>• information on energy consumption</li><li>• complete, easy to use system</li><li>• open, expandable system</li></ul>	<b>For supermarket chains and system integrators</b>	<ul style="list-style-type: none"><li>• solution can be scaled to suit the size of the installation</li><li>• instruments for off line configuration, plant cloning and configuration modification in series</li><li>• compatibility with third-party Modbus devices: energy measurement and HVAC controls</li><li>• XML protocol open:<ul style="list-style-type: none"><li>- data sent periodically (push function)</li><li>- transmission of data and alarms as they occur</li><li>- real-time data acquisition</li><li>- querying of data and alarm history</li><li>- execution of commands / modification of controller parameters in remote mode</li><li>- SOCKS protocol integrated for routing of TCP and UDP communications</li></ul></li></ul>
<b>For the maintenance technician</b>	<ul style="list-style-type: none"><li>• compact, reliable, ready-to-use system</li><li>• intuitive user interface easy to learn</li><li>• alarm signalled by e-mail, SMS and configurable priorities</li><li>• distance access via web for diagnostics and control</li><li>• dedicated maintenance tools: parameters instruments, controls, detailed diagnostics and recording of all operational status</li><li>• system fully updatable via web: software, languages, driver controllers</li><li>• instruments for off line configuration and fast modification of settings</li></ul>		

## Technical Data

	TelevisGo 10 / 30 / 60 / 224
User interface:	from web browser
Browsers supported:	<ul style="list-style-type: none"><li>• Internet Explorer 7 or later</li><li>• Mozilla Firefox 3.5 or later</li><li>• Google Chrome 16.0.x or later</li></ul>
User language interfaces pre-loaded:	IT - EN - FR - DE - ES - PT - PL - NL - RU - CN
Operating System:	MS Windows 7 Embedded
Power supply:	12V $\overline{\text{m}}$ with external power supply 100...240V $\sim$ $\pm$ 10%
Power consumption:	10W max
Connections:	4 USB ports 2 RS-232 ports (for analogue modem or GSM) 2 RS-232 ports (for <b>SerialAdapter</b> ) 1 Ethernet port (LANRJ45) VGA monitor connection PS2 keyboard connector

## Connectivity



# TelevisBlue

## Cloud Solution for Installations Monitoring



Codes	Descr.	Notes
<b>TBR2S**1E0000</b>	TelevisBlue Starter 1Y 2G	12 months of service included. Monitoring, Reports and Alarms and Centralised data access
<b>TBR2P**1E0000</b>	TelevisBlue Plus 1Y 2G	12 months of service included. Monitoring, Reports and Alarms, Centralised data access and Re- mote controller maintenance*
<b>SAMANT3B30300</b>	ANTENNA 3B 3m CABLE MCX90/M	Optional external antenna
<b>TBR2X0000GW00</b>	TelevisGate 2G	Only replacement device

\*\* The two digits indicate the maximum number of resources managed: 01=5; 05=25; 10=50; 30=150; 50=250; 1H=500 resources

### Applications

#### The first cloud-based Plug & Play monitoring service for refrigeration

TelevisBlue is the innovative monitoring system based entirely on cloud dedicated to small and medium sized plants using their own protected M2M mobile data connection to transfer information between the plant and the cloud without the need for any configuration by the user.

TelevisBlue offers the power of cloud data collection service, accessible via the web, with simple, speedy installation via a pre-activated kit.

#### Smartphone managed plant maintenance

TelevisBlue and the new Plus option are used to work in real time on plants activating functions or editing the parameters of the controllers connected to the system\*\*.

#### Annual service renewal

TelevisBlue includes 12 months of services from initial switch-on for basic functions and the activated options, and can be renewed annually also using the self-service mode with Credit Card\*.

#### System and features always up to date

No application to download or update is required. Simply log into the [www.televisblue.com](http://www.televisblue.com) site to use its functions. Eliwell takes care software updates, new feature releases, and updates to the online manual.

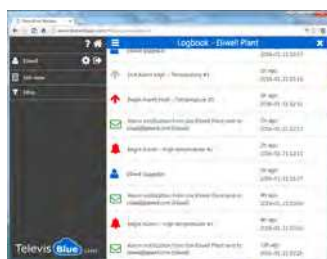
\* service available in a limited number of Countries. See on-line manual for the updated list

\*\* The Plus option offers a maximum of 1000 operations for systems up to 25 resources and 5000 operations for systems up to 500 resources.



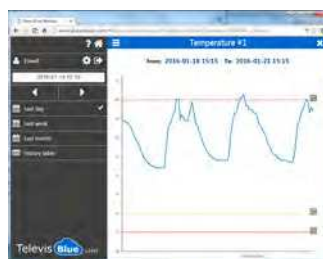
#### Remote maintenance, accessible anytime, anywhere

Activate a defrost or modify the temperature set of a controller after a notification, just a click away from the main view of any plant.



#### Food quality constantly under control

The system constantly monitors temperatures and other data and notifies users when alert thresholds are exceeded. Alert thresholds can be easily set up via the web portal. TelevisBlue also offers immediate notification of all alarms detected by controllers in the field for speedy intervention in case of anomalies.



#### Information easily accessible, anytime and anywhere

TelevisBlue collects temperature and other operating data from equipment and stores it in the cloud, making them easily accessible with a web browser from your smartphone, tablet, or PC.



#### Information Sharing and Collaboration

Centralized installations management allows owners and maintenance personnel to share information, meaning you can quickly modify the assignment directly from the TelevisBlue portal. The Reports function also enables periodic reports to be automatically sent to email recipients, keeping an archive of documents sent.



#### On-line documentation:

[www.televisblue.com/help](http://www.televisblue.com/help)

to be constantly up to date with new available functions.

# TelevisBlue

## Cloud Solution for Installations Monitoring

Technical data	TelevisGate 2G
Dimensions (WxHxD)	128 x 227 x 50 mm
Installation	Wall or panel
Power supply	100-240Vac
Connectivity	GSM/GPRS modem 850/900/1800/1900 MHz with built-in antenna
Field bus	Isolated RS-485
Memory	Buffer memory for 12 hours of data
Device status display	3 status LEDs
Alarm signalling	SPDT 8A relay 30Vac-dc 30V max for communication status 1 status LED SPDT 8A relay 30Vac-dc 30V max

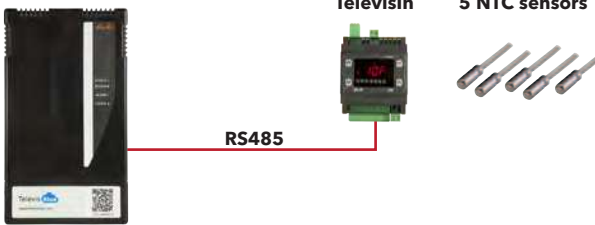
	TelevisBlue Starter License
Maximum No. of resources	from 5 to 500 monitorable resources according to model
Length of service	12 months of connectivity and data recording service
Recording interval	Configurable from 5 minutes to 1 day
Cloud synchronization interval	Configurable from 15 minutes to 1 day
Operations on controllers	Plus Option: reading/writing of parameters and commands Maximum 1000 operations per license up to 25 resources, 5000 for higher licenses
Data display	From the HTML5 website <a href="http://www.televisblue.com">www.televisblue.com</a> . <ul style="list-style-type: none"><li>Time line of system events</li><li>Data history for resources in table and graph format</li></ul>
Managing alarms	2 predefined alarm categories Thresholds configurable on the cloud for all registered resources Mode for immediate notification when instrument alarms go off
Alarm notifications	Via e-mail, multiple recipients for each category
PDF report sent	Standard reports. HACCP report in PDF, data export via e-mail. configurable on a daily, weekly or monthly basis
Systems centralization	Access page with summary statement for all managed systems
Users and security	Administration of access proxies for each system

**CAUTION:** the use of the TelevisBlue product and service is subject to acceptance of the terms of service posted on the site [www.televisblue.com/terms](http://www.televisblue.com/terms).  
For more information on system characteristics, countries where the service is available, and connectible controllers, see the online manual and appendices at [www.televisblue.com/help](http://www.televisblue.com/help).

### Application examples

#### Wireless temperature monitoring

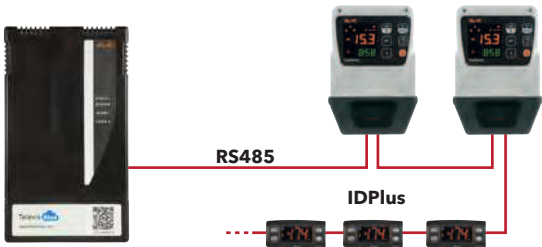
**TelevisBlue Starter 025-1Y 2G**



- HACCP recordings of up to 25 temperatures for 12 months at 15 minute intervals
- Temperature settings can be configured via website
- Notification of maintenance personnel when threshold is exceeded
- HACCP report in PDF format sent daily to owner

#### Monitoring/maintenance for a chain of restaurants

**TelevisBlue Plus 025-1Y 2G**



- Centralized access to data of all restaurants with a single log-in
- Data recordings for 12 months at 5 minute intervals:
- Signalling of alarms for all connected controllers
- Controller maintenance via web and smartphone
- HACCP report in PDF format sent daily to owner
- Detailed report in PDF format sent weekly to maintenance personnel

# EWSense

Wireless system for temperature measuring



Codes	Descr.	Notes
<b>ESG0010700</b>	EWSense Gate ZBRN12	ZigBee receiver with RS-485 Modbus/RTU serial port
<b>ESARJC200</b>	EWSense 2 x RJ45 serial cable 1m	Kit with 2 cables with RJ45 connector for RS-485 serial connection
<b>ESST010B00</b>	EWSense Temp	ZigBee Green Power wireless temperature sensor
<b>ESST010B0400</b>	4 x EWSense Temp	Kit of 4 EWSense Temp sensors
<b>ESAMPL000</b>	EWSense Metal Plate KIT x4	Kit for panel fixing with metal plates for 4 EWSense Temp
<b>ESATIE000</b>	EWSense 100 Ties KIT	Fixing kit with clamps for EWSense Temp (100 clamps 180 x 4.8 mm)

## Applications

EWSense is a wireless system for measuring the temperature of food storage and processing equipment and rooms. The wireless and battery-operated sensors make the system extremely easy to install; they can also be replaced, avoiding the need to periodically re-calibrate the system.

The EWSense Temp sensor is made from plastic, suited to food-grade environments with protection rating IP65 and measures the ambient temperature where it is installed between -30°C and +55°C for over 2 years, thanks to the integrated battery and the ZigBee 3.0 Green Power wireless communication.

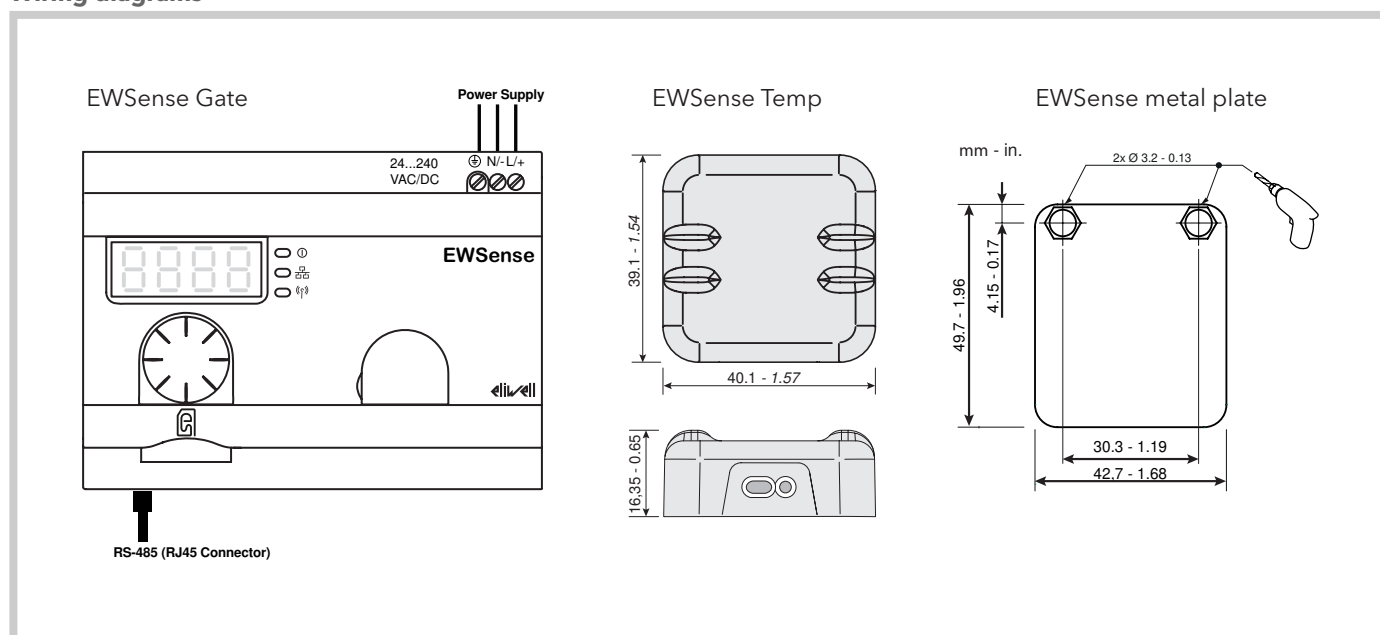
The EWSense Gate receiver manages up to 60 sensors positioned in a radius of 100m in free field, indicatively 10 metres in standard installations. The RS-485 Modbus/RTU line allows monitoring systems to acquire temperature data, signal level and battery level, for full system diagnostics.

## Common features

Low-consumption ZigBee Green Power wireless communication	Temperature measurement from -30°C to +55°C
Up to 60 EWSense Temp sensors for each EWSense Gate receiver	Compatible with third-party Televis and Modbus/RTU systems.

Technical data	EWSense Gate	EWSense Temp
Dimensions (mm)	121 x 89 x 69.6 (LxHxD)	40.1 x 39.1 x 16.4 (LxHxD)
Installation	on DIN Omega bar support	Gluing on flat surface with double sided tape (supplied)
Power supply	24V...240Vac/dc	Integrated battery, not replaceable. Duration more than 2 years of operation.
Connectivity	RS-485 for connection to TelevisSystem monitoring and systems based on ModBus protocol ZigBee 3.0 receiver	ZigBee 3.0 Green Power Standard IEEE 802.15.4 transmitter Frequency: 2,405 GHz Distance: 100m (in free field)
Protection rating	---	IP 65
Measurement range	---	-30°C ... +55°C
Measurement accuracy	---	±1°C

## Wiring diagrams





# TelevisIn / TelevisOut

Data acquisition modules and actuators



Codes	Descr.	Power supply
<b>TAMID152RS700</b>	TelevisIn	100...240V~
<b>TAMOD602RS700</b>	TelevisOut	100...240V~

## Applications

TelevisIn and TelevisOut are data acquisition, alarm signalling and user control modules which can be connected to Televis systems or third-party systems, thanks to the ModBus protocol that can be selected from the relevant parameter. The TelevisIn controller, connected to specific probes, enables the acquisition of temperature, humidity and pressure data, and digital signals. It will also calculate dew points. TelevisOut provides alarm signalling and utility monitoring functions. It can be used to connect warning devices or telephone diallers and, in combination with the supervisor, to deliver energy savings, managing lights and other utilities.

## Common features

Compatible with third-party and ModBus systems

**Two models** to cover all applications

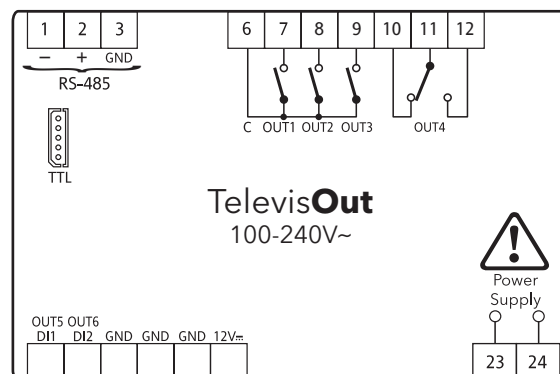
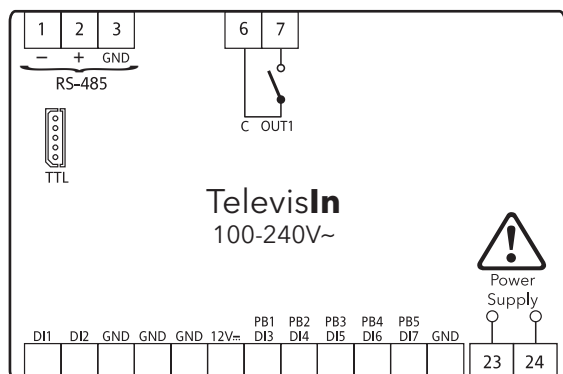
**Up to 8 configurations** for fast installation

Removable "T" connector for fast installation of the RS-485 line

## Technical data

	TelevisIn	TelevisOut
Dimensions	4 DIN modules	4 DIN modules
Installation:	on DIN Omega bar support	on DIN Omega bar support
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...400.0°C</li> <li>• Vin probe: 0-1V, 0-5V and 0-10V</li> <li>• Ain probe: 0...20mA and 4...20mA</li> </ul>	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC probe: -55.0...140.0°C</li> <li>• Pt1000 probe: -55.0...400.0°C</li> <li>• Vin probe: 0-1V, 0-5V and 0-10V</li> <li>• Ain probe: 0...20V and 4...20mA</li> </ul>
Analogue inputs:	3 NTC/PTC/Pt1000/DI inputs +1 V (0-1V / 0-5V / 0-10V) input + 1 I (0...20mA / 4...20mA) input	-
Digital inputs:	2 digital inputs (DI1 / DI2)	2 clean contact digital inputs (DI1 / DI2) also configurable as analogue outputs with no dangerous voltage
Digital outputs:	1 SPST 2A 250V~	2 (SELV) Open Collector: PWM 3 SPST 2A 250V~ 1 SPDT 2A 250V~
Connections:	<ul style="list-style-type: none"> <li>• 1 RS-485 for connection to TelevisSystem monitoring and systems based on ModBus protocol</li> <li>• 1 TTL to connect to Eliwell Unicard USB, Copycard and DMI interface for DeviceManager</li> </ul>	<ul style="list-style-type: none"> <li>• 1 RS-485 for connection to TelevisSystem monitoring and systems based on ModBus protocol</li> <li>• 1 TTL to connect to Eliwell Unicard USB, Copycard and DMI interface for DeviceManager</li> </ul>
Connectors:	Removable screw terminals	Removable screw terminals
Applications:	<b>AP1</b> =Temperature; <b>AP2</b> =Analogue Inputs <b>AP3</b> =Digital Inputs; <b>AP4</b> =Dew Point <b>AP5...8</b> =Free	<b>AP1</b> =Alarm signalling <b>AP2...8</b> =Free
Power consumption:	5W	5W
Power supply:	SMPS 100...240V~ ±10% 50/60Hz	SMPS 100...240V~ ±10% 50/60Hz

## Wiring diagrams



# LKD

## Detection and indication of refrigerant leaks



Codes	Descr.	Power supply
<b>LKD41CO2XR400</b>	LKD 100 mod110 CO <sub>2</sub>	12/24V
<b>LKD41xxxxR400</b>	LKD 100	12/24V
<b>LKD66CO2XR400</b>	LKD 200 mod210 CO <sub>2</sub>	12/24V
<b>LKD66xxxxR400</b>	LKD 200	12/24V
<b>LKDR4CO2XR400</b>	LKD 100 mod110 5m remote CO <sub>2</sub>	
<b>LKDR4xxxxR400</b>	LKD 100 5m remote	
<b>LKDSG00000000</b>	LKD Splash Guard	-

xxxx = R220 / R134 / R290 / R404 / R4A7 / R4F7 / R410 / R448 / R449 / R450 / R507 / R513 / R600 / NH3X depending on compatible refrigerant type.

### Applications

The state-of-the-art **LKD** series gas sensors can detect a wide range of gases and refrigerants depending on the model: NH<sub>3</sub>, HFO, HC, HFC and CO<sub>2</sub>.

The gas sensors of the **LKD** series can be used alone to control a buzzer, siren, etc., or integrated with Eliwell or third party remote management systems, thanks to an inbuilt RS485 ModBus.

The main applications are: LT or NT cold rooms, refrigerated cabinets and compressor units.

### Common features

Compatible with Televis and third-party systems.

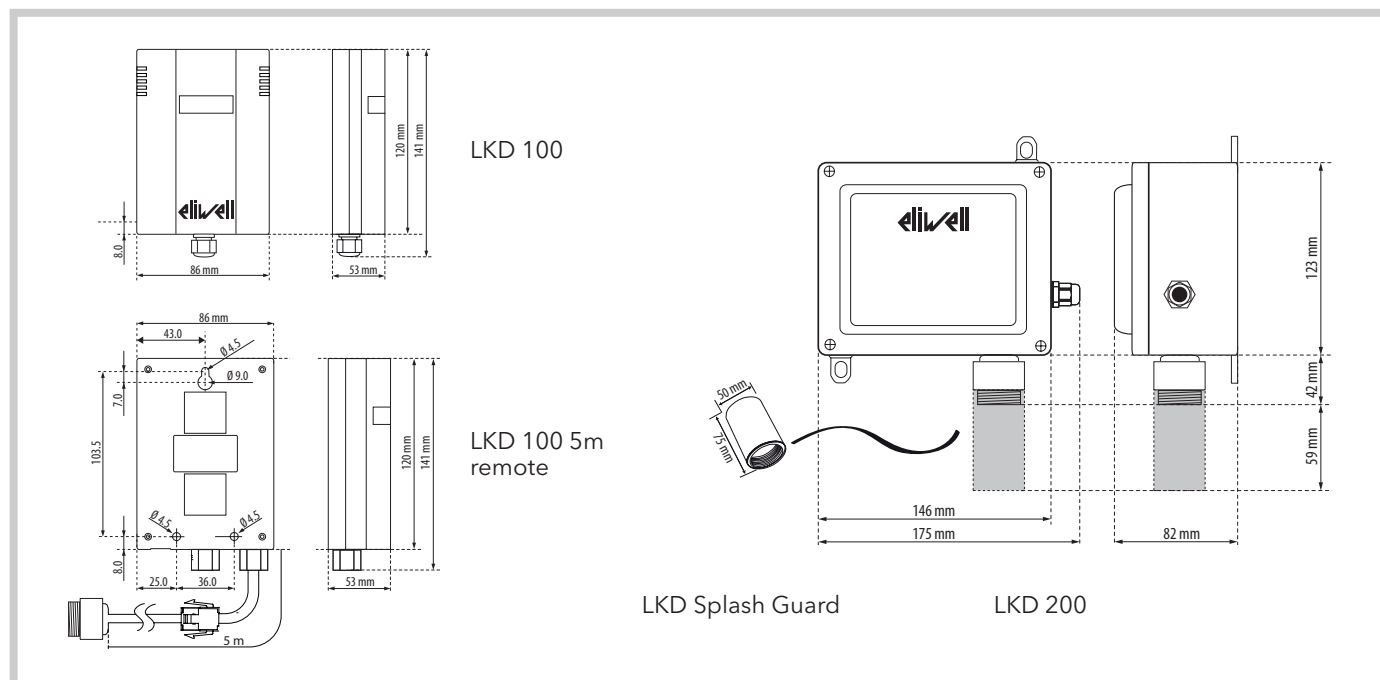
Suitable for refrigerants: NH<sub>3</sub>, HFO, HC, HFC and CO<sub>2</sub>.

Available versions **SC** (semiconductor) and **IR** (infra-red)

### Technical data

	LKD 100/110	LKD 200/210
Dimensions	86x142x53mm	175x165x82mm
Enclosure rating	IP41 (NT applications)	IP66 (LT applications)
Installation	wall-mounted, height suitable to the type of refrigerant	wall-mounted, height suitable to the type of refrigerant
Analogue outputs	0-5V, 1-5V, 0-10V, 2-10V, 4-20mA	0-5V, 1-5V, 0-10V, 2-10V, 4-20mA
Digital outputs	1 relay 1A - 24V~/~ Settable delay: 0, 1, 5, 10 minutes	1 relay 1A - 24V~/~ Settable delay: 0, 1, 5, 10 minutes
Connectivity	1 RS485 for connection to supervisor Modbus (depending on model)	1 RS485 for connection to supervisor Modbus (depending on model)
Measurement range	<b>SC</b> : 10-1.000ppm - <b>IR</b> : ppm - %	<b>SC</b> : 10-1.000ppm - <b>IR</b> : ppm - %
Temperature range	-20...+50°C	-40...+50°C
Humidity range	0...95% (non-condensing)	0...95% (non-condensing)
Sensor service life	<b>SC</b> : 5-8 years - <b>IR</b> : 8-10 years	<b>SC</b> : 5-8 years - <b>IR</b> : 8-10 years
T50 alarm threshold	<b>SC</b> : 76 sec (filtered) - <b>IR</b> : 25 sec	<b>SC</b> : 76 sec (filtered) - <b>IR</b> : 25 sec
T90 alarm threshold	<b>SC</b> : 215 sec (filtered) - <b>IR</b> : 90 sec	<b>SC</b> : 215 sec (filtered) - <b>IR</b> : 90 sec
Recovery time	<b>SC</b> : 600 sec - <b>IR</b> : 210 sec	<b>SC</b> : 600 sec - <b>IR</b> : 210 sec
On-site alarm	light (red LED) / acoustic (buzzer)	light (red LED) / acoustic (buzzer)
Consumption (at 12V)	<b>SC</b> : 153mA - <b>IR</b> : 136mA	<b>SC</b> : 153mA - <b>IR</b> : 136mA
Power supply	12-24V~/~ ±20% 50/60Hz	12-24V~/~ ±20% 50/60Hz

### Dimensions



# Memory 1000

## Recording and printing temperature



Codes	Descr.	Temperature input
M1K04N03D1X00	MEMORY 1040 F*	4
M1K04N03D0X00	MEMORY 1045 F	4
M1K08N03D1X00	MEMORY 1080 F*	8
M1K08N03D0X00	MEMORY 1085 F	8
M1K26N03D1X00	MEMORY 1080 F 2AI*	8
M1K26N03D0X00	MEMORY 1085 F 2AI	8
M1K26N03D1X00	MEMORY 1180/15 F 2AI*	8
M1K26N03D0X00	MEMORY 1185/15 F 2AI	8
RC444444	Thermal paper roll	

\* models with printer

### Applications

Memory 1000 is available in a wide range of models, combining the capabilities of a monitoring system with the ease-of-use of a data logger in order to meet various customer requirements.

### Common features

Powerful and easy to use thanks to:	Manages all aspects of network controller alarms
• fast data download on SD CARD, without using the PC	12 months+ data logging capacity
• soft key to enter the report printing menu directly	A wide range of models to fit all application requirements
Compatible with RadioAdapter wireless networks	Up to 10 digital and analogue inputs

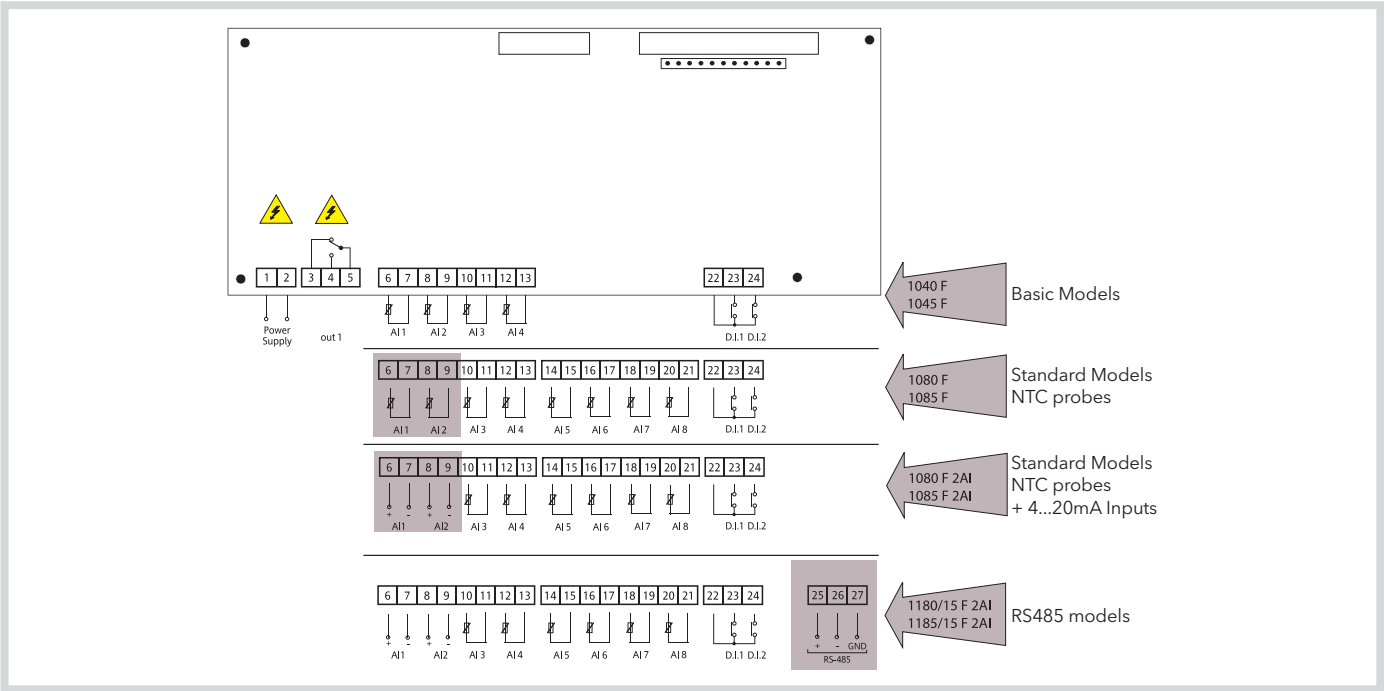
### Technical data

	Memory 1000 with printer	Memory 1000 without printer
User interface	Backlit graphic LCD 8 polycarbonate keys	Backlit graphic LCD 7 polycarbonate keys
Analogue inputs	• max 8 NTC / 4 NTC based on model • max 2 4...20 mA ( <b>only for 2AI models</b> )	• max 8 NTC / 4 NTC based on model • max 2 4...20 mA ( <b>only for 2AI models</b> )
Digital inputs	2 fixed D.I. Max 8 / 4 configurable based on model	2 fixed D.I. Max 8 / 4 configurable based on model
Digital outputs	1 SPDT 5(2)A 250V~	1 SPDT 5(2)A 250V~
Connectivity	RS-485 port for input expansion via compatible Eliwell Televis controllers RS-232 port for exporting data using Microsoft Windows® software (supplied) SD memory card slot for downloading data	RS-485 port for input expansion via compatible Eliwell Televis controllers RS-232 port for exporting data using Microsoft Windows® software (supplied) SD memory card slot for downloading data
alarm	present	present
Buzzer	present	present
Power consumption	20W max (printer in use)	5W max
Power supply	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Printer:	Integrated thermal printer	-

### Accessories

Codes	Description
RC444444	Thermal paper roll

### Wiring diagrams



# SerialAdapter - LanAdapter Ethernet - LanAdapter WiFi

Connectivity modules for systems



Codes	Descr.
<b>SAT1AMM100000</b>	<b>SerialAdapter</b> 232
<b>LA0ET00X700</b>	Ethernet <b>LanAdapter</b>
<b>LA1WF00X300</b>	<b>LanAdapter</b> WiFi 802.11n

## Applications

**SerialAdapter** is a galvanically isolated RS-232/RS-485 adapter to be used on networks with TelevisGo.

**LanAdapter** is an Ethernet/RS-485 (or TTL) interface module enabling communication between a LAN and a network of instruments compatible with the Televis protocol. In this way, the LAN network monitoring system can manage data, alarms and connected instrument network functions.

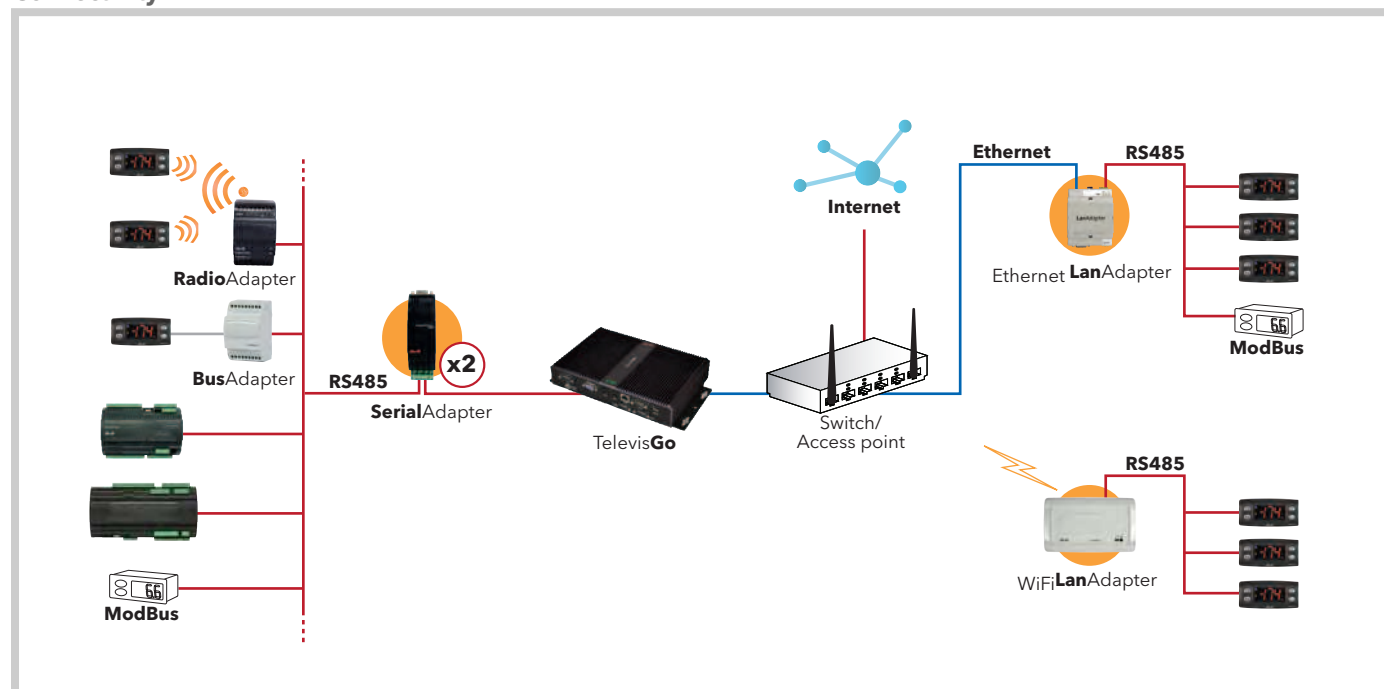
The **LanAdapter** can be configured via web pages accessible from any PC belonging to the LAN the **LanAdapter** is connected to.

## Features

RS-232, Ethernet and WiFi connectivity	Multiple networks using existing LAN infrastructures
Up to 2 SerialAdapter networks with TelevisGo	Televis and ModBus protocol compatibility

General technical specifications	SerialAdapter	Ethernet LanAdapter	WiFi LanAdapter
Container:	plastic, 2 DIN modules	plastic, 4 DIN modules	plastic
Installation:	on DIN Omega bar support	on DIN Omega bar support	wall
Power supply:	12V $\overline{=}$ through TelevisGo serial port	100-240V $\sim$ $\pm$ 10% 50/60Hz	12 Vac $\pm$ 10% 50/60 Hz
Power consumption:	-	4W max	4W max
Insulation class:	-	II	II
Ambient operating temperature:	-5...+55°C	0...+55°C	0...+55°C
Storage ambient temperature:	-30...+75°C	-20...+85°C	-20...+85°C
Ambient humidity operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Terminals:	screw terminals to connect electric cables with a section of max. 2.5 mm <sup>2</sup> (one connector per terminal).	screw terminal to connect electric cables with a section of max. 2.5 mm <sup>2</sup> (one wire per terminal). RJ-45 connector for connection to Ethernet network	<ul style="list-style-type: none"> <li>screw terminal block for conductors <math>\leq</math> 2.5mm<sup>2</sup> (14 AWG)</li> <li>disconnectable terminals for conductors <math>\leq</math> 1.5mm<sup>2</sup> (16 AWG)</li> </ul>
Connections:	<ul style="list-style-type: none"> <li>RS-485 port for connection to TelevisSystem</li> </ul>	<ul style="list-style-type: none"> <li>RS-485 port for connection to TelevisSystem</li> <li>TTL port for connection to instruments</li> <li>LAN 10/100 MBps</li> </ul>	<ul style="list-style-type: none"> <li>RS-485 serial port for ModBus connection</li> <li>WiFi: IEEE 802.11b/g/n</li> </ul>

## Connectivity



# RadioAdapter - RadioAdapter (/S) - RadioKey

Wireless connectivity modules



Codes	Descr.
BARF0TT00NH00	RadioAdapter V2.0
BARF0DT00NH00	RadioAdapter/S V2.0
CCA0B0T01T000	RadioKey (Televis)
CCA0B0T01Mx00	RadioKey (ModBus RTU)

x = based on setting of ModBus RTU serial:  
**0:** 9600, 8, N, 1 - **1:** 9600, 8, O, 1 - **2:** 9600, 8, E, 1 - **3:** 19200, 8, N, 1  
**4:** 19200, 8, O, 1 - **5:** 19200, 8, E, 1

## Applications

**RadioAdapter** provides a cost-effective, reliable way of building communication networks between monitoring systems and controllers by replacing cables or extending existing networks.  
**RadioKey** is a device needed to configure the network.

## Common features

Frequency band ISM 2.400 GHz...2.485 GHz	Ability to act as a repeater for adjacent nodes
MESH communication technology with automatic directory selection	EC certification for European market
Extensive surface coverage	FCC certification for American market

General technical specifications	RadioAdapter RadioAdapter/S	RadioKey
Container:	3 DIN modules	-
Installation:	on DIN Omega bar support	-
Power supply:	100...240V~ ±10% 50/60Hz	-
Power consumption:	2W	-
Insulation class:	II	-
Ambient operating temperature:	-5...+60°C	-
Storage ambient temperature:	-20...+85°C	-
Ambient humidity operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Operating class:	Class 4, ISA classification SP100.11 (not to be used for safety equipment)	-
Type of network:	MESH	-
Protocol supported:	Televis or ModBus RTU	-
Number of nodes per network:	100 max.	-
Number of controllers per node:	240 max.	-
Radio response time:	800msec max.	-
Connections:	TTL port for connection to RS-485 serial port devices - <b>just models /S</b>	-
Antenna:	2 x 4GHz integrated, multi-directional	-
Accessories/notes:	-	needed for network configuration. Available for Televis or ModBus RTU networks

## Wiring diagrams



# BusAdapter 130 - 150

RS-485 opto isolator connectivity modules



Codes	Descr.	Details
<b>BA11250N3700</b>	BusAdapter 130	1.5 m cable
<b>BA10000R3700</b>	BusAdapter 150	1.5 m cable
<b>BA00000XD000</b>	BusAdapter 150 DONGLE	30 cm cable

## Applications

BusAdapter 130 and 150 is a family of devices used to connect Eliwell controllers to wired supervision and monitoring networks in RS-485 mode.

## Features

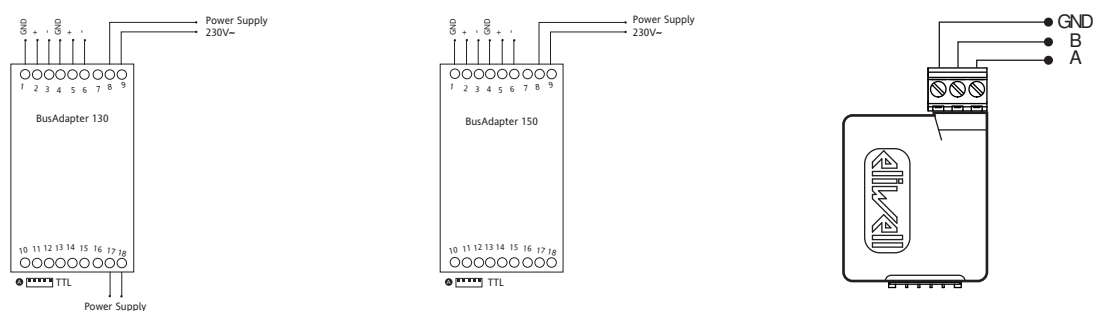
**130 models** have an auxiliary 12V (5 VA) output to power the instrument.

**150 models** are equipped with reinforced electric insulation

The **150 DONGLE models** are powered directly from the controller and are not isolated. Check the list of compatible controllers on the website [www.eliwell.com](http://www.eliwell.com)

Technical data	BusAdapter 130	BusAdapter 150	BusAdapter 150 DONGLE
Container	3 DIN modules	3 DIN modules	47x31x22 mm (LxHxD)
Installation	on DIN Omega bar support	on DIN Omega bar support	free
Power supply	230V~ / 115V~ ±10% 50/60Hz	230V~ / 115V~ ±10% 50/60Hz	/
Power consumption	6W	1.5W	/
Insulation class	II	II	/
Ambient operating temperature	-5...+55°C	-5...+60°C	-20...60°C
Storage ambient temperature:	-30...+75°C	-30...+75°C	-30...85°C
Ambient operation and storage humidity	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Terminals	screw-on terminal block to connect electric cables with a section of max. 2.5 mm <sup>2</sup> (one wire per terminal for power connections)	screw-on terminal block to connect electric cables with a section of max. 2.5 mm <sup>2</sup> (one wire per terminal for power connections)	screw terminals to connect electric cables with a section of max. 2.5 mm <sup>2</sup>
Connectivity	<ul style="list-style-type: none"> <li>double RS-485 port for connection to Televis<b>System</b></li> <li>TTL port for connection to instruments</li> </ul>	<ul style="list-style-type: none"> <li>double RS-485 port for connection to Televis<b>System</b></li> <li>TTL port for connection to instruments</li> </ul>	<ul style="list-style-type: none"> <li>RS-485 for connection to Televis<b>System</b></li> <li>TTL port for connection to instruments</li> </ul>
Baud rate	2400...9600 Baud	2400...9600 Baud	2400...9600 Baud
Auxiliary output	12V~/±10% 50/60Hz	/	/

## Wiring diagrams





# Modem GSM/GPRS

Modem



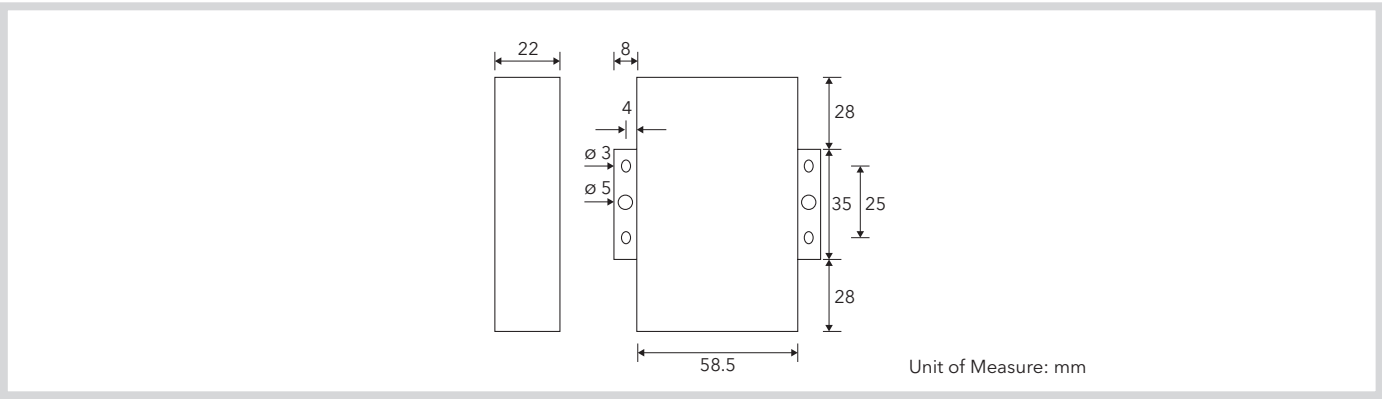
Codes	Descr.
<b>SAMGPRS35AL00</b>	GSM/GPRS W/ANT PSU MODEM KIT Includes: power supply unit (European 10A plug) + antenna with 1.5m cable

## Applications

The GSM/GPRS modem can be used to send SMS and for backup connectivity.

Technical Data	Modem GSM/GPRS
Case:	Metal
Dimensions:	91x58.5x22 mm (BxHxD)
Weight:	195g
Frequency bands:	EGSM900/GSM1800MHz, GSM850/900/1800
GSM standard:	GSM phase 2/2+
GPRS standard:	class 10 - 85.6Kbps
Transmission power:	GSM850/900: <33dBm; GSM1800: <30dBm
Reception sensitivity:	<-107dBm
Connections:	<ul style="list-style-type: none"><li>• DB9 port RS-232 serial port, with 15KV ESD protection</li><li>• SMA 50 Ohm antenna connection, female connector</li><li>• connector powering 3-pole jack with protection for overvoltages and inverted polarity</li><li>• SIM/USIM 3V/1.8V slot with 15KV ESD protection</li></ul>
Power supply:	5...35V~ 12V
Power consumption:	<200mA (12V)
Serial configuration:	Speed 110 ... 230400 bps 5, 6, 7, 8 data bits 1, 1.5, 2 stop bit Parity none, even, odd, space, mark
Operating temperature:	-25...+65°C (-13...+149°F)
Storage temperature:	-40...+85°C (-40...+185°F)
Operation and storage humidity:	10...95% RH (non-condensing)

## Dimensions



# ELECTROMECHANICAL COMPONENTS

Eliwell supplies a number of accessories to complete its line of instruments.

Temperature, humidity, pressure probes, power supply units, a wide range of transformers, on to memory devices like Unicard, to transfer parameters quickly and update controller firmware.

Devices designed to give the user all those instruments enabling greater work quality and productivity.





# NSD

## Fixed setting pressure switches



### Applications

The NSD range of electromechanical pressure switches with fixed setting are compact, lightweight and easy to install. They are products designed to protect refrigeration systems against critical conditions by setting high or low pressure limits. The stainless steel control element is designed so as to ensure a better life of the product with high performance. Thanks to the modern construction technology, NSD pressure switches offer the best solutions for applications in refrigeration systems, residential and commercial air conditioning, automotive, ice machines, etc. They can also be used to control the pressure in hydraulic or steam systems, in air compressors and in industrial equipment.

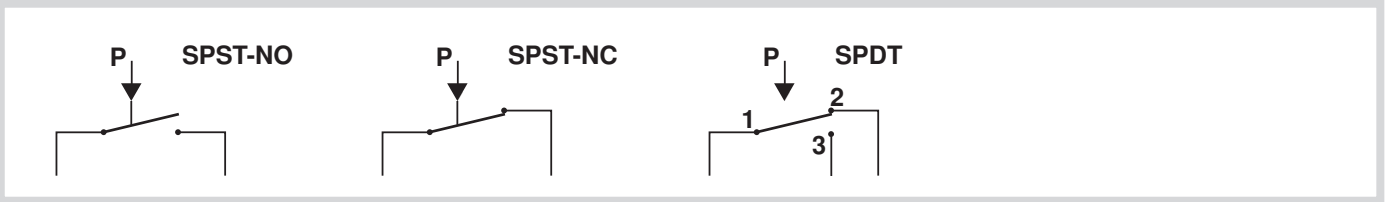
### Technical data

Technical data	NSD
Compatible refrigerants:	HCFC, HFC, HFO, HC and respective lubricant oils, CO <sub>2</sub>
Contacts configuration:	SPST-NO, SPST-NC, SPDT
Reset:	Automatic or manual
Standard electrical connections:	Fast-on 1/4" (6.35 mm) 1.0 m cable UL1015 (0.82 mm <sup>2</sup> / 18 AWG) Other types of electrical connections upon request
Standard pressure fitting:	7/16-20 UNF with depressor Other types of fittings upon request
Contact resistance:	< 50 mΩ
Dispersion current:	< 0.75 mA
Resistance to flame:	94V-0
Protection rating:	IP67 (versions with cable)
Ambient operating temperature:	-30°C...+80°C
Fluid temperature:	-54°C...+135°C
Storage and transport temperature:	-60°C...+105°C
Pressure range:	<b>Automatic reset:</b> -1 ... +55 bar (-14.50 ... 797.70 psi) <b>Manual reset:</b> 10 ... 55 bar (145.03 ... 797.70 psi) <b>CO<sub>2</sub> applications:</b> 90 ... 180 bar (1305.33 ... 2610.67 psi)
Max system pressure	<b>0 ... 1.5 bar:</b> 28 bar <b>1.5 ... 31 bar:</b> 45 bar <b>&gt;31 bar:</b> 1.43xWork Pressure
Available approvals:	VDE; UL; PED classification cat. IV

### Load features

Models	Reset	Load type	Voltage	Load	Piloting service [VA]
NSDHM	Manual Reset - SPST	Motor	120 / 240 Vac	6 FLA - 36 LRA	---
		Motor	120 Vac	6 FLA - 36 LRA	375
	Manual Reset - SPDT		240 Vac	3 FLA - 18 LRA	---
NSDHA NSDHF NSDLA NSDCA	Automatic Reset - SPST	---	36 Vdc	3 A	---
		Motor	24 Vac	---	125
			120 Vac	6 FLA - 36 RLA	375
			240 Vac	6 FLA - 36 RLA	
		Resistive or inductive	250 Vac	6 A	---
NSDHA NSDLA	Automatic Reset - SPDT	---	36 Vdc	3 A	---
		Motor	24 Vac	---	125
			120 Vac	6 FLA - 36 RLA	375
			240 Vac	3 FLA - 18 RLA	
			250 Vac	3 A	
		Inductive	250 Vac	3 A	---

### Contacts configuration

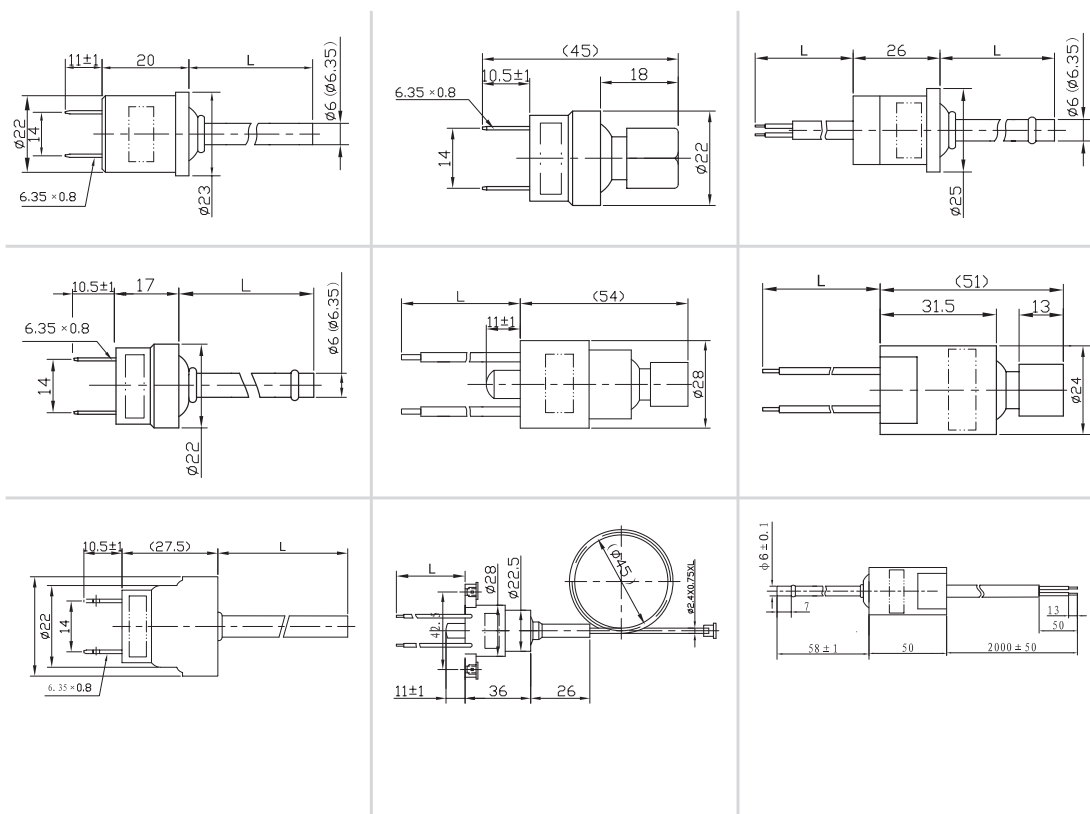




Code*	Application	Reset	Cut out (bar)	Cut in (bar)	Contact configuration	UL models family
<b>NSDHA00B39101</b>	High Pressure	automatic	18	13	SPST - NC	NSD03H
<b>NSDHM00C39006</b>		manual	18	13	SPST - NC	NSDM
<b>NSDHA00B39107</b>		automatic	24	18	SPST - NC	NSD03H
<b>NSDHA00B39102</b>		automatic	26	20	SPST - NC	NSD03H
<b>NSDHA00B39103</b>		automatic	28	21	SPST - NC	NSD03H
<b>NSDHM00C39007</b>		manual	28	21	SPST - NC	NSDM
<b>NSDHA00B39104</b>		automatic	42	33	SPST - NC	NSD03H
<b>NSDHM00C39008</b>		manual	42	33	SPST - NC	NSDM
<b>NSDLA00A39112</b>	Low Pressure	automatic	0.7	1.7	SPST - NO	NSD03L
<b>NSDLA00A39100</b>		automatic	1.7	2.7	SPST - NO	NSD03L
<b>NSDLA00A39114</b>		automatic	2.5	4.2	SPST - NO	NSD03L
<b>NSDHF00A39103</b>	Fan control	automatic	8.5	11	SPST - NO	NSD03H
<b>NSDHF00A39104</b>		automatic	13	16	SPST - NO	NSD03H
<b>NSDCA11B32300</b>	High pressure CO <sub>2</sub>	automatic	125	90	SPST - NC	//

\* Standard codes with 1 m cable length, and ¼ SAE female connection with depressor

### Overall dimensions



## RV series

### 4-way reversing values



### Applications

The RV series 4-way reversing valves are the key component to provide heating and cooling in a climate controlled space by reversing the refrigerant. They are used for air conditioning individual rooms, centralised air conditioning plants, monobloc air conditioners and CR units for defrosting applications.

Reversing valves are designed for systems with capacities from 1 kW up to 560 kW.

The valves are suitable for use with HCFC, HFC and HFO.

RV00 to RV10 valves can also be used with HC refrigerants \*\*.

The design of the valve also guarantees minimum pressure drop and very low leakage. The available models offer a wide range of connections, configurations and capacities for specific applications. All models are individually packaged to ensure maximum flexibility for purchasing and usage.

\*Contact Eliwell sales department for more information.

### Direct action models

Code	Description Pipe diameter (inches)	CAPACITY MIN. - MAX. (conditions 1)				CAPACITY MIN. - MAX. (conditions 2)				Configuration	Port (Ø)	Weight (kg)	Master Carton
		R407C	R410A	R404A	R134a	R407C	R410A	R404A	R134a				
		kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.				
RV00BD06050000	REV. VALV. 0.5 UST 3/8 - 5/16 U DISCH	1.32/3.10 (0.38/0.88)	1.53/3.86 (0.44/1.10)	1.13/2.38 (0.32/0.68)	1.13/2.38 (0.32/0.68)	1.43/3.37 (0.41/0.96)	1.66/4.2 (0.47/1.19)	1.23/2.59 (0.35/0.74)	1.23/2.29 (0.35/0.74)	B	8	0.193	45
RV01AD06060000	REV. VALV. 1 UST 3/8 - 3/8	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	A	11.1	0.19	18
RV01AD08050000	REV. VALV. 1 UST 1/2 - 5/16	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	A	11.1	0.25	18
RV01BD06050000	REV. VALV. 1 UST 3/8 - 5/16 U DISCH	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	B	11.1	0.27	18
RV01BD06060000	REV. VALV. 1 UST 3/8 - 3/8 U DISCH	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	B	11.1	0.19	18
RV01AD08060000	REV. VALV. 1 UST 1/2 - 3/8	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	A	11.1	0.19	18
RV01AD06050000	REV. VALV. 1 UST 3/8 - 5/16	1.39/4.62 (0.40/1.31)	1.73/6.01 (0.49/1.71)	1.48/4.22 (0.42/1.20)	1.39/3.91 (0.40/1.11)	1.51/5.02 (0.43/1.43)	1.88/6.53 (0.53/1.86)	1.61/4.59 (0.46/1.30)	1.51/4.25 (0.43/1.21)	A	11.1	0.19	18
RV02AD08060000	REV. VALV. 2 UST 1/2 - 3/8	2.79/6.35 (0.79/1.81)	3.14/7.78 (0.89/2.21)	2.46/5.28 (0.70/1.50)	2.44/4.95 (0.69/1.41)	3.03/6.90 (0.86/1.96)	3.41/8.46 (0.97/2.40)	2.67/5.74 (0.76/1.63)	2.65/5.38 (0.75/1.53)	A	11.1	0.28	18
RV02BD08060000	REV. VALV. 2 UST 1/2 - 3/8 U DISCH	2.79/6.35 (0.79/1.81)	3.14/7.78 (0.89/2.21)	2.46/5.28 (0.70/1.50)	2.44/4.95 (0.69/1.41)	3.03/6.90 (0.86/1.96)	3.41/8.46 (0.97/2.40)	2.67/5.74 (0.76/1.63)	2.65/5.38 (0.75/1.53)	B	11.1	0.28	18
RV02CD10060000	REV. VALV. 2 UST 5/8 - 3/8	3.85/7.10 (1.09/2.02)	4.54/8.81 (1.29/2.50)	3.17/5.98 (0.90/1.70)	3.14/5.63 (0.89/1.60)	4.18/7.72 (1.19/2.19)	4.93/9.58 (1.40/2.72)	3.45/6.50 (0.98/1.85)	3.41/6.12 (0.97/1.74)	C	11.1	0.28	18
RV02DD10060000	REV. VALV. 2 UST 5/8 - 3/8 U DISCH	3.85/7.10 (1.09/2.02)	4.54/8.81 (1.29/2.50)	3.17/5.98 (0.90/1.70)	3.14/5.63 (0.89/1.60)	4.18/7.72 (1.19/2.19)	4.93/9.58 (1.40/2.72)	3.45/6.50 (0.98/1.85)	3.41/6.12 (0.97/1.74)	D	11.1	0.30	18
RV03ED10080000	REV. VALV. 3 UST 5/8 - 1/2	3.85/9.55 (1.09/2.72)	4.54/11.98 (1.29/3.41)	3.17/8.09 (0.90/2.30)	3.14/7.42 (0.89/2.11)	4.18/10.4 (1.19/2.95)	4.93/13.00 (1.40/3.70)	3.45/8.79 (0.98/2.50)	3.41/8.07 (0.97/2.29)	E	11.5	0.32	12
RV03ED12080000	REV. VALV. 3 UST 3/4 - 1/2	3.85/9.90 (1.09/2.81)	4.54/12.35 (1.29/3.51)	3.17/8.44 (0.90/2.40)	3.14/7.78 (0.89/2.21)	4.18/10.8 (1.19/3.06)	4.93/13.4 (1.4/3.82)	3.45/9.17 (0.98/2.61)	3.41/8.46 (0.97/2.40)	E	11.5	0.35	12
RV03CD10080000	REV. VALV. 3 UST 5/8 - 1/2 CENT DISCH	3.85/9.55 (1.09/2.72)	4.54/11.98 (1.29/3.41)	3.17/8.09 (0.90/2.30)	3.14/7.42 (0.89/2.11)	4.18/10.4 (1.19/2.95)	4.93/13.00 (1.40/3.70)	3.45/8.79 (0.98/2.50)	3.41/8.07 (0.97/2.29)	C	11.5	0.32	12
RV03DD10080000	REV. VALV. 3 UST 5/8 - 1/2 U DISCH	3.85/9.55 (1.09/2.72)	4.54/11.98 (1.29/3.41)	3.17/8.09 (0.90/2.30)	3.14/7.42 (0.89/2.11)	4.18/10.4 (1.19/2.95)	4.93/13.00 (1.40/3.70)	3.45/8.79 (0.98/2.50)	3.41/8.07 (0.97/2.29)	D	11.5	0.32	12
RV06AD12080000	REV. VALV. 6 UST 3/4 - 1/2	3.85/19.02 (1.09/5.41)	4.54/23.95 (1.29/6.81)	3.17/14.81 (0.90/4.21)	3.17/14.81 (0.89/4.21)	4.18/20.70 (1.19/5.88)	4.93/26.00 (1.40/7.40)	3.45/17.59 (0.98/5.00)	3.41/16.10 (0.97/4.58)	A	15.5	0.66	12
RV06AD14080000	REV. VALV. 6 UST 7/8 - 1/2	3.85/19.02 (1.09/5.41)	4.54/23.95 (1.29/6.81)	3.17/14.81 (0.90/4.21)	3.17/14.81 (0.89/4.21)	4.18/20.70 (1.19/5.88)	4.93/26.00 (1.40/7.40)	3.45/17.59 (0.98/5.00)	3.41/16.10 (0.97/4.58)	A	15.5	0.68	12
RV06AD14100000	REV. VALV. 6 UST 7/8 - 5/8	3.85/19.02 (1.09/5.41)	4.54/23.95 (1.29/6.81)	3.17/14.81 (0.90/4.21)	3.17/14.81 (0.89/4.21)	4.18/20.70 (1.19/5.88)	4.93/26.00 (1.40/7.40)	3.45/17.59 (0.98/5.00)	3.41/16.10 (0.97/4.58)	A	15.5	0.72	12
RV06AD14120000	REV. VALV. 6 UST 7/8 - 3/4	3.85/19.02 (1.09/5.41)	4.54/23.95 (1.29/6.81)	3.17/14.81 (0.90/4.21)	3.17/14.81 (0.89/4.21)	4.18/20.70 (1.19/5.88)	4.93/26.00 (1.40/7.40)	3.45/17.59 (0.98/5.00)	3.41/16.10 (0.97/4.58)	A	15.5	0.72	12
RV10AD14080000	REV. VALV. 10 UST 7/8 - 1/2	11.22/33.11 (3.19/9.41)	12.29/41.88 (3.49/11.91)	9.50/26.05 (2.70/7.41)	9.82/26.05 (2.79/7.41)	12.20/36.00 (3.47/10.20)	13.40/45.50 (3.80/12.90)	10.33/28.32 (2.94/8.05)	10.70/28.30 (3.03/8.05)	A	19.0	1.19	8
RV10AD14120000	REV. VALV. 10 UST 7/8 - 3/4 ALTERNAT.	17.21/33.11 (4.89/9.41)	19.71/41.88 (5.60/11.91)	9.50/26.05 (2.70/7.41)	14.41/26.05 (4.10/7.41)	18.70/36.00 (5.32/10.20)	21.40/45.50 (6.09/12.90)	10.33/28.32 (2.94/8.05)	15.70/28.30 (4.45/8.05)	A	19.0	1.19	8
RV10AD14140X00	REV. VALV. 10 UST 7/8 - 7/8 FREE	11.22/33.11 (3.19/9.41)	12.29/41.88 (3.49/11.91)	9.50/26.05 (2.70/7.41)	9.82/26.05 (2.79/7.41)	12.20/36.00 (3.47/10.20)	13.40/45.50 (3.80/12.90)	10.33/28.32 (2.94/8.05)	10.70/28.30 (3.03/8.05)	A	19.0	1.23	8

# RV series

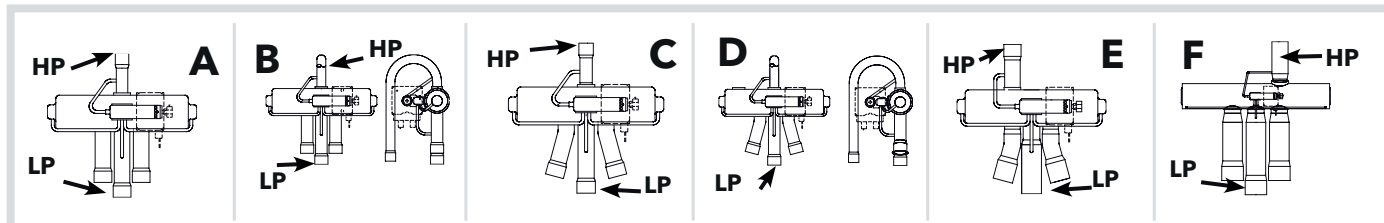
## 4-way reversing values

Code	Description Pipe diameter (inches)	CAPACITY MIN. - MAX. (conditions 1)				CAPACITY MIN. - MAX. (conditions 2)				Configuration	Port (°)	Weight (kg)	Master Carton
		R407C	R410A	R404A	R134a	R407C	R410A	R404A	R134a				
		kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.				
RV10AD180M0000	REV. VALV. 10 UST 1-1/8 - METRIC	17.21/37.67 (4.89/10.71)	19.71/47.51 (5.60/13.51)	14.41/32.36 (4.10/9.20)	14.41/29.57 (4.10/8.41)	18.70/40.90 (5.32/11.60)	21.40/51.60 (6.09/14.70)	15.66/35.17 (4.46/10.00)	15.70/32.10 (4.45/9.14)	A	19.0	1.23	8
RV10AD18120000	REV. VALV. 10 UST 1-1/8 - 3/4	17.21/37.67 (4.89/10.71)	19.71/47.51 (5.60/13.51)	14.41/32.36 (4.10/9.20)	14.41/29.57 (4.10/8.41)	18.70/40.90 (5.32/11.60)	21.40/51.60 (6.09/14.70)	15.66/35.17 (4.46/10.00)	15.70/32.10 (4.45/9.14)	A	19.0	1.23	8

## Models with pilot

Code	Description Pipe diameter (inches)	CAPACITY MIN. - MAX. (conditions 1)				CAPACITY MIN. - MAX. (conditions 2)				Configuration	Port (°)	Weight (kg)	Master Carton
		R407C	R410A	R404A	R134a	R407C	R410A	R404A	R134a				
		kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.				
RV20AP20160000	REV. VALV. 20 UST 1-1/4 - 1	17.56/72.48 (4.99/20.61)	17.59/81.64 (4.99/23.21)	13.72/54.16 (3.90/15.40)	13.69/54.19 (3.89/15.41)	19.09/78.78 (5.43/22.40)	19.12/88.74 (5.44/25.23)	14.91/58.57 (4.24/16.74)	14.88/58.90 (4.23/16.75)	A	34.6	3.35	1
RV20AP22180000	REV. VALV. 20 UST 1-3/8 - 1-1/8	17.56/72.48 (4.99/20.61)	17.56/81.64 (4.99/23.21)	13.72/54.16 (3.90/15.40)	13.69/54.19 (3.89/15.41)	19.09/78.78 (5.43/22.40)	19.12/88.74 (5.44/25.23)	14.91/58.57 (4.24/16.74)	14.88/58.90 (4.23/16.75)	A	26.0	3.25	1
RV30AP24200000	REV. VALV. 30 UST 1-1/2 - 1-1/4	26.35/108.72 (7.49/30.91)	26.36/122.44 (7.50/34.81)	20.40/81.24 (5.80/23.10)	20.36/81.28 (5.79/23.11)	28.64/118.17 (8.14/33.60)	28.65/133.09 (8.15/37.84)	22.17/88.30 (6.30/25.11)	22.13/88.35 (6.29/25.12)	A	34.6	3.38	1
RV40AP28240000	REV. VALV. 40 UST 1-3/4 - 1-1/2	35.14/144.95 (9.99/41.21)	35.16/163.25 (10.00/46.42)	27.08/108.32 (7.70/30.80)	27.03/108.36 (7.69/30.81)	38.20/157.55 (10.86/44.80)	38.22/177.45 (10.87/50.45)	29.43/117.74 (8.37/33.48)	29.38/117.78 (8.35/33.49)	A	41	7.15	1
RV40AP26240000	REV. VALV. 40 UST 1-5/8 - 1-1/2	35.14/144.95 (9.99/41.21)	35.16/163.25 (10.00/46.42)	27.08/108.32 (7.70/30.80)	27.03/108.36 (7.69/30.81)	38.20/157.55 (10.86/44.80)	38.22/177.45 (10.87/50.45)	29.43/117.74 (8.37/33.48)	29.38/117.78 (8.35/33.49)	A	41	7.25	1
RV50AP34240000	REV. VALV. 50 UST 2-1/8 - 1-1/2	35.14/181.13 (9.99/51.50)	35.21/203.99 (10.01/58.00)	27.08/135.40 (7.70/38.50)	27.03/135.4 (7.69/38.50)	38.20/196.88 (10.86/55.98)	38.27/221.73 (10.88/63.04)	29.43/147.17 (8.37/41.85)	29.38/147.17 (8.35/41.85)	A	46.4	7.35	1
RV60AP42260000	REV. VALV. 60 UST 2-5/8 - 1-5/8	38.3/197.43 (10.89/56.14)	38.38/222.35 (10.91/63.22)	29.52/147.59 (8.39/41.96)	29.46/147.59 (8.38/41.96)	41.63/214.60 (11.84/61.02)	41.72/241.68 (11.86/68.72)	32.09/160.42 (9.12/45.61)	32.02/160.42 (9.10/45.61)	A	50.2	7.60	1

## Configuration



## Multi-valve models

Code	Configuration Description	CAPACITY MIN. - MAX. (conditions 1)				CAPACITY MIN. - MAX. (conditions 2)				Port (°)	Weight (kg)	Master Carton
		R407C	R410A	R404A	R134a	R407C	R410A	R404A	R134a			
		kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.	kW (US Ton) min./max.			
RVH0AP2N400100	REV. VALV. 80 UST MULTI	70.31/289.84 (19.99/82.41)	-	54.12/216.68 (15.39/61.61)	54.12/216.68 (15.39/61.61)	76.40/315.00 (21.70/89.60)	-	58.83/235.52 (16.73/66.97)	58.80/236.00 (16.70/67.00)	41*2	55	1
RVH0AP2N400200	REV. VALV. 80 UST MULTI WITH VLV	70.31/289.84 (19.99/82.41)	-	54.12/216.68 (15.39/61.61)	54.12/216.68 (15.39/61.61)	76.40/315.00 (21.70/89.60)	-	58.83/235.52 (16.73/66.97)	58.80/236.00 (16.70/67.00)	41*2	55	1
RVN0AP3N400000	REV. VALV. 120 UST MULTI	105.28/436.15 (29.93/124.01)	-	81.24/324.96 (23.10/92.40)	81.21/324.02 (23.09/92.13)	114.00/474.00 (32.50/135.00)	-	88.30/353.22 (25.11/100.43)	88.30/352.00 (25.10/100.00)	41*3	73	1
RVR0AP4N400000	REV. VALV. 160 UST MULTI	140.65/579.60 (39.99/164.80)	-	108.32/433.28 (30.80/123.20)	108.29/433.32 (30.79/123.21)	153.00/630.00 (43.50/179.00)	-	117.74/470.96 (33.48/133.91)	118.00/471.00 (33.50/134.00)	41*4	82	1

### CONDITIONS 1

the capacities indicated are based on the following conditions:

- evaporation temperature: 7.2°C;
- condensation temperature: 55°C;
- sub cooling: 5.0°C;
- superheat: 5.0°C;
- pressure drop: 0.014 MPa

### CONDITIONS 2

the capacities indicated are based on the following conditions:

- evaporation temperature: 4.4°C;
- condensation temperature: 38°C;
- sub cooling: 0°C;
- superheat: 5.0°C;
- pressure drop: 0.01 MPa



# RV series

4-way reversing valves



## Coils



Code	Description	Power supply	Frequency	Power at 50/60 Hz (W)	Cable length	
					mm	inches
RVCKA702400000	COIL 24 Vac without cable	24 Vac	50/60 Hz	5.5 / 3.5	-	-
RVCKA612000000	COIL 120 Vac without cable	120 Vac	50/60 Hz	5.5 / 3.5	-	-
RVCKA723000000	COIL 230 Vac without cable	230 Vac	50/60 Hz	5.5 / 3.5	-	-
RVCKD001200000	COIL 12 Vdc without cable	12 Vdc	-	10	-	-
RVCKD002400000	COIL 24 Vdc without cable	24 Vdc	-	10	-	-
RVCLA702404800	COIL 24 Vac with 48" cable	24 Vac	50/60 Hz	5.5 / 3.5	1200	48
RVCLA612004800	COIL 120 Vac with 48" cable	120 Vac	50/60 Hz	5.5 / 3.5	1200	48
RVCLA723004800	COIL 230 Vac with 48" cable	230 Vac	50/60 Hz	5.5 / 3.5	1200	48
RVCLD001204800	COIL 12 Vdc with 48" cable	12 Vdc	-	10	1200	48
RVCLD002404800	COIL 24 Vdc with 48" cable	24 Vdc	-	10	1200	48

other cable lengths are available on request

## Accessories

Code	Description	Cable length	
		mm	inches
RVCC0W29048000	48" cable for RVCK coil	1200	48
RV00H7-60A0000	coil screw	-	-

other cable lengths are available on request

# NTC Probes

NTC semi-conductor temperature probes



## NTC co-moulded with double insulation

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN8SAA1502	NTC with double insulation	AISI304	6X40	silicone	IP67	4000V	-50...+120°C	1.5m
SN8PAA1500	NTC with double insulation	AISI304	6X40	PVC	IP67	4000V	-30...+105°C	1.5m

## NTC co-moulded with double insulated cable

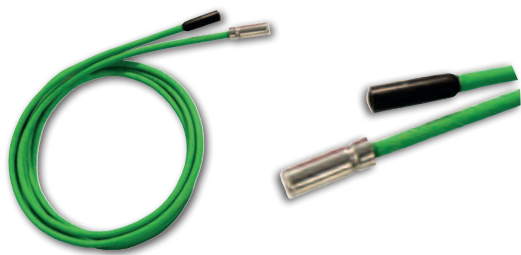
Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN8T6H0005	NTC co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber shielded	IP68	2000V	-50...+110°C	10.0m
SN8T6H1505	NTC co-moulded with double insulated cable shielded	Thermoplastic rubber	5X20	Thermoplastic rubber	IP68	2000V	-50...+110°C	1.5m
SN8DED11502C0	NTC co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN8DED13002C0	NTC co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m
SN8DAE11502C0	NTC co-moulded with double insulated cable	AISI 304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN8DAE13002C0	NTC co-moulded with double insulated cable	AISI304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m
SN8T6N1502	NTC co-moulded with double insulated cable	AISI304	6X50	Thermoplastic rubber	IP68	2000V	-50...+110°C	1.5m

## NTC special versions

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN8DEB21502C0	NTC clamp-on	Thermoplastic rubber	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN8DEB23002C0	NTC clamp-on	Thermoplastic rubber	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m
SN8DNB11502A0	NTC clamp-on probe IP67 Fast response	Copper	4X16	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	1500V	-50...+110°C	1.5m
SN8DAC11502AV	NTC probe Fast response	AISI 304	4X40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000V	-50...+110°C	1.5m
SN8DAC13002AV	NTC probe Fast response	AISI304	4X40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000V	-50...+110°C	3.0m
SN8DEP15002C0	NTC Probe product simulation	Thermoplastic rubber	Ø 110	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	5.0m

# Pt100 - Pt1000 probes

Pt100 - Pt1000 thermo-resistive temperature probes



## Pt100

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Operating range	Length probe
SN200009	Pt100, 3 wires with steel tube	AISI 316	6x100	Vetrotex	IP44	0...+600°C	3 mm
SN206000	Pt100, 3 wires with steel tube	AISI 316	6x100	silicone	IP67	-40...200°C	3 mm
SN2TAE51502C0	P100 with steel tube	AISI 304	6x50	thermoplastic rubber	IP68	-50...+110°C	1.5 mm

## Pt1000

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN9S0A2500	Pt1000 with two wires	AISI304	6X40	Silicone	IP67	2000V	-50...+200°C	2.5m
SN9DAE11502C6	Pt1000 co-moulded with double insulated cable	AISI304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN9DAE13002C6	Pt1000 co-moulded with double insulated cable	AISI304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m
SN9DED11502C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN9DED13002C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m

# PTC - TC probes

PTC semi-conductor temperature probes, TC thermocouples



## Applications

Temperature probes, available in various models, are devices that provide the instruments to which they are connected with a temperature measurement by way of a physical process.

## Common features

Accuracy of temperature measurement: +/- 1%

## PTC

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN7T6A1502	PTC co-moulded with double insulated cable	AISI 304	6X40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5m
SN7DAE11502C0	PTC co-moulded with double insulated cable	AISI 304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5m
SN7DAE13002C0	PTC co-moulded with double insulated cable	AISI 304	6X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0m
SN7DED11502C0	PTC co-moulded with double insulated cable	Thermoplastic rubber	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5m
SN7DED13002C0	PTC co-moulded with double insulated cable	AISI 304	5X20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0m
SN6070000	PTC for ambient temperature	Plastic	15X70	-	IP54	-	-40...+120°C	-
SN603008	PTC for piercing, with PVC grip	AISI316	3X150	Silicone	IP65	-	-20...+110°C	3.0m
SN/FAF12702A4	PTC for piercing with 90° curved thermoplastic rubber grip	AISI 304	Conical (3.5 up to 5.5) x 100	Thermoplastic rubber (Outer) and polypropylene (Inner)	IP67	-	-50 +110°C	2.7m

## TCK

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN400000	Tck	AISI 304	6X100	TTS	IP45	-	0...400°C	3.0m
SN400004	Tck	Inconel 600	6X200	TTS	IP45	-	-40...1150°C	1.0m

## TCJ

Codes	Description	Capsule material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN300000	Tcj	AISI 316	6X100	vetrorex	IP44	-	0...350°C	3.0m
SN300008	Tcj	AISI 316	6X100	vetrorex	IP44	-	0...350°C	1.5m
SN300042	Tcj	AISI 304	6X100	TTS	IP45	-	0...350°C	3.0m

# EWPA 007 - 030 - 050

## Pressure transducers



### Applications

EWPA pressure transducers are sensors capable of transmitting a signal by way of a current output to the measuring instruments with which they are connected.

Technical data	EWPA 0007	EWPA 010	EWPA 030	EWPA 050	EWPA 150
Operating range	-0.5...7.0 bar (relative)				0.150 bar (relative)
Output signal	2 wires 4...20 mA				
Overload	2 times pressure range				
Power supply	8...32V				
Accuracy	± 0.5% FS max (linearity, hysteresis, repeatability)				
Compensated temperature	0...50°C				
Electrical connections	2m integrated cable 2 m cable with Packard connector				
Mechanical connections	male connector / female connector ¼ SAE (7/16"-20UNF)				
Operating temperature	-40...100°C				
Global error at T 0...50°C	max. ± 1.0% FS				
Global error at T -10...80°C	max. ± 1.5 FS				
Response time	(0...99%) <5ms				
Material exposed to environment	AISI 316L Viton outer seal				
Enclosure rating	Packard: IP67 cable: IP54				

Codes	Description	Connector	Electric connection	IP
TD220030	EWPA 030	1/4 SAE MALE	2m cable	54
TD240030	EWPA 030	1/4 SAE MALE	2m cable with Packard connector	67
TD320030	EWPA 030	1/4 SAE FEMALE	2m cable	54
TD340030	EWPA 030	1/4 SAE FEMALE	2m cable with Packard connector	67
TD220050	EWPA 050	1/4 SAE MALE	2m cable	54
TD240050	EWPA 050	1/4 SAE MALE	2m cable with Packard connector	67
TD240150	EWPA 150	1/4 SAE MALE	1m cable	54
TD320050	EWPA 050	1/4 SAE FEMALE	2m cable	54
TD340050	EWPA 050	1/4 SAE FEMALE	2m cable with Packard connector	67
TD220007	EWPA 007	1/4 SAE MALE	2m cable	54
TD240007	EWPA 007	1/4 SAE MALE	2m cable with Packard connector	67
TD320007	EWPA 007	1/4 SAE FEMALE	2m cable	54
TD340007	EWPA 007	1/4 SAE FEMALE	2m cable with Packard connector	67
TD320010	EWPA 010	1/4 SAE FEMALE	2m cable	54
TD340010	EWPA 010	1/4 SAE FEMALE	2m cable with Packard connector	67

# EWPA 010 - 030 - 050

## Ratiometric pressure transducers



Codes	Descr.	Connector	Electric connection
<b>TD420010</b>	EWPA 010	1/4 SAE FEMALE	2m cable with Packard connector
<b>TD420030</b>	EWPA 030	1/4 SAE FEMALE	2m cable with Packard connector
<b>TD420050</b>	EWPA 050	1/4 SAE FEMALE	2m cable with Packard connector

### Applications

EWPA ratiometric pressure transducers are sensors capable of transmitting a signal by way of a voltage output to the measuring instruments with which they are connected. They offer accurate performance across a wide temperature range.

Technical data	EWPA 010	EWPA 030	EWPA 050
Operating range at 0.5...4.5V	0...10 bar (relative)	0...30 bar (relative)	0...50 bar (relative)
Output signal	3 wires 0.5...4.5V ratiometric	3 wires 0.5...4.5V ratiometric	3 wires 0.5...4.5V ratiometric
Overload	2.5 times pressure range	2.5 times pressure range	2.5 times pressure range
Power supply	5.0V $\pm$ 0.5V	5.0V $\pm$ 0.5V	5.0V $\pm$ 0.5V
Accuracy	$\pm$ 0.25% FS max (linearity, hysteresis, repeatability)	$\pm$ 0.25% FS max (linearity, hysteresis, repeatability)	$\pm$ 0.25% FS max (linearity, hysteresis, repeatability)
Energy consumption	max 8 mA	max 8 mA	max 8 mA
Load resistance	> 5K $\Omega$	> 5K $\Omega$	> 5K $\Omega$
Electrical connections	2 m cable with packard connector	2 m cable with packard connector	2 m cable with packard connector
Mechanical connections	female connector 1/4 SAE (7/16"-20UNF)	female connector 1/4 SAE (7/16"-20UNF)	female connector 1/4 SAE (7/16"-20UNF)
Operating temperature	-40...125°C	-40...125°C	-40...125°C
Global error at T 0...50°C	max. $\pm$ 1.0% FS	max. $\pm$ 1.0% FS	max. $\pm$ 1.0% FS
Global error at T -10...80°C	max. $\pm$ 1.5% FS	max. $\pm$ 1.5% FS	max. $\pm$ 1.5% FS
Response time	(0...99%) <5ms	(0...99%) <5ms	(0...99%) <5ms
Material exposed to environment	AISI 316L Viton outer seal	AISI 316L Viton outer seal	AISI 316L Viton outer seal
Enclosure rating	IP67	IP67	IP67



# EWHS 284 - 304 - 314

## Humidity probes

EWHS284



EWHS304



EWHS314



### Applications

Humidity probes of the EWHS284-304-314 series are intended for connection to humidity and humidity/temperature measuring instruments of superior dependability.

### Common features

Ambient humidity:	0..100% Rh
Air maximum speed:	20m/s
Polarity inversion protection:	diode

Technical data	EWHS284	EWHS304	EWHS314
Enclosure rating	IP54	IP65	IP65
Installation	Use the clip supplied with the probe	via 2 external slots	via 2 external slots
Electrical connections	PVC two core cable	Screw terminals	Screw terminals
Dimensions	103X25mm	80X80X52mm	80X80X52mm
Power supply	9...28V <sub>m</sub>	9...30V <sub>m</sub>	15...40V <sub>m</sub> or 12...28V <sub>-</sub>
Power consumption	20mA max	20mA max	<50mA max
Ambient temperature	-10...60°C	-40...60°C	-40...60°C (-40...140°F)
Humidity sensor	resistive	Hygromer* IN-1	Hygromer* IN-1
Humidity measurement range	15...90% RH	0..100% Rh	0..100% Rh
Output current of the humidity measurement	4 (0%)...20mA (100%)	4 (0%)...20mA (100%)	4 (0%)...20mA (100%)
Response time to constant conditions (63%) at 23°C	60 sec	typically 10 sec	typically 10 sec
Recovery time from saturation	360 sec	depending on air flow rate	depending on air flow rate
Temperature for storage	-20...70°C	-50...70°C	-50...70°C
Measurement accuracy of moisture (at 23°C)	±5% RH (in the range 15...90% RH)	±2% RH (in the range 10...95% RH) ±3% RH (for values <10% o >95% RH)	±2% RH
Number of wires per connection	2 (blue: power; brown: output)	2	4
Air filter	metal wire mesh	polyethylene	polyethylene
Temperature sensor	-	-	Pt100B
Temperature range	-	-	-40...60°C (-40...140°F)
Output current of the temperature measurement	-	-	4 (-30°C)...20mA (70°C)
Accuracy of temperature measurement (at 0°C and 23°C)	-	-	±0.3K
Compensation for available	-	with NTC	with Pt100B
Connection cable	1m or 3m	-	-
Maximum load	250 Ohm	0 Ohm at 6V <sub>=</sub> and 5V~ 500Ohm at 15V <sub>=</sub> and 12V~	0 Ohm at 6V <sub>=</sub> and 5V~ 500Ohm at 15V <sub>=</sub> and 12V~
Code	EWHS284 -1m cable: SN5PPN116I3M0 EWHS284-3 3m cable: SN5PPN131I3M0	EWHS304: SN5NPM1A6I4M0	EWHS314: SN0NPM1A6I4M0

Eliwell supplies a number of accessories to complete its line of instruments.

Temperature, humidity, pressure probes, power supply units, a wide range of transformers, on to memory devices like Unicard, to transfer parameters quickly and update controller firmware.

Devices designed to give the user all those instruments enabling greater work quality and productivity.





# DeviceManager

Controller configuration software



Codes	Descr.
<b>DMP1000002000</b>	CD DeviceManager
<b>DMI1001002000</b>	DMI 100-1 End User
<b>DMI1002002000</b>	DMI 100-2 Service
<b>DMI1003002000</b>	DMI 100-3 Manufacturer
<b>CO111127</b>	TTL Cable
<b>COLV000016200</b>	USB-A/A extension cable

## Applications

**DeviceManager** is a Windows software used to manage and for the first installation of Eliwell devices. The software can be used to create and save parameter mapping and transfer it to and from the controller with a few clicks.

**DeviceManager** needs the USB communication interface **DeviceManager Interface (DMI)** to communicate with controllers directly and is compatible with Unicaud USB and Multi Function Key to transfer maps, parameters and controller firmware updating. For information on compatibility and functions available with each controller family, please check the compatibility table in the restricted area of [www.eliwel.com](http://www.eliwel.com)

## Features

Graphic interface	Device alarm log management
Eliwell instrument parameter management	Firmware updating
Real-time variable monitoring and management	

## System requirements

Operating system:	<ul style="list-style-type: none"> <li>Windows XP Pro SP2, Italian and English.</li> <li>Windows XP Home SP2, Italian and English.</li> <li>Windows 2000 Professional SP4, Italian and English.</li> <li>Windows 7 Premium, Windows 7 Professional, Windows 7 Ultimate, versions 32bit, Italian-English</li> <li>Windows 10</li> </ul>
Software components required besides operating system:	<ul style="list-style-type: none"> <li>.NET Framework 2.0</li> </ul>
Minimum hardware:	<ul style="list-style-type: none"> <li>graphics resolution 1024x768</li> <li>700MHz CPU</li> <li>RAM 256MB</li> <li>HD 1GB</li> <li>Mouse or equivalent navigation system</li> </ul>
Space required on disk:	Approx. 500 MB for normal installation (2 languages, 50 models)

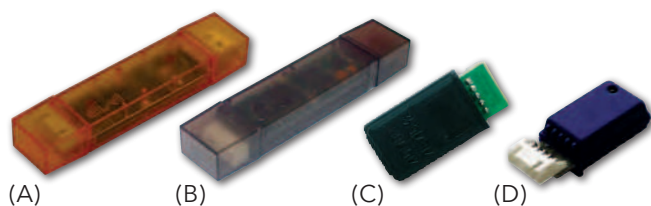
## DeviceManager

## Accessories

Code	Description	Details
CO111127	TTL cable	1m reinforced cable
COLV000016200	USB-A/A 2MT extension lead	Length 2m

# Unicard - USB Copy Card - Copy Card - Multi Function Key

Memory for fast configuration and updating of controllers



Codes	Descr.
CCA0BHT00UU00	(A) UNICARD USB/TTL
CCA0BUI02N000	(B) USB Copy Card
COLV000016200	Extension cable for USB Copy Card
CC0500A00M000	(C) Standard Copy Card
MFK100T000000	(D) Multi Function Key 100

## Applications

The new USB/TTL Unicard is a memory device for rapid parameter configuration/duplication, specifically designed for controllers in the IDPlus family.

By downloading the **DeviceManager** software from the [www.eliwell.com](http://www.eliwell.com) website, maps for instruments in the ID and IDPlus families can be read and written on the Unicard device without having to use other interfaces/licences.

Copy Card and USB Copy Card are memory devices for rapid Eliwell controller parameter configuration/duplication. Multi Function Key is used with **DeviceManager** to transfer maps, parameters and controller firmware updating.

## Common features

Unicard has a **standard USB port** for connection to the most widely-used power supply units and adapters on the market (mains-powered, machine-powered, battery-powered, etc.).

Updating device firmware/applications

Downloading parameter values from the instrument

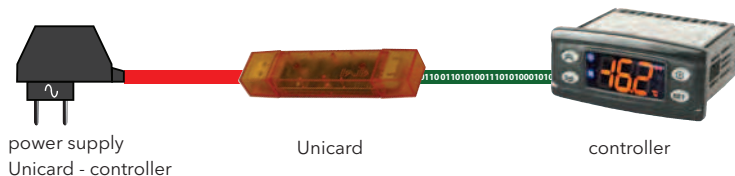
Downloading alarm log from the instrument

Updating device parameter values

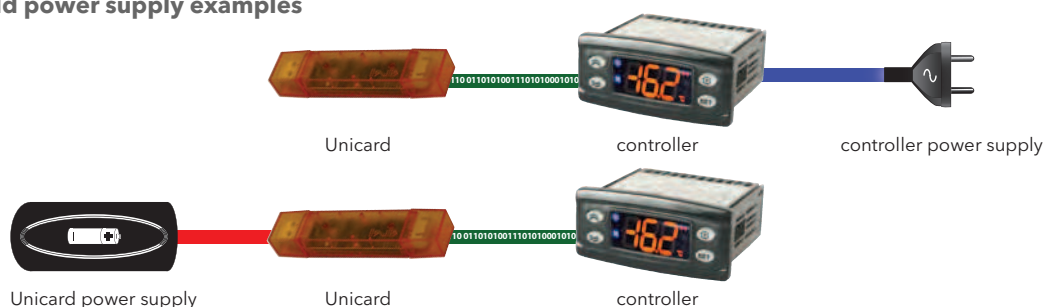
Use	Copy Card	Multi Function key	Unicard	USB Copy Card
IDPlus and ICPlus series	•	-	•	-
EW - EWPlus (EO LVD) series	•	-	•	-
IC series	•	-	-	-
ID series	•	-	-	-
EM300 Series	•	-	-	-
DR 4020 - DR4022	•	-	•	-
EW4820 - EW4822	•	-	-	-
EW7220 - EW7222	•	-	-	-
EWTSPPlus 990	•	-	-	-
EWRC 300 - EWRC 500 NT series	•	-	•	-
EWDR series	•	-	-	-
EWRC 5000 - 5010 - 5030 NT	•	-	•	-
IWC series	•	-	-	-
IWP 750	•	-	•	-
TelevisIn TelevisOut	•	-	• / F	-
RTN series	-	•	• / F	-
RTX - RTD series	-	•	• / F	-
ID 985/V	•	-	•	-
V800 Pulse EEV driver	-	-	-	•
V910 - XVD Step EEV Driver	-	•	• / F	-
EWCM 8000...9000 EO	-	-	-	• / F / L / D
EWCM 4000	•	•	-	-
EMPlus 600	-	-	•	-
EWBC 800 series	•	-	•	-
EWBC 1400	•	-	-	-

**KEY** •: Reading/writing maps parameters **F**: Updating Firmware **L**: Updating Interface Languages **D**: Download Data/Alarms

## Counter power supply examples



## Field power supply examples



## Drip protection - Plexiglass protection

Protections for 32x74 controllers



### Applications

These accessories can be used with devices in the ID, IC, IDPlus, EW, EWPlus series.

The drip protection, applied to the rear of the instrument, are a valid support in protecting electrical connectors against dripping liquid.

The plexiglass accessory, equipped with a surface easy to clean, is particularly suitable for use in outdoor environments or characterized by a high degree of dirt.

Code	Description	Details
ZZ000270	Drip protection	Pack of 20
ZZ000272	Plexiglass protection for controllers 32x74	Pack of 10

## EW BOX - INOX BOX - EWBOX NT

EW BOX - INOX BOX - EWBOX NT



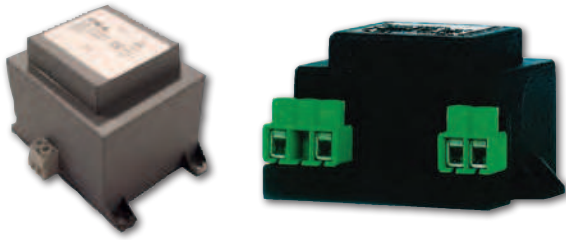
### Applications

EW Boxes and INOX Boxes are a range of plastic and stainless steel containers for the wall mounting of instruments designed for panel mounting.

Code	Description
SM000000	EW box without front panel
SM000005	Front panel without holes in ABS for EW box
SM000010	Front panel in ABS for EW vertical box with one hole for standard instrument 32x74 and two holes for switch
SM000013	Front panel in ABS for EW horizontal box with one hole for standard instrument 32x74 and one hole for switch
SM000020	Front panel in ABS for EW vertical box with two holes for standard instrument 32x74 and two holes for switch
SM000030	Front panel in ABS for EW horizontal box with two holes for standard instrument 32x74 and two holes for switch
SM111111	INOX Box with one hole for standard instrument 32x74
SM111112	INOX Box with two holes for standard instruments 32x74
RCX101B001000	PC-ABS box without holes
RCX1A1B001000	PC-ABS box with one hole for standard instrument 32x74
RCX1F1B001000	PC-ABS box with one hole for keyboards 68x138 (EWK1000 \ EVP3000)
	PC-ABS box with one hole for vertical KDT keyboards with rounded corners

# TF Transformers

## Transformers



### Applications

TF transformers are resin-coated in plastic containers, equipped with fixing tabs and screw terminals for wires  $\leq 2.5\text{mm}^2$ . Models with different power supply voltages are available.

Code	Models	Details
TF511113	TF 100...115...120V	115/12V 3VA - cert. UL
TF111145	TF 100...115...120V	115/12V 3VA
TF11115A	TF 100...115...120V	110-230/12-12-12 or 12 15VA
TF111115	TF 12...24...48V	24/12V 3VA
TF111162	TF 12...24...48V	24/12V 5.6VA
TF111173	TF 200...250V	230/12V 3VA
TF411200	TF 200...250V	230/12V - 5VA protected
TF411173	TF 200...250V	230/12V 3VA - approved VDE
TF411117	TF 200...250V	240/12V 3VA approved VDE
TF411205	TF 200...250V	230/12V - 6VA protected
TF411210	TF 200...250V	230/12V - 11VA protected
TF111202	TF 200...250V	230/24V 25VA
TF111205	TF 200...250V	230/24V 35VA



# OEM PRODUCTS

Eliwell supplies a wide range of products and solutions that stand out for high quality and reliability. This is the result of 25 years experience and know how acquired collaborating with the main commercial refrigeration equipment manufacturers.

For manufacturers (OEM) Eliwell supplies a series of standard and customisable products. These are based on consolidated, easy-to-adapt platforms.

Controllers for OEM are only supplied in industrial packaging, with electronic documentation and in minimum lots depending on product type.

OEM controller customisation may go from definition of a customised parameter map, to including a logo or creation of specific functions.

**The following pages list the main controller families for OEM where standard solutions are available for manufacturers. Would you kindly contact an Eliwell agent to assess the specific solution for your needs.**

## RB 200 series

Entry level solutions for refrigerated counters with compressor on board



- Installation compatible with K standard electromechanical thermostats
- Optional control knob
- Sealed relays

### Applications

The **RB 200** series is the Eliwell standard solution for entry level applications which do not require a display.

Thanks to its installation flexibility, **RB 200** is the best solution for manufacturers who are looking for an alternative solution to an electromechanical thermostat, with the advantages of electronic control and at the same time easy to install and use.

### Common features

Direct control of loads up to 20A

230Vac 50Hz non isolated power supply

Assembly with central M10 screw or 55mm/68mm bracket

Use of faston/rapid connectors

Docking Station for fast on-line programming

Model	Application	Notes
<b>RB 261</b>	Static units	20A SPST compressor relay
<b>RB 271</b>	Static units with defrost/alarm management	20A SPST compressor relay 8A SPDT defrost/alarm relay

## EWPlus series

Solutions with icon display



- Display with large digits and coloured icons, to understand operating status easily
- Simple, intuitive menus for fast learning
- Suited for applications with hydrocarbons
- ENEC/UL Certifications (check on the device label)

### Applications

The **EWPlus** series includes flexible, modern design controllers for plug-in refrigerated counters.

Thanks to platform versatility and a library of available functions, Eliwell is the best answer for manufacturers seeking custom solutions for energy saving requirements and simplification of production processes.

### Common features

Direct load management up to 2Hp and power supply of 230V~ or 115V~

Use of removable/faston/screw connectors for quick, versatile hookup

Unicard USB for customizing even small lots

Industrial packaging 60 pieces

Model	Application	Notes
<b>EWPlus 400</b>	Static units	1.5Hp Relay - back dimensions 36mm
<b>EWPlus 902</b>	Positive temperatures	Change-over contact relay
<b>EWPlus 961</b>	Static units	2 Hp power relay
<b>EWPlus 971</b>	Ventilated units	2Hp relays, 1 configurable output (defrost/fans/lights/alarm/stand-by)
<b>EWPlus 974</b>	Ventilated units	2Hp relays, 2 configurable outputs (defrost/fans/lights/alarm/stand-by)

# EWPlus EO series

High energy saving solutions



- Advanced control algorithms contribute to **energy saving up to 39%\*** with no modification of counter structure needed
- Self-adaptation of the energy saving functions based on the conditions of use of the refrigerator
- The product is **compatible with the new ecological refrigerants R290, R600**, in compliance with IEC 60079-15-2005
- Optimized temperature management when switching from night to day mode
- No supplementary sensors needed thanks to the **virtual door switch**
- Management of a 2nd compressor on the basis of a differentiated temperature threshold and a delay
- Advanced algorithms for defrost management on the 2nd evaporator
- Voluntary certification: ENEC/UL (check on device label)
- 4 easily selectable configurations** pre-loaded in a single controller
- Internal RTC** (depending on model)

## Applications

The **EWPlus EO** series controllers are designed to combine high energy savings with maximum ease of installation and use, easily applicable also replacing prior series controllers.

Thanks to platform versatility and a library of available functions, Eliwell can design custom solutions for energy saving requirements and simplification of production processes.

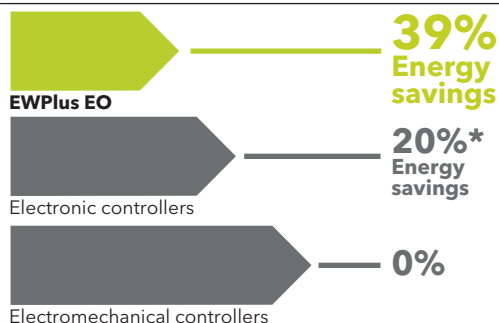
## Common features

Direct load management up to 2 Hp and power supply of 230V~ or 115V~  
Integrated protection of loads against voltage fluctuations controllable by parameter

Use of removable/faston/screw connectors for quick, versatile hookup  
Unicard USB for customizing even small lots  
Industrial packaging 60 pieces

Model	Application	Notes
<b>EWPlus 961 EO</b>	Static units	2Hp relay, 1 analogue input, 1 digital input
<b>EWPlus 971 EO</b>	Ventilated units	2 Hp relay, 2 configurable outputs (defrost/fans/lights/alarm/stand-by), 2 analogue inputs, 1 digital input
<b>EWPlus 974 EO</b>	Ventilated units	2Hp relay, 3 configurable outputs (defrost/fans/lights/alarm/stand-by) 2 analogue inputs, 1 digital input
<b>EWPlus 978 EO</b>	Ventilated units	2Hp relay, 4 configurable outputs (defrost/fans/lights/alarm/stand-by), 2 analogue inputs, 1 digital input
<b>EWPlus 974 EO Smart Control</b>	Ventilated units	2Hp relay, 3 configurable outputs (defrost/fans/lights/alarm/stand-by) 2 analogue inputs, 1 digital input
<b>EWPlus 978 EO Smart Control</b>	Ventilated units	2Hp relay, 4 configurable outputs (defrost/fans/lights/alarm/stand-by), 2 analogue inputs, 1 digital input

## LOW ENERGY CONSUMPTION



## HIGH ENERGY CONSUMPTION

\*energy saving certified by the independent laboratory INTERTEK



## Longer-lasting components

- Protection of compressor against voltage fluctuations thanks to incorporated low and high voltage detector LVD (patent in the registration process).
- Advanced control algorithms for long-lasting performance with no need to modify counter structure.



**EWPlus EO**

# EWPlus 961 - 971 EO Dispenser

Solutions for refrigerated dispensers / beer taps



- Electronic temperature control
- Electronic control of ice level with single and double sensor
- Ice sensor sensitivity configurable by parameter
- Compatible with hydrocarbon applications (R290, R600a)

## Applications

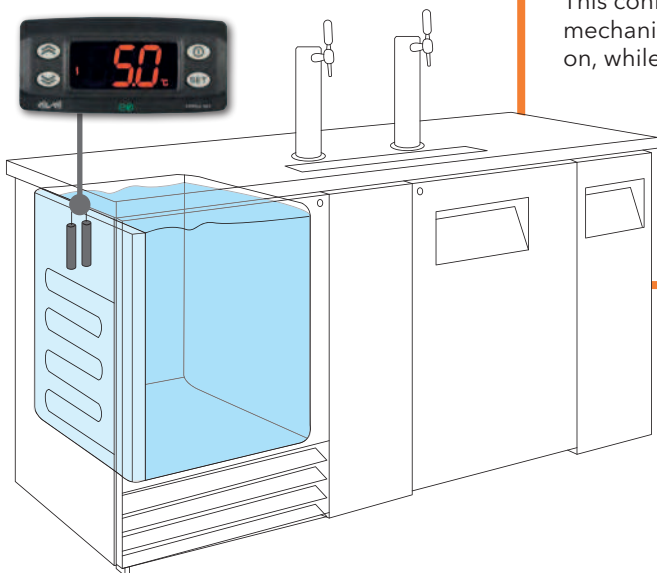
**EWPlus EO Dispenser** is a controller designed to offer a compact, efficient solution to control the refrigeration of drink dispensers, such as beer and soft drinks. Thanks to platform versatility and a library of available functions, Eliwell has integrated control of temperature and ice level into a single controller that can be parametrized from the keyboard to adapt to the various application configurations easily.

## Common features

Configurable inputs for temperature and single or double ice level sensor  
230V~ power supply

Unicard USB for customizing even small lots  
Industrial packaging 60 pieces

Model	Application	Notes
EWPlus 961 EO Dispenser	Dispenser	Ice level control
EWPlus 971 EO Dispenser	Dispenser	Water pump control



### Energy saving

The double ice sensor configuration gives users considerable energy and reliability benefits.

This configurations allows you to set a hysteresis on the formation of ice mechanically decreasing the number of times the compressor comes on, while reducing the need for maintenance and increasing duration.

## EWPlus EO Dispenser



# EWPlus 978

Solutions for double evaporator and double compressor



- Solution for combined counters, double evaporator or double compressor
- Compact solution for control of small mono-blocks
- Suited for applications with hydrocarbons

## Applications

The **EWPlus 978** series controllers are designed to combine high energy savings with maximum ease of installation and use, easily applicable also replacing prior series controllers.

Thanks to platform versatility and a library of available functions, Eliwell can design custom solutions for energy saving requirements and simplification of production processes.

## Common features

4 configurable output relays for double compressor control and single or double defrost

Power supply 12V

Unicard USB for customizing even small lots

Model	Application	Notes
EWPlus 978	Combined counters Monoblocs	Single or double compressor Single or double evaporator



## Application examples

In a combined cold counter, **EWPlus 978** can manage the double compressor with:

- delayed ignition
  - ignition based on differentiated temperature threshold and delay
- In this case, the controller can manage the set sequence or rotation between two compressors.

It can also manage double defrosting:

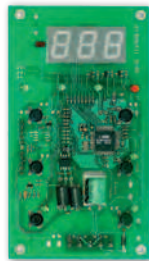
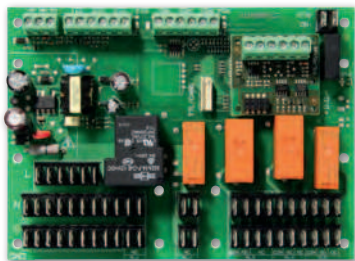
- delayed
- with independent defrost end temperatures
- with common defrost time-out

**EWPlus 978**



# IWP 750

## Solutions for mono-blocks



- Specific solution for mono-blocks with keyboard to be panel mounted with custom polycarbonate
- Faston type connection for all loads and screw for all signals
- Keyboard can be set for a distance of up to 100m
- Board for RS-485 connectivity optional plug-in

### Applications

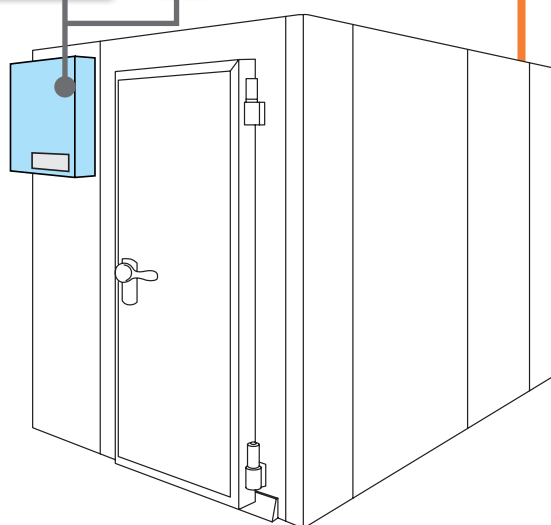
**IWP 750** controllers are designed to combine high energy savings with maximum ease of installation and use, easily applicable also replacing prior series controllers. Thanks to platform versatility the product can be configured in various relay combinations to adapt to the mono-block better.

### Common features

Power boards and bare keyboard, for panel mounting  
3 temperature probes and 3 configurable digital inputs  
5 configurable relay outputs

Compressor control up to 2Hp  
SMPS 100...240V~ power supply

Model	Application	Notes
IWP 750	Monoblocs	Power boards with 5 relays
IWK Open		Bare keyboard from panel
		Can be set for a distance of up to 100m



### Environmental sustainability

The IWP devices offer a wide range of machine configuration options, predominantly thanks to the vast array of relays, available with power levels of up to 2Hp and used to control two separate compressors directly.

### Easy to use

The minimised wiring with on-board power relay, quick connections, simple, intuitive remote user interface and support tools allow for straightforward customisation, even on the production line. The IWK remote keypad is available in reduced depth format so that its can even be used in areas where installation conditions are particularly limited.

## IWP 750 - IWK



# IWC 700 series

Controllers for professional applications / catering



- Solutions for professional counters, normally used to store fresh and frozen foods
- Can be connected to remote ECHO display based on model
- Models managing double temperature Set points available

## Applications

**IWC 720-730** controllers are suitable for applications on ventilated refrigeration units for normal or low temperatures

**IWC750 Twin** is designed specifically to control dual independent temperature refrigeration systems, normally used for the preservation of fresh and frozen foods.

**IWC730/E Twin** with two set points is ideal for catering applications, and can be connected to the Echo remote display.

## Common features

<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, polycarbonate display window, switch keys with adhesive polycarbonate film	<b>Dimensions</b>	front panel 180x37mm, depth 69mm
		<b>Installation</b>	panel mounting with 150x31mm (+0.2/-0.1mm) drilling template

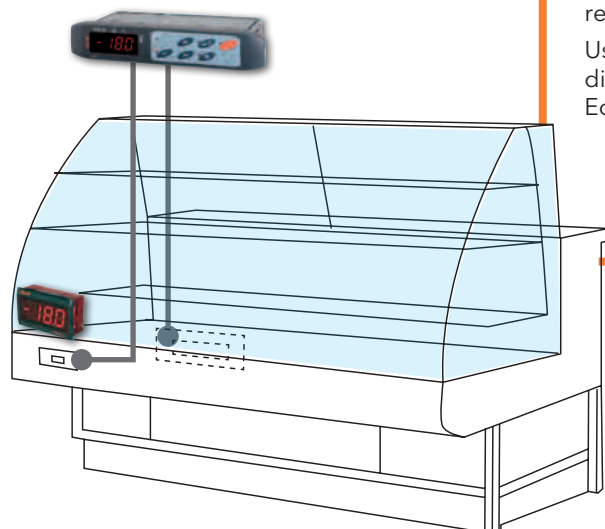
Model	Application	Notes
<b>IWC 720</b>	ventilated refrigeration unit (medium or low temperature)	2 configurable relays
<b>IWC 730</b>	ventilated refrigeration unit (medium or low temperature)	3 configurable relays
<b>IWC 730/E TWIN</b>	catering applications	3 configurable relays can be connected to Echo display
<b>IWC 740</b>	ventilated refrigeration unit (medium or low temperature)	4 configurable relays can be connected to Televis monitoring system
<b>IWC 740 COMMON LINE</b>	refrigerators for the preservation and processing of foods/pastry	4 configurable relays
<b>IWC 750</b>	ventilated refrigeration unit (medium or low temperature)	5 configurable relays can be connected to Televis monitoring system
<b>IWC 750 COMMON LINE</b>	refrigerators for the preservation and processing of foods/pastry	5 configurable relays
<b>IWC 750 TWIN</b>	dual independent temperature refrigerators	5 configurable relays management of double temperature set points



## Application examples

In a catering counter, the **IWC 750 TWIN** controller can be set with two separate preservation temperatures, thanks to its double integrated regulator.

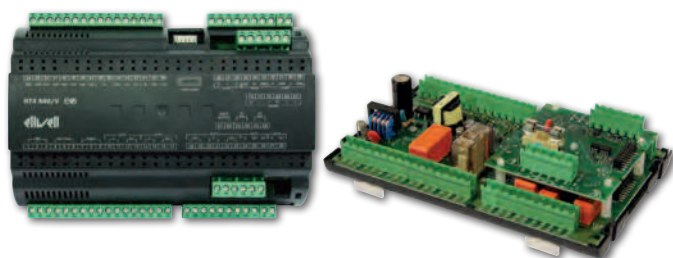
Using the **IWC 730/E TWIN** model, temperatures can also be displayed on the front of the refrigeration counter, thanks to the remote Echo display.



**IWC 700 series**

# RTX600/V - RTD600/V series

Controllers for supermarket counters



- Specific solutions for high efficiency remote cabinets
- Integrated control of all refrigeration counter functions
- Energy savings with electronic valve control
- Plug-n-play LINK<sup>2</sup> synchronisation for island and remote cabinets

## Applications

**RTX600/V** and **RTD600/V** are electronic controllers for remote high efficiency refrigeration cabinets with pulse electronic valve control.

They combine optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room Set point modulation, with automatic identification of open/closed operational time bands.

Configuration has been simplified by introducing preset profiles for 8 separate applications, which can easily be selected via the **KDEPlus** and **KDWPlus** user terminals.

## Features

Power boards in plastic boxes (RTX), or mounted on DIN Rail (RTD)

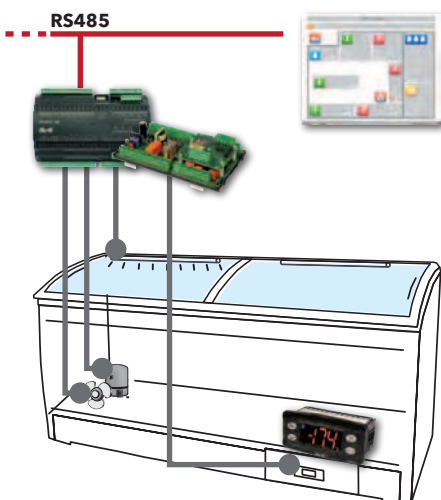
AC and DC pulse electronic valve control

3 temperature probes and 3 configurable digital inputs

SMPS 100...240V~ power supply

6 configurable relay outputs

Model	Application	Notes
RTX600/V	Supermarket counters	Version in plastic box
RTD600/V	Supermarket counters	Open version mounted on DIN bar and vertical removable terminals



## Application examples

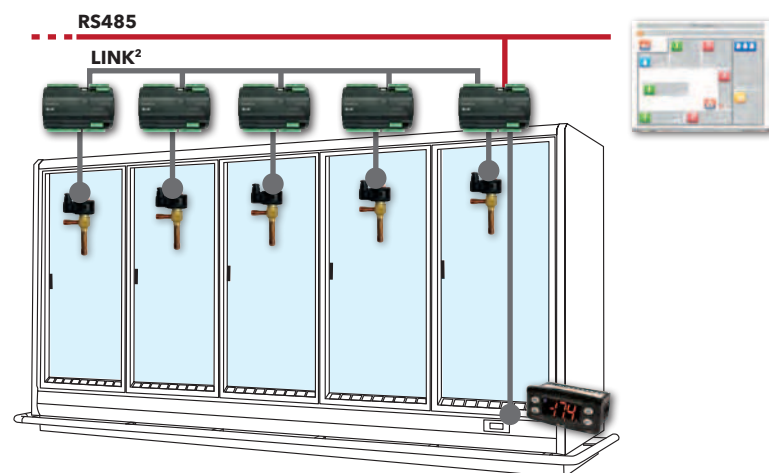
RTX600/V and RTD600/V can be used for different applications.

In a **plug-in counter**, for example, RTX600/V or RTD600/V are used to control compressor, lights and fan connected to the monitoring system via RS-485 network.

In a **remote cabinet**, RTX600/V or RTD600/V can be used for high efficiency control of the electronic pulse expansion valve; several instruments connected via LINK<sup>2</sup> network for efficient synchronisation of defrosting and lights.

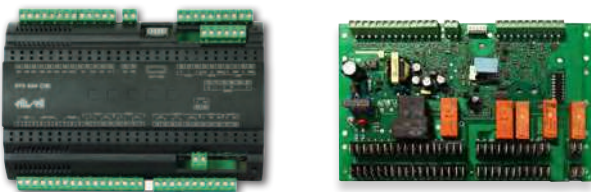
The system can be monitored via RS-485 network.

# RTX600/V - RTD600/V



# RTX600 - RTN600 series

Controllers for supermarket counters



- Compact (10 DIN) unit and direct control of loads up to 2HP
- Compressor and fan load protection
- Optimised defrosting (Intelligent Electric defrosting, advanced clock and temperature management)
- Quick and easy to install and configure

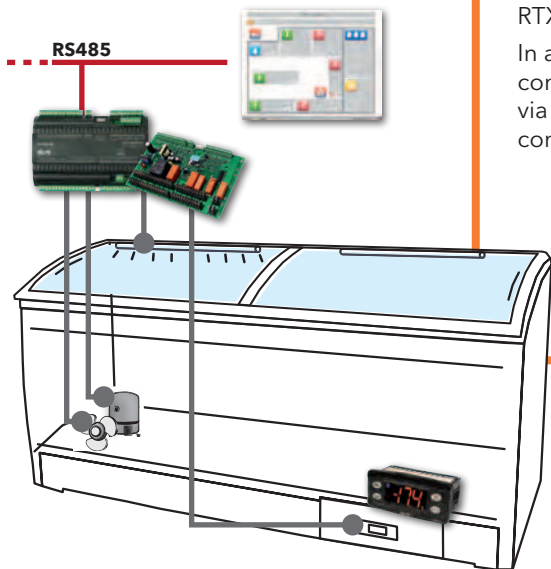
## Applications

Electronic controllers **RTX600** and **RTN600** have energy-saving functions for use in supermarkets and commercial food distribution and storage applications. RTX600 and RTN600 combine optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room set point modulation, with automatic identification of open/closed operational time bands. Configuration has been simplified by introducing preset profiles for 8 separate applications, which can easily be selected via the **KDEPlus** and **KDWPlus** user terminals. The remote **ECPlus** display can be used to view displayed date from up to 100m away, differentiating it from the data displayed on KDEPlus and KDWPlus terminals.

## Features

Power boards in plastic boxes (RTX), or bare board (RTN)	6 configurable outputs with direct control of loads up to 2HP
3 temperature probes and 3 configurable digital inputs	SMPS 100...240V~ power supply

Model	Application	Notes
RTX600	Supermarket counters	Version in plastic box
RTN600	Supermarket counters	Bare board for panel-mounting



**Application examples**  
RTX600 and RTN600 can be used for different applications. In a **plug-in counter**, for example, RTX600 or RTN600 are used to control compressor, lights and fan connected to the monitoring system via RS-485 network. With RTN600 you need the optional RS-485 connectivity board.

RTX600 - RTN600

# RTN400 - RTN400 SM series

Controllers for plug-in supermarket counters



- Single or dual compressor control
- Advanced resistance defrost
- Evaporator fan control in Night&Day mode
- Fixed duty-cycle frame heater control
- Pre-programmed, easy-to-select configurations.
- Adaptive control for variable speed compressors

## Applications

**RTN400** are compact controllers for plug-in and remote cabinets with thermostatic valve control.

RTN400 controllers are compact and stand out for the high-performance and high flexibility they offer through energy-saving algorithms and the direct control of compressor and fans.

**RTN400 SM** provides energy savings in supermarkets and commercial food distribution and storage applications; it is suitable for the control of EMBRACO VNEU and SECOP CCD variable speed compressors, obtaining maximum performance through a control algorithm with self-learning of operating parameters. It also combines optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room set point modulation, with automatic identification of open/closed operational time bands.

**RTN400** controllers can be interfaced with **KDEPlus** and **KDWPlus** keyboards and with the **ECPlus** display module.

## Features

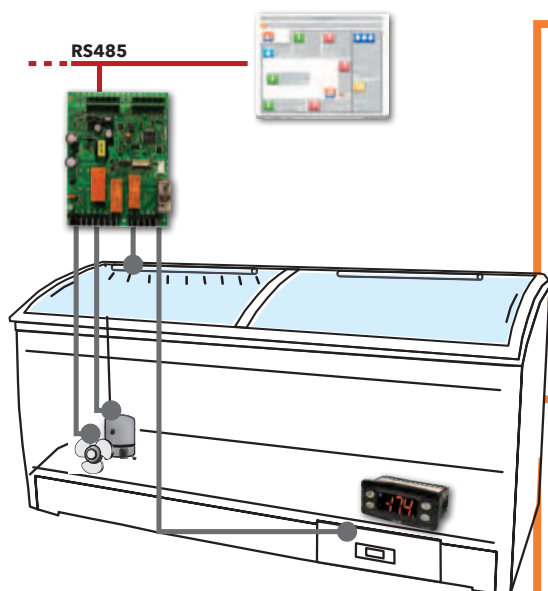
Power boards in compact bare box (121x92mm)

4 configurable output relays with direct control of loads up to 2HP

5 temperature probes and 1 configurable digital input

SMPS 100...240V~ power supply

Model	Application	Notes
<b>RTN400</b>	Supermarket counters	Bare board with fast power connections, faston type
<b>RTN400 SM</b>	Supermarket counters with variable speed compressor	Bare board with fast power connections, faston type



### Application examples

In a **plug-in counter**, RTN400 is used to control compressor, lights and fans connected to a monitoring system via RS-485 network (the optional board is needed for RS-485 connectivity).

**RTN400**



### Plug-in R290 tank with variable speed compressor

RTN 400 SM can control all aspects of the application, including compressor, fans, lights and defrosting.

The innovative self-learning algorithm for control of variable speed compressors significantly reduces the time required for commissioning, ensuring maximum energy efficiency in all conditions and a longer motor life.

The advantages of this type of application are:

- Smaller compressor
- Reduced refrigerant charge
- Continuous control of cooling capacity
- Fewer compressor start-ups and consequently longer compressor life

**RTN400 SM**

# KD - ECPlus series user interfaces

## User interfaces for RT family



- **ECPlus, KDEPlus, KDWPlus:** compatible with controllers in the RT series (RTX, RTD, RTN)
- **KDT:** keyboard with touch technology, compatible with controllers in the RT series (RTX, RTD, RTN)
- **KDT:** customisable for OEM solutions

### Applications

**KDEPlus** and **KDWPlus** are user terminals for integral display and programming of controllers for remote and plug-in refrigerated cabinets.

Each power board can be connected to a single KDWPlus keyboard and, if required, to an ECPlus module for remote display by means of the special connector. The remote **ECPlus** display can be used to view displayed date from up to 100m away, differentiating it from the data displayed on KDEPlus and KDWPlus terminals.

The **KDT** keyboards, made using backlit screen-printed plexiglass, can be used to carry out all procedures currently offered by membrane and standard 32x74 keyboards, but with a perfectly smooth and easy to clean surface, combined with a modern look and the natural feeling of touch-sensitive keys with light and sound feedback. The special construction of the keyboards, with its glued-on installation option, offers reduced installation times, precise positioning and a protection rating of IP65. The simplicity of the KDT keyboards stems from Eliwell's experience in studying solutions for design and installation simplification.

Technical data	Horizontal KDT	Vertical KDT	KDEPlus	KDWPlus	ECPlus
Casing:	Polymethylmethacrylate (PMMA) front panel	Polymethylmethacrylate (PMMA) front panel	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	Body and window in polycarbonate
Dimensions:	front panel 180x40mm, depth 1.5mm	front panel 87x135mm, depth 1.5mm	front panel 74x32 mm, depth 30 mm	front panel 180x37 mm, depth 23mm	front panel 48x28.6 mm, depth 15mm
Installation:	panel mounting, can be set for a distance of up to 100m, with 150x31mm drilling template	panel mounting, can be set for a distance of up to 100m, with 67x120mm drilling template	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel-mounting, with 150x31 mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	3 digits+sign, 8 coloured icons colours can selected from: amber/red/blue/white 6 capacitive touch keys	3 digits+sign, 8 coloured icons colours can selected from: amber/red/blue/white 6 capacitive touch keys	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:			see power board	see power board	see power board
Connections:			<ul style="list-style-type: none"> <li>• screw terminals for low voltage connection</li> <li>• JST for ECPlus display connection</li> </ul>	<ul style="list-style-type: none"> <li>• screw terminals for low voltage connection</li> <li>• JST for ECPlus display connection</li> </ul>	<ul style="list-style-type: none"> <li>• screw terminals for low voltage connection</li> <li>• JST for KDWPlus or KDEPlus user terminal connection</li> </ul>
Power supply:			from power board	from power board	from power board
Power consumption:			-	-	-
Ambient operating temperature:			-5...+55°C	-5...+55°C	-5...+55°C
Ambient storage temperature:			-30...+85°C	-30...+85°C	-30...+85°C
Ambient operation and storage humidity:			10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

# EWBC 800 series - KDT BC

Solutions for blast chillers



- display with LEDs and icons and 8 self-explanatory easy-to-use capacitive touch keys (KDT BC) or integral touch colour graphic interface (TGI)
- main blast chilling functions selectable directly from touch key
- 3-wire base-keypad connection suitable also for mounting to blast chiller doors.
- positive/negative, timer/core probe and hard/soft chill control
- UV management (sterilisation with germicidal lamp), core probe extraction and door frame heater.
- removable terminals and quick connections
- Device Manager configuration tool
- controlled temperature food defrosting management (EWBC 875 only)
- low temperature cooking management (EWBC 875 only)
- HACCP with recording of the 10 most recent events (EWBC 875 only)

## Applications

Blast chillers are used for rapid cooling of hot foods from their cooking temperature to a core temperature of +3°C in less than 90 minutes, so that the product can then be stored in a freezer or refrigerator.

This treatment extends the average shelf-life of the food product, because cold inhibits the growth of bacteria (bacteria multiply more quickly between +8°C and +68°C).

**EWBC 800**, the controllers developed by Eliwell specifically for blast chillers, are designed in a split format so as to ensure maximum flexibility of installation.

EWBC 800s are used in conjunction with the **KDT BC** user interface, consisting of 8 touch capacitive keys and LED display, which is well suited to stylistic customisation.

## Technical data

	EWBC 854	EWBC 875
Format:	121 x 92 mm	195 x 124 mm
Display:	<ul style="list-style-type: none"> <li>• Via LINK<sup>2</sup>: with KDT BC touch keypad (3-digit LED-type with 8 icons)</li> <li>• Via RS485: via TGI full touch graphic interface 3.5", 4.3" or 7"</li> </ul>	<ul style="list-style-type: none"> <li>• Via LINK<sup>2</sup>: with KDT BC touch keypad (3-digit LED-type with 8 icons)</li> <li>• Via RS485: via TGI full touch graphic interface 3.5", 4.3" or 7"</li> </ul>
Power supply:	SMPS 100-240V~ ±10% 50/60Hz	SMPS 100-240V~ ±10% 50/60Hz
Digital outputs:	4 outputs: 1x 2HP, 1x 1HP, 2x 8(4)A	6 outputs: 1x 2HP, 2x 1HP, 3x 8(4)A
Analogue outputs:	1x Open Collector	1x Open Collector + 1x DAC
Digital inputs:	1 x multi-function, voltage-free D.I.	3 x multi-function, voltage-free D.I.
Analogue inputs:	4x configurable NTC/PTC/PT1000/D.I.	5x configurable NTC/PTC/PT1000/D.I.
Connections:	TTL for connection to Copy Card and Unicard	TTL for connection to Copy Card and Unicard



# EWBC 1400

Solutions for blast chillers



- Compact and economical controller for entry level applications, with LED display and 4 buttons
- positive/negative, timer/core probe chill control
- UV management (sterilisation with germicidal lamp), core probe extraction and defrost on shutdown
- removable terminals and quick connections
- Device Manager configuration tool

## Applications

Blast chillers are used for rapid cooling of hot foods from their cooking temperature to a core temperature of +3°C in less than 90 minutes, so that the product can then be stored in a freezer or refrigerator.  
This treatment extends the average shelf-life of the food product, because cold inhibits the growth of bacteria (bacteria multiply more quickly between +8°C and +68°C).  
The **EWBC 1400** blast chiller controller consists of an open frame circuit board providing a machine control solution available at a manageable cost. On request, Eliwell can supply a standard version of the external polycarbonate, which is easy to customise to individual requirements.

Technical data	EWBC 1400
Format:	95 x 105 mm
Display:	3-digit LED
Power supply:	230V~ ±15% 50/60Hz
Digital outputs:	4 configurable outputs: 4x 5A 250V
Digital inputs:	1 x voltage-free input with contact closure to ground
Analogue inputs:	4 inputs: 1 x non-configurable input set as core probe needle 2 x configurable input, NTC 103AT / PTC KTY 83-121 1 x configurable input, NTC 103AT / PTC KTY 83-121 / D.I.
Connections:	TTL for connection to Copy Card

# FREE Way

Programmable platform



FREE Smart



FREE Panel



FREE Advance



FREE Evolution



## Applications

**FREE Way:** the new Eliwell approach to programmability, giving customers the tools to find their own faster and more effective solutions.

**FREE Way** is the programmable platform developed by Eliwell, which consists of the software Suite **FREE Studio**, **FREE Smart**, **FREE Panel**, **FREE Advance** and **FREE Evolution**.

The **FREE Studio** software suite, simple and flexible, is compatible with the 5 standard programming languages (IEC 61131-3), and is structured to manage a whole range of controllers of different sizes and with varying levels of complexity, in order to satisfy all the customer's system customisation requirements.

# FREE Studio

Programmable platform



## FREE Studio features

- A single software suite for quick and easy programming
- Advanced debug and simulation options plus complete and effective on-line Help.
- Protection of applications and different use levels
- Application revision log
- Customisable interface

## Applications

The **FREE Studio** software suite is compatible with all 5 standard programming languages (IEC61131-3).

Each project can be made up of several programmes.

The developer can use one or more languages in the same project.

Each new program actually offers the choice of 5 programming languages, 2 text-based and 3 graphics-based.



**Structured Text**



**Ladder**



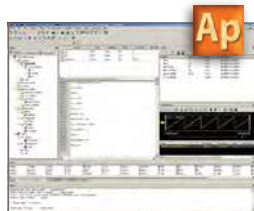
**Sequential Function Chart**



**Functional Block Diagram**



**Instruction List**



## Application

Component for software developers to allow them to develop and modify applications in the 5 standard programming languages.



## Device

Component dedicated to less skilled users for the management of parameters, application downloads, field tests, etc.



## Connection

Configuration component for both field and open networks, for integration with other systems.



## User Interface

Component for developing and customising the graphic user interface.



## Simulation

Component for simulating the application on a PC.

## FREE Smart

### Programmable platform



It is the smallest programmable controller on the market, combining high performance and efficiency in very compact dimensions.

In the 32x74 mm dual format for panel mounting and DIN rail mount version, Smart allows easy programming, significant savings in wiring time and reduction of the cabinets dimensions up to 50%.

Thanks to the complete autonomy and configurability of all inputs and outputs, Smart is perfectly adaptable to any system.



#### FREE Smart features

- User interface with configurable keys.
- Available in three formats, in 100...240V~ and 12...24V~/ 24VC versions:
  - **FREE Smart SMP** for panel mounting (32x74mm) with LED display
  - **FREE Smart SMD 4 DIN** with led display, **FREE Smart SMC 4 DIN** without display
- Can be connected via RS-485, Modbus RTU or via standard Eliwell peripherals and user interfaces

## FREE Panel

### Programmable platform



It combines in a single device comprising a programmable user terminal with graphics and a controller with advanced connectivity, for remote resource and distributed control management. Used in combination with other FREE Smart and Evolution controllers, it ensures high performance in terms of memory, connectivity and user interface, easy programmability, maintenance and service.



#### FREE Panel Features

- **FREE Panel EVP** system controller, with gateway functions and backlit LCD graphic display; can be panel or wall-mounted
- **FREE Panel AVP** zone controller with backlit color display and resistive touch interface, available for wall mounting
- High connectivity: can be integrated in industrial systems and BMS
- Connects to standard Eliwell and third-party peripheral devices

## FREE Advance

Programmable platform



**FREE Advance** models (**AVD** with display, **AVC** without display) are available in the 8 DIN rail-mounted version, with removable screw terminals to make installation easier and faster. Each AVD or AVC can be expanded by CANbus (field) up to 12 expansion modules and 2 terminals (EVK). By CANbus (network) it is also possible to inter-connect up to 10 controllers. Up to 127 devices can be managed with the Modbus Master, by RS485.



### FREE Advance features

- Fully customizable graphic user interface
- Available in the 8 DIN formats **FREE Advance AVD** with backlit graphic LCD, **FREE Advance AVC** without display
- Superior connectivity as standard for integration in industrial systems and BMS without optional modules
- Connects to standard Eliwell peripheral devices (including FREE Smart) and third party devices, with up to a maximum of 10 controllers. Up to 127 devices can be managed with the Modbus Master, by RS485.

## FREE Evolution

Programmable platform



It represents the top range of programmable controllers, designed to handle the most demanding applications in the HVAC/R field; available in format suitable for 8 DIN rail mounting, with disconnectable screw terminals for quick and easy installation.



### FREE Evolution features

- Fully customizable graphic user interface
- Available in the 8 DIN formats **FREE Evolution EVD** with backlit graphic LCD, **FREE Evolution EVC** without display
- High connectivity: integrates into industrial systems and BMS using dedicated plug-in modules
- Connects to standard Eliwell peripheral devices (including FREE Smart) and third party devices



# APPENDIX





# Temperature Probe Tables

## Appendix

NTC probe table

Ambient temperature	Resistance (kOhm)
(°C)	103AT
-50	329.50
-45	247.70
-40	188.50
-35	144.10
-30	111.30
-25	86.43
-20	47.77
-15	53.41
-10	42.47
-5	33.90
0	27.28
5	22.05
10	17.96
15	14.69
20	12.09
25	10.00
30	8.313
35	6.940
40	5.827
45	4.911
50	4.160
55	3.536
60	3.020
65	2.588
70	2.228
75	1.924
80	1.668
85	1.451
90	1.266
95	1.108
100	0.9731
105	0.8572
110	0.7576

NTC probe table - Extended range

Ambient temperature	Resistance (kOhm)		
(°C)	Minimum	Standard	Maximum
-40	321.654	333.562	345.877
-35	233.032	241.072	249.364
-30	170.611	176.082	181.710
-25	126.176	129.925	133.773
-20	94.221	96.807	99.454
-15	71.015	72.809	74.640
-10	54.004	55.253	56.525
-5	41.419	42.292	43.179
0	32.028	32.640	33.260
5	24.962	25.391	25.824
10	19.601	19.902	20.205
15	15.504	15.713	15.924
20	12.348	12.493	12.639
25	9.900	10.000	10.100
30	7.962	8.055	8.150
35	6.444	6.530	6.616
40	5.247	5.325	5.403
45	4.296	4.367	4.438
50	3.537	3.601	3.665
55	2.928	2.985	3.042
60	2.436	2.487	2.538
65	2.037	2.082	2.127
70	1.711	1.751	1.792
75	1.444	1.480	1.516
80	1.224	1.256	1.288
85	1.042	1.070	1.099
90	0.890	0.916	0.941
95	0.764	0.786	0.810
100	0.658	0.678	0.699
105	0.569	0.587	0.605
110	0.493	0.510	0.526
115	0.429	0.444	0.459
120	0.375	0.388	0.402
125	0.328	0.340	0.353
130	0.289	0.299	0.310
135	0.254	0.264	0.274
140	0.224	0.234	0.243
145	0.199	0.207	0.215
150	0.177	0.184	0.192

PTC probe table

Ambient temperature			KTY81-121 / KTY82-121			
Temperature coefficient						
(°C)	(°F)	(%/K)	Resistance (Ohm)			Error - temperature
			Minimum	Standard	Maximum	
-55	-67	0.99	471	485	500	±3.02
-50	-58	0.98	495	510	524	±2.92
-40	-40	0.96	547	562	576	±2.74
-30	-22	0.93	603	617	632	±2.55
-20	-4	0.91	662	677	691	±2.35
-10	14	0.88	726	740	754	±2.14
0	32	0.85	794	807	820	±1.91
10	50	0.83	865	877	889	±1.67
20	68	0.80	941	951	962	±1.41
25	77	0.79	980	990	1000	±1.27
30	86	0.78	1018	1029	1041	±1.39
40	104	0.75	1097	1111	1125	±1.64
50	122	0.73	1180	1196	1213	±1.91
60	140	0.71	1266	1286	1305	±2.19
70	158	0.69	1355	1378	1402	±2.49
80	176	0.67	1447	1475	1502	±2.80
90	194	0.65	1543	1575	1607	±3.12
100	212	0.63	1642	1679	1716	±3.46
110	230	0.61	1745	1786	1828	±3.83
120	248	0.58	1849	1896	1943	±4.33
125	257	0.55	1900	1950	2000	±4.66
130	266	0.52	1950	2003	2056	±5.07
140	284	0.45	2044	2103	1462	±6.28
150	302	0.35	2124	2189	2254	±8.55

# Temperature Probe Tables

## Appendix

Pt100 probe table

Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance
(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)
-200	18.52	20	107.79	230	186.84	440	260.78	650	329.64
-190	22.83	30	111.67	240	190.47	450	264.18	660	332.79
-180	27.10	40	115.54	250	194.10	460	267.56	670	335.93
-170	31.34	50	119.40	260	197.71	470	270.93	680	339.06
-160	35.54	60	123.24	270	201.31	480	274.29	690	342.18
-150	39.72	70	127.08	280	204.90	490	277.64	700	345.28
-140	43.88	80	130.90	290	208.48	500	280.98	710	348.38
-130	48.00	90	134.71	300	212.05	510	284.30	720	351.46
-120	52.11	100	138.51	310	215.61	520	287.62	730	354.53
-110	56.19	110	142.29	320	219.15	530	290.92	740	357.59
-100	60.26	120	146.07	330	222.68	540	294.21	750	360.64
-90	64.30	130	149.83	340	226.21	550	297.49	760	353.67
-80	68.33	140	153.58	350	229.72	560	300.75	770	366.70
-70	72.33	150	157.33	360	233.21	570	304.01	780	369.71
-60	76.33	160	161.05	370	236.70	580	307.25	790	372.71
-50	80.31	170	164.77	380	240.18	590	310.49	800	375.70
-40	84.27	180	168.48	390	243.64	600	313.71	810	378.68
-30	88.22	190	172.17	400	247.09	610	316.92	820	381.65
-20	92.16	200	175.86	410	250.53	620	320.12	830	384.60
-10	96.09	210	179.53	420	253.96	630	323.30	840	387.55
0	100.00	220	183.19	430	257.38	640	326.48	850	390.48
10	103.90								

Pt1000 probe table

Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance	Ambient temp.	Resistance
(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)	(°C)	(Ohm)
-200	185.281	20	1077.936	230	1868.465	440	2608.235	650	3297.246
-190	228.327	30	1116.731	240	1904.843	450	2642.196	660	3328.790
-180	271.029	40	1155.411	250	1941.106	460	2676.042	670	3360.219
-170	313.408	50	1193.976	260	1977.254	470	2709.773	680	3391.533
-160	355.484	60	1232.426	270	2013.287	480	2743.389	690	3422.731
-150	397.277	70	1270.961	280	2049.205	490	2776.889	700	3453.815
-140	432.903	80	1308.981	290	2085.007	500	2810.275	710	3484.783
-130	480.081	90	1347.085	300	2120.695	510	2843.545	720	3515.637
-120	521.127	100	1385.075	310	2156.267	520	2876.701	730	3546.375
-110	561.954	110	1422.949	320	2191.725	530	2909.741	740	3576.998
-100	602.578	120	1460.709	330	2227.067	540	2942.666	750	3607.506
-90	643.012	130	1498.353	340	2262.294	550	2975.476	760	3637.899
-80	683.267	140	1535.882	350	2297.406	560	3008.171	770	3668.177
-70	723.355	150	1573.296	360	2332.403	570	3040.751	780	3698.340
-60	763.286	160	1610.595	370	2367.285	580	3073.216	790	3728.387
-50	903.068	170	1647.779	380	2402.052	590	3105.565	800	3758.320
-40	842.71	180	1684.848	390	2436.703	600	3137.800	810	3788.137
-30	882.218	190	1721.801	400	2471.240	610	3169.919	820	3917.840
-20	921.6	200	1758.640	410	2505.661	620	3201.924	830	3847.427
-10	960.859	210	1795.363	420	2539.968	630	3233.813	840	3876.899
0	1000	220	1831.972	430	2574.159	640	3265.587	850	3906.256
10	1039.025								

# Temperature Probe Tables

## Appendix

TCJ probe table

Temp.	0°C	-10°C	-20°C	-30°C	-40°C	-50°C	-60°C	-70°C	-80°C	-90°C
-200°C	-7.890	-8.095	-	-	-	-	-	-	-	-
-100°C	-4.633	-5.037	-5.426	-5.801	-6.159	-6.500	-6.821	-7.123	-7.403	-7.659
0°C	0.000	-0.501	-0.995	-1.482	-1.961	-2.431	-2.893	-3.344	-3.786	-4.215
	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
0°C	0.000	0.507	1.019	1.537	2.059	2.585	3.116	3.650	4.187	4.726
100°C	5.269	5.814	6.360	6.909	7.459	8.010	8.562	9.115	9.669	10.224
200°C	10.779	11.334	11.889	12.445	13.000	13.555	14.110	14.665	15.219	15.773
300°C	16.327	16.881	17.434	17.986	18.538	19.090	19.642	20.194	20.745	21.297
400°C	21.848	22.400	22.952	23.504	24.059	24.610	25.164	25.720	26.276	26.834
500°C	27.393	27.953	28.516	29.080	29.647	30.216	30.788	31.362	31.939	32.519
600°C	33.102	33.689	34.279	34.873	35.470	36.071	36.675	37.284	37.896	38.512
700°C	39.132	39.755	40.382	41.012	41.645	42.281	42.919	43.559	44.203	44.848
800°C	45.494	46.141	46.786	47.431	48.074	48.715	49.353	49.989	50.622	51.251
900°C	51.877	52.500	53.119	53.735	54.347	54.956	55.561	56.164	56.763	57.360
1000°C	57.953	58.545	59.134	59.721	60.307	60.890	61.473	62.054	62.634	63.214
1100°C	63.792	64.370	64.948	65.525	66.102	66.679	67.255	67.831	68.406	68.980
1200°C	69.553	-	-	-	-	-	-	-	-	-

TCK probe table

Temp.	0°C	-10°C	-20°C	-30°C	-40°C	-50°C	-60°C	-70°C	-80°C	-90°C
-200°C	-5.730	-6.035	-6.158	-6.262	-6.344	-6.404	-6.441	-6.458	-	-
-100°C	-3.554	-3.852	-4.138	-4.411	-4.669	-4.913	-5.141	-5.354	-5.550	-5.730
0°C	0.000	-0.392	-0.778	-1.156	-1.527	-1.889	-2.243	-2.587	-2.920	-3.243
	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
0°C	0.000	0.397	0.798	1.203	1.612	2.023	2.436	2.851	3.267	3.682
100°C	4.096	4.509	4.920	5.328	5.735	6.138	6.540	6.941	7.340	7.739
200°C	8.138	8.539	8.940	9.343	9.747	10.153	10.561	10.971	11.382	11.795
300°C	12.209	12.624	13.040	13.457	13.874	14.293	14.713	15.133	15.554	15.975
400°C	16.397	16.820	17.243	17.667	18.091	18.516	18.941	19.366	19.792	20.218
500°C	20.644	21.071	21.497	21.924	22.350	22.776	23.203	23.629	24.055	24.480
600°C	24.905	25.330	25.755	26.179	26.602	27.025	27.447	27.869	28.289	28.710
700°C	29.129	29.548	29.965	30.382	30.798	31.213	31.628	32.041	32.453	32.865
800°C	33.275	33.685	34.093	34.501	34.908	35.313	35.718	36.121	36.524	36.925
900°C	37.326	37.725	38.124	38.522	38.918	39.314	39.708	40.101	40.490	40.885
1000°C	41.276	41.665	42.053	42.440	42.826	43.211	43.595	43.978	44.359	44.740
1100°C	45.119	45.497	45.873	46.249	46.623	46.995	47.367	47.737	48.105	48.473
1200°C	48.838	49.202	49.565	49.926	50.286	50.644	51.000	51.355	51.708	52.060
1300°C	52.410	52.759	53.106	53.451	53.795	54.138	54.479	54.819	-	-

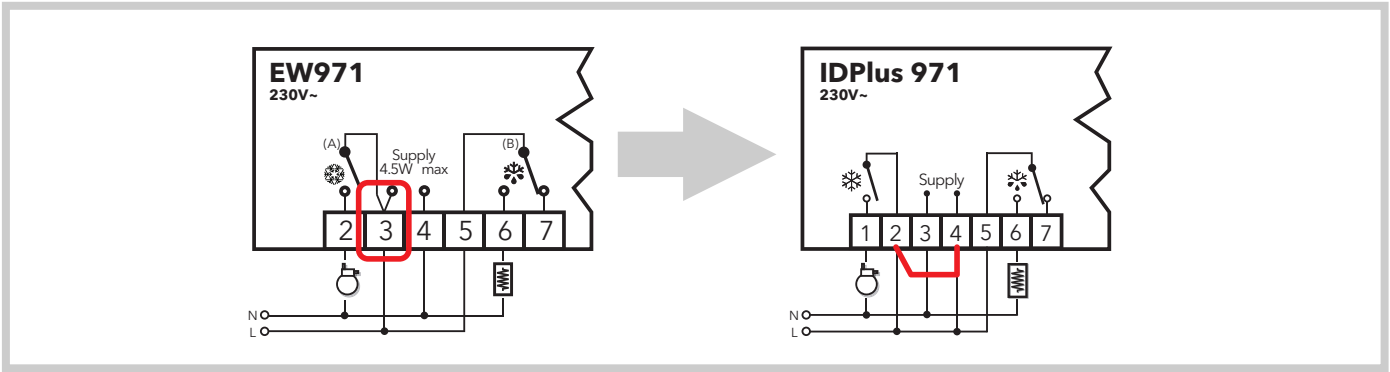
# IDPlus vs EW and ID, ICPlus vs IC compatibility

## Compatibility tables

IDPlus models	IC - ID	EWPC - EWTC - EWPX	EW - EWPlus*
<b>IDPlus 902</b> Outputs: 8A SPDT	IC 901 IC 902 ID 961 ID 961LX	EWPC 901 EWPC 902 EWPC 961 EWTC 101 EWPX 161	EW 902 EWPlus 902
<b>IDPlus 961</b> Outputs: 2Hp SPST	IC 901 IC 902 ID 961 ID 961LX	EWPC 901 EWPC 902 EWPC 961 EWTC 101 EWPX 161	EW 961 EWPlus 961
<b>IDPlus 971</b> Outputs: 2Hp + 8A	ID 961/A ID 970 ID 970LX ID 971 ID 971LX	EWPC 970 EWPC 971 EWPX 161AR EWPX 170 EWPX 171	EW 971 EWPlus 971
<b>IDPlus 974</b> Outputs: 2Hp + 8A + 5A	ID 974 ID 974 LX	EWPC 974 EWPX 174	EW 974 EWPlus 974
<b>IDPlus 978</b> Outputs: 1.5Hp + 8A + 5A	ID 975LX ID 983 ID 985 ID 983LX (no C/K/S) ID 985LX (no C/K/S)	EWPX 174AR EWPX 174AX EWPX 185 EWPX 190	EWPlus 978

ICPlus models	IC	EWPC - EWTC
<b>ICPlus 902/A</b>	IC 901/A	-
<b>ICPlus 902</b>	IC 901 IC 902 IC 912 (no LX) IC 912LX V/I	EWPC 901 EWPC 902 EWTC 101
<b>ICPlus 915</b>	IC 912LX (no V/I) IC 915 IC 915LX	EWPC 905

**\*NB** - Controllers in the series for OEM EW / EWPlus include a connection between power supply and loads that is not found in the IDPlus series. IT IS therefore necessary to jumper the load line and the controller power supply, see example below:







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The type approval marks associated with each individual instrument are present on specific part numbers only. Check details and availability with sales department.

# Life Is On

by **Schneider** Electric

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