

# Product catalogue 2013

Refrigeration, Systems, Thermoregulation



# Innovative Environmentally Optimised solutions

## Eliwell and Invensys

The Eliwell success story has lasted over 30 years, during which time we have developed some of the most highly-regarded products in the industry. With our research and development laboratory, a global centre of excellence for Invensys Controls, Eliwell is at the cutting edge of innovative solutions for air conditioning and refrigeration.

## Environmental sustainability

For Eliwell and the entire Invensys group, environmental sustainability is not just a key objective. It is also a fundamental stimulus for our research and development and for our commitment to deliver the most ecological products and solutions possible.

Eliwell is committed to the sustainable use of resources in all its processes, in order to guarantee our clients the highest level of energy savings and environmental sustainability in their solutions.



## Innovative Environmentally Optimised solutions

- Up to 39% reduced energy consumption thanks to advanced algorithms
- Compatible with ecological refrigerants to reduce CO<sub>2</sub> emissions
- Optimised design for the environment, for simplified installation and maintenance
- A 22% energy consumption reduction in design and production operations (2008 - 2011)
- Use of energy produced 100% from renewable sources
- Active packaging recycling program
- Products compatible with the new ecological refrigerants R290, R600
- Reduction in the production of greenhouse gases in the supply chain and in the production and distribution processes thanks to:
  - new controllers without sensors
  - reduced number of components
  - reduced wiring and installation times in our new products

Eliwell Accreditation



Invensys Accreditation



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## KEY



### EO (Environmentally Optimised)

EO (Environmentally Optimised) refers to the new solutions created by Eliwell designers that are highly efficient, eco-system compliant and designed to deliver the clear environmental benefits for users. Devices are developed with new energy saving algorithms that can guarantee immediate, measurable economic returns. Compatible with the new ecological refrigerants R290 and R600, the products have been designed to guarantee lower operating and maintenance costs and have an active packaging recycling program. Design efforts have also enabled us to simplify installation, maintenance and operational use of Eliwell EO products.



### MODBUS-RTU

ModBus is a serial communication protocol that allows communication between different devices connected to the same network. ModBus is often used to connect a supervisor computer to a remote terminal unit (RTU) in monitoring control and data acquisition systems.



### RS-485

This is the standard that describes the communication interface for serial connection between a network of devices and the computer. The network, normally with 3 wires, makes it possible to cover much longer distances than the RS232 standard. The protocol used for the communication can either be Eliwell, i.e. created according to Eliwell specifications, or ModBus.



### LINK

The Link function makes it possible to connect a master and a number of slave and echo devices in a network and allows the sharing of network functions in order to maximise management of small control systems.



### COPY CARD

The Copy Card is an accessory that connects to a TTL type serial port and allows the rapid programming of instrument parameters.



### TELEVISSYSTEM

TelevisSystem is a remote management and monitoring system for industrial and commercial systems, such as supermarkets and hypermarkets. Data can either be printed or extracted and downloaded in a format which is compatible with the most commonly used office automation software. The monitoring system can be accessed remotely via a web browser, using any PC or handheld device connected to the network.



### RTC

Internal clock (Real Time Clock) for managing programmable functions at preset times. A product with an RTC has a function that can give the current time of day, together with the day of the week. This function is used, for example, to set the defrosting start time or setpoint changes at times preset by the user. A set of dedicated parameters makes this important function easy to manage. In Eliwell instruments, the clock

## KEY

continues to operate in the event of power cuts without the use of batteries which can have memory storage and general recharging problems. Autonomy is guaranteed for over 6 hours with a recharging time of about 1 minute.

### HACCP

This is a sophisticated diagnostics system capable of detecting all temperature and black-out events that occur in the monitored refrigerated environment, recording them internally in the device in a non-volatile memory. This system was devised to meet the most exacting demands of the market with regard to the temperature control of preserved food in compliance with the 93/43/EU Directives.



### TEMPERATURE PROBES

Thanks to the different materials used in the different models, the temperature probes are capable of covering a very wide temperature range; the sensors used are PTC, NTC, thermocouple, Pt100 and Pt1000. Depending on the kind of sensor, the protective casing (usually cylindrical) can be made of either ABS, Aisi 304/316 stainless steel or Inconel. For additional sensor protection, special materials are used (e.g. resins) between sensor and casing. The cable that transmits the signal to the instrument is made of either PVC, Silicone or Vetrotex and is available in different lengths. The range of use depends on the materials used, as well as on the type of sensor.



### HUMIDITY PROBES

The EWHS series of probes are specially made for connection to humidity measurement instruments. EWHS 280 and EWHS 300 probes have one current output (4...20 mA) proportional to the relative humidity. EWHS 310 probes have two current outputs (0...20 mA), one for humidity and one for temperature.



### PRESSURE PROBES

The EWPA series of probes are pressure reading devices that have one 4...20 mA current output for transferring the signal to the measuring instrument. The EWPA 007 probes have an operating range up to 7 bar, whereas the EWPA 030 probes operate up to 30 bar.



### PID

The PID function is an alternative to the on-off control for use in situations requiring greater precision and reduced oscillations with regard to the setpoint, in both 'hot' and 'cold' applications. Controllers with the PID function have a further option known as Autotuning, which automatically calculates the parameters necessary for better process control.



### SWITCHING POWER SUPPLY

The switching power supply, that switches from either 100...240 Va or from 12...24 Va/12...36 Va offers the installer the option of covering most applications, thus reducing the number of models that would be necessary if a transformer-type power supply was used.



## ELECTRONIC CONTROLLERS

Eliwell operates in the commercial and industrial refrigeration sector, offering technological innovation and energy efficient products and solutions.

Eliwell controllers are the ideal solution for cooling plants and equipment. They guarantee quality and safe

preservation of fresh and frozen foods and enable energy savings and reduced maintenance for customers.

The vast range of product variants available makes Eliwell controllers fully adaptable for a wide range of applications.

Eliwell products are:

- Reliable
- Simple to use
- Energy efficient





# IDPlus 902 - IDPlus 961

32x74 cold/hot thermostats



Codes	Description	Rating	Power supply
<b>IDP11D07*0000</b>	IDPlus 902 NTC	8A	230 V~
<b>IDP11D03*0000</b>	IDPlus 902 NTC	8A	12 V~/~
<b>IDP17D07*0000</b>	IDPlus 961 NTC	2Hp	230 V~
<b>IDP17D03*0000</b>	IDPlus 961 NTC	2Hp	12 V~/~

\*The number or letter here indicates the documentation language. Codes are:

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 operating in conjunction with both heated applications and static cold storage units at normal temperatures (over 0°C).

## Common features

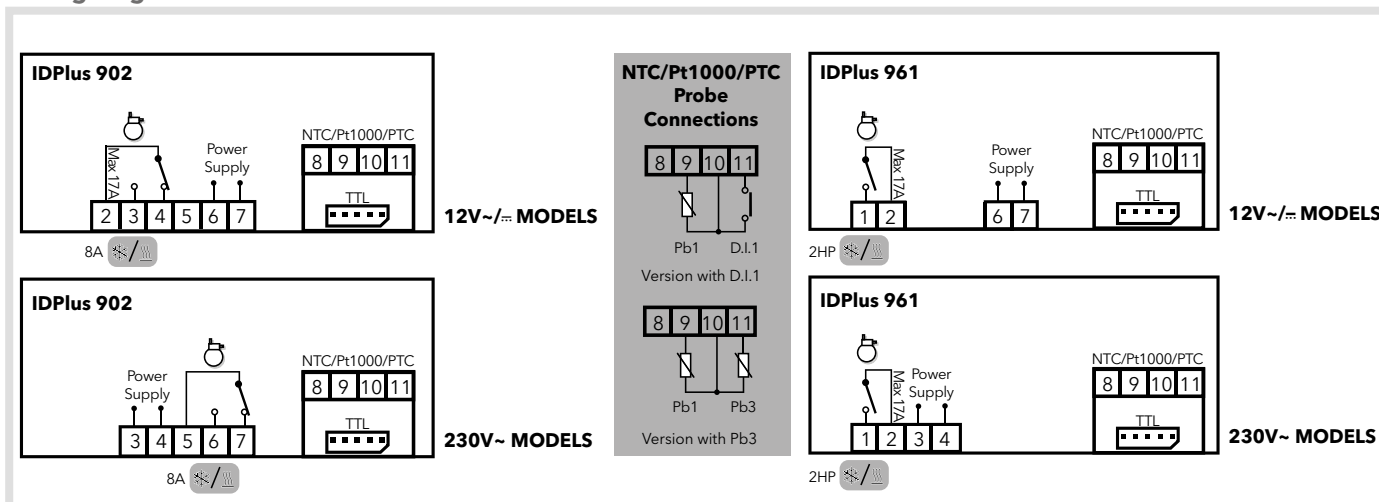
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage Temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Function</b>	HACCP
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Connectivity</b>	can be connected to TelevisSystem and ModBus
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) 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 TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicard/Copy Card or TelevisSystem/ModBus monitoring device*
Digital outputs:	1 SPDT ½ Hp 8(4)A 250 V~	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 end of scale +1 digit	better than 0.5% of end of 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>• 230 V~ ±10% 50/60 Hz</li> <li>• 12 V~/~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230 V~ ±10% 50/60 Hz</li> <li>• 12 V~/~ ±10% 50/60 Hz</li> </ul>
HACCP:	present	present

\*(selectable by parameter).

## Wiring diagrams



# IDPlus 971 - IDPlus 974

32x74 refrigeration thermostats



Codes	Description	Rating	Power supply
<b>IDP29DB7*0000</b>	IDPlus 971 NTC	2Hp/8A	230 V~
<b>IDP29DB3*0000</b>	IDPlus 971 NTC	2Hp/8A	12 V~/∞
<b>IDP2ED07*0000</b>	IDPlus 974 NTC	2Hp/8A/5A	230 V~
<b>IDP2ED03*0000</b>	IDPlus 974 NTC	2Hp/8A/5A	12 V~/∞

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## Applications

Controllers in the IDPlus 971 range are new-generation devices suitable for static cold storage units at normal and low temperatures. Controllers in the IDPlus 974 range are suitable for static and ventilated cold storage units at low temperatures.

## Common features

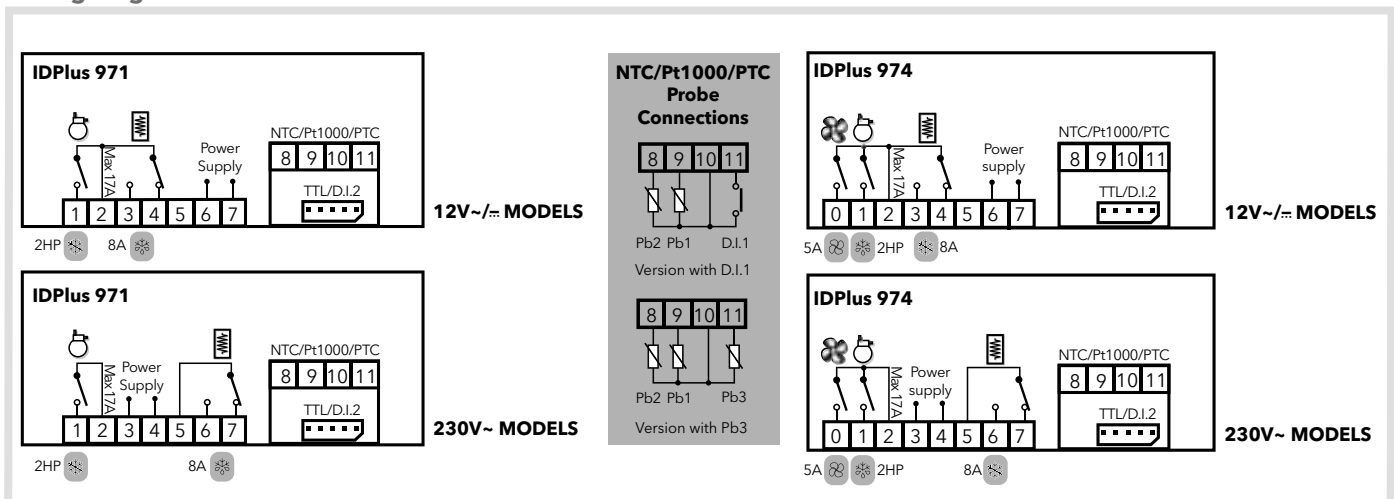
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage Temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Function</b>	HACCP
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Connectivity</b>	can be connected to TelevisSystem and ModBus
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Accessories</b>	New USB/TTL Unicard for uploading/downloading parameters

## Technical data

	IDPlus 971	IDPlus 974
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C • Pt1000 probe: -55.0...150.0°C	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C • Pt1000 probe: -55.0...150.0°C
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 ½ Hp 8(4)A 250 V~ 1 SPST 2 Hp 12(12)A 250 V~	1 SPDT ½ Hp 8(4)A 250 V~ 1 SPST 2 Hp 12(12)A 250 V~ 1 SPST 5(2)A 250 V~
Measurement range:	-55.0...150.0°C	-55.0...150.0°C
Accuracy:	better than 0.5% of end of scale + 1 digit	better than 0.5% of end of scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	3W max	3W max
Power supply:	• 230 V~ ±10% 50/60 Hz • 12 V~/∞ ±10% 50/60 Hz	• 230 V~ ±10% 50/60 Hz • 12 V~/∞ ±10% 50/60 Hz
Buzzer:	present	optional
HACCP:	present	present

\* selectable by parameter

## Wiring diagrams





# IDPlus 978

32x74 refrigeration thermostats



Codes	Description	Rating	Power supply
IDP24DB7*0000	IDPlus 978 NTC	1.5Hp	230 V~

\*The number or letter here indicates the documentation language. Codes are:  
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.

## Common features

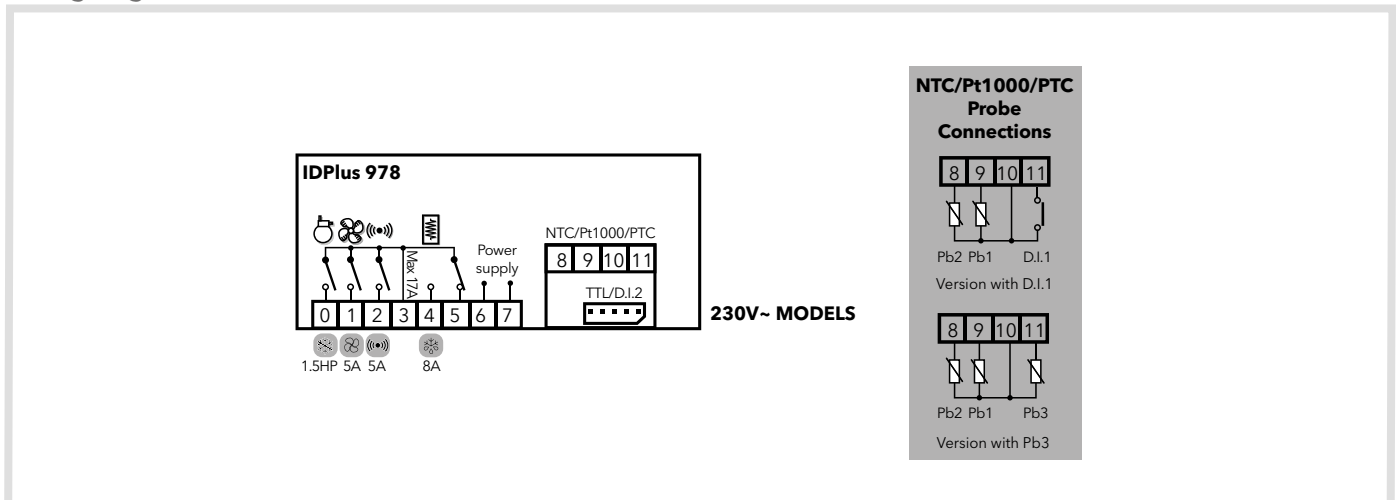
<b>Appearance</b>	New front design	<b>Operating temperature</b>	-5...55°C
<b>Display</b>	Simplified user interface	<b>Storage Temperature</b>	-30...85°C
<b>Configuration</b>	4 default configurations included, selectable and restorable	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Function</b>	HACCP
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Connectivity</b>	can be connected to TelevisSystem and ModBus
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) 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 TelevisSystem/ModBus* monitoring device
Digital outputs:	1 SPDT ½ Hp 8(4)A 250 V~ 1 SPST 5A 250 V~ 1 SPST 1.5HP 10(6)A 250 V~ 1 SPST 5A 250 V~
Measurement range:	-55.0...150.0°C
Accuracy:	better than 0.5% of end of scale + 1 digit
Resolution:	1 or 0.1°C
Power consumption:	3W max
Power supply:	<ul style="list-style-type: none"> <li>• 230 V~ ±10% 50/60 Hz</li> <li>• 12 V~/= ±10% 50/60 Hz</li> </ul>
Buzzer:	present
HACCP:	present

\* selectable by parameter

## Wiring diagrams



# ID 400

32x74 thermostats



Codes	Description	Probe*	Power supply	Notes
ID1LD000CA701	ID 400	NTC	230 V~	Industrial packaging

\* probe not included

## Applications

The ID 400 controller is suitable for any application on refrigeration units at normal temperature.

## Common features

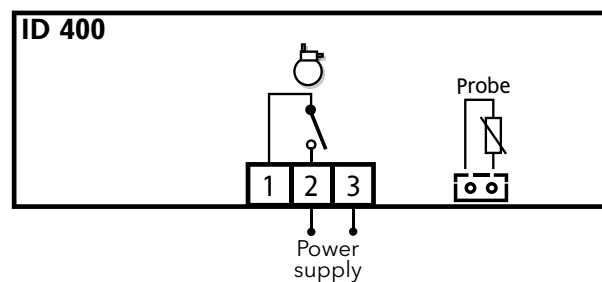
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 32x74 mm, depth 30 mm	<b>Storage Temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

## Technical data

	ID 400
Display range:	-5...99°C
Display:	no decimal point*, 2 digits+sign
Analogue inputs:	1 NTC (probe included)
Digital outputs:	1 SPST 5(2)A 1/4Hp 250 Va output
Connections:	6.3 mm 3-way FASTON for relays and power supply 2-way quick connector for NTC probe input
Power supply frequency:	50 Hz/60 Hz
Power supply voltage:	<ul style="list-style-type: none"> <li>• model 230 V~ ±10% 50/60 Hz</li> <li>• model 115 V~ ±10% 50/60 Hz</li> </ul>

\* selectable by parameter

## Wiring diagrams



# IC 912 LX

32x74 cold/hot thermostats



Codes	Description	Probe*	Power supply
<b>IC11J10XHD700</b>	IC 912 LX temperature	TC/Pt100	230 V~
<b>IC11D10XCD700</b>	IC 912 LX temperature	NTC/PTC	230 V~
<b>IR11100XUD700</b>	IC 912 LX humidity	4...20 mA	230 V~
<b>IP11100XRD700</b>	IC 912 LX pressure	4...20 mA	230 V~
<b>IC11100XRN700</b>	IC 912 LX neutral	4...20 mA	230 V~

The new ICPlus models will be available in the first quarter 2013

\* probe not included

## Applications

IC 912 LX controllers are electronic, one-step devices used to control temperature, relative humidity and pressure, and are compatible with TelevisSystem and monitoring systems with ModBus protocol.

## Common features

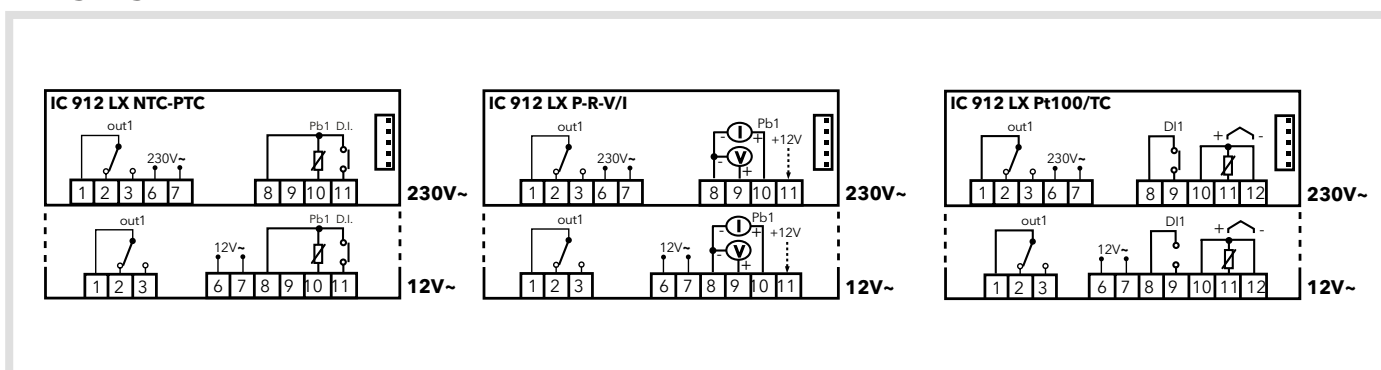
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b> -5...55°C
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Storage Temperature</b> -30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

## Technical data

	IC 912 LX NTC/PTC	IC 912 LX P/R/V-I	IC 912 LX TC/Pt100
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>• -99...100 *</li> <li>• -99.9...100.0 *</li> <li>• 999...1000 *</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...1 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA)*	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 Copy Card, TelevisSystem and systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem and systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem and systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250 V~	1 SPDT 8(3)A 250 V~	1 SPDT 8(3)A 250 V~
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	<b>Pt100:</b> 0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C <b>TcJ:</b> 0.4% for whole scale + 1 digit <b>TcK:</b> 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	<b>Pt100:</b> 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over <b>TcJ:</b> 0.1°C (0.1°F) up to 199.9°C (1°F) over <b>TcK:</b> 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12 V~/12..24 V~/24 Va ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 Va±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 Va/12..24 V~/24 V~ ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 Va±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 V~ ±10% 50/60 Hz</li> <li>• 230 V~ ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter).

## Wiring diagrams



# IC 915

32x74 cold/hot thermostats



Codes	Description	Probe	Power supply
IC12J00THD400	IC 915 temperature	TC/Pt100	12...24 V~
IC12C00TCH700	IC 915 temperature	NTC/PTC	230 V~
IP12A00TRD700	IC 915 pressure	4...20 mA	230 V~
IP12B00TRD700	IC 915 pressure	4...20 mA	230 V~

The new ICPlus models will be available in the first quarter 2013

\* probe not included

## Applications

IC 915 controllers are electronic two-step devices, either dependent or independent or with neutral zone, used to control temperature, relative humidity and pressure.

## Common features

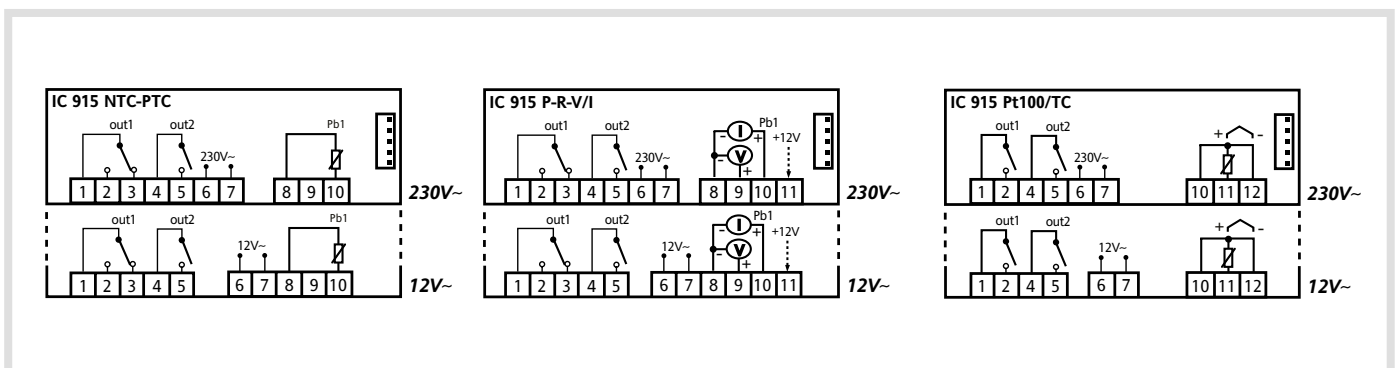
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Storage Temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
		<b>Soft Start Function</b>	present

## Technical data

	IC 915 NTC/PTC	IC 915 P/R/V-I	IC 915 TC/Pt100
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>• -99...100 *</li> <li>• -99.9...100.0 *</li> <li>• 999...1000 *</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...1 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA)*	1 Pt100 or 1 TcJ/TcK
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250 V~ + 1 SPST 8(3)A 250 V~	1 SPDT 8(3)A 250 V~ + 1 SPST 8(3)A 250 V~	1 SPDT 8(3)A 250 V~ + 1 SPST 8(3)A 250 V~
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) over TcJ: 0.1°C (0.1°F) up to 199.9°C (1°F) over TcK: 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 Va model</li> <li>• 3W for 230 Va model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12 V~/12...24 V~/24 V~ ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 V~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 V~/12...24 V~/24 V~ ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 V~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 Va/12...24 Va/24 Va ±10% 50/60 Hz</li> <li>• 110...115 Va/220...230 Va ±10% 50/60 Hz</li> </ul>
Alarm:	optional	optional	optional

\* selectable by parameter

## Wiring diagrams



# IC 915 LX

32x74 cold/hot thermostats



Codes	Description	Probe*	Power supply
<b>IC12JI0XHD700</b>	IC 915 LX temperature	TC/Pt100	230 V~
<b>IC12DI0XCD700</b>	IC 915 LX temperature	NTC	230 V~
<b>IR12I00XBD700</b>	IC 915 LX humidity	4...20 mA	230 V~
<b>IP12I00XRD700</b>	IC 915 LX pressure	4...20 mA	230 V~
<b>IC12I00XRN700</b>	IC 915 LX neutral	4...20 mA	230 V~

The new ICPlus models will be available in the first quarter 2013

\* probe not included

## Applications

IC 915 LX controllers are electronic two-step devices, either dependent or independent or with neutral zone, used to control temperature, relative humidity and pressure. They are compatible with TelevisSystem and with ModBus protocol monitoring systems.

## Common features

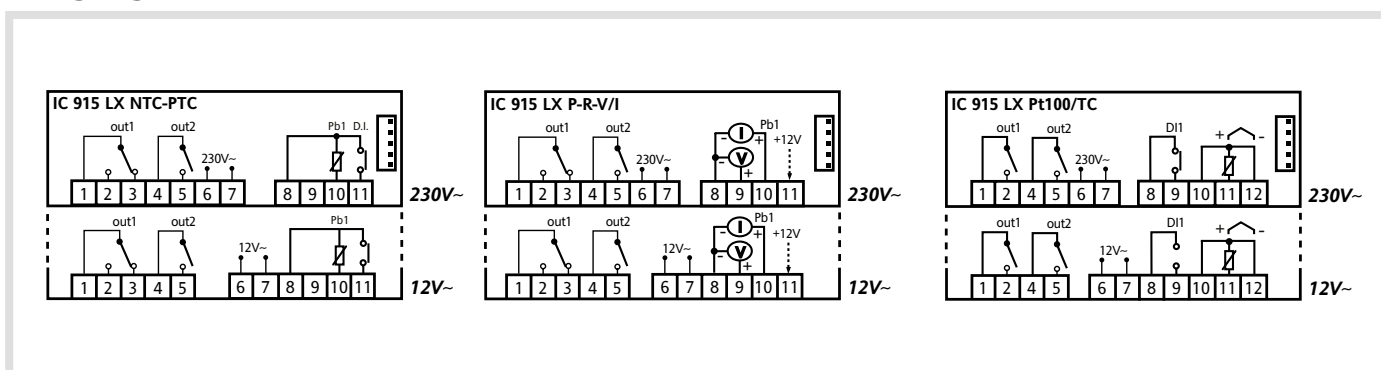
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b> -5...55°C
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Storage Temperature</b> -30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

## Technical data

	IC 915 LX NTC/PTC	IC 915 LX P/R/V-I	IC 915 LX TC/Pt100
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>• -99...100 *</li> <li>• -99.9...100.0 *</li> <li>• 999...1000 *</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...1 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA)*	1 Pt100 or 1 TcJ/TcK
Digital inputs:	1 clean contact at extra low in progress	not available	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card, TelevisSystem and systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem and systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem and systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250 V~ + 1 SPDT 8(3)A 250 V~	1 SPDT 8(3)A 250 V~ + 1 SPDT 8(3)A 250 V~	1 SPDT 8(3)A 250 Va + 1 SPDT 8(3)A 250 Va +
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) over TcJ: 0.1°C (0.1°F) up to 199.9°C (1°F) over TcK: 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 Va model</li> <li>• 3W for 230 Va model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12 V~/12..24 V~/24 V~ ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 V~±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 V~/12..24 V~/24 V~ ±10% 50/60 Hz</li> <li>• 110...115 V~/220...230 V~±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 Va/12..24 Va/24 Va ±10% 50/60 Hz</li> <li>• 110...115 Va/220...230 Va ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter).

## Wiring diagrams





# IC 917/PID (SSR)

PID 32x74 cold/hot thermostats



Codes	Description	Probe*	Power supply
<b>IC12DI0TMD700</b>	IC 917/PID	NTC/PTC	230 V~
<b>IC12ZI0TMD700</b>	IC 917/PID	TC/Pt100	230 V~
<b>IC1RDI0TMD700</b>	IC 917/PID SSR	NTC/PTC	230 V~
<b>IC1RZI0TMD700</b>	IC 917/PID SSR	TC/Pt100	230 V~

\* probe not included

## Applications

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

## Common features

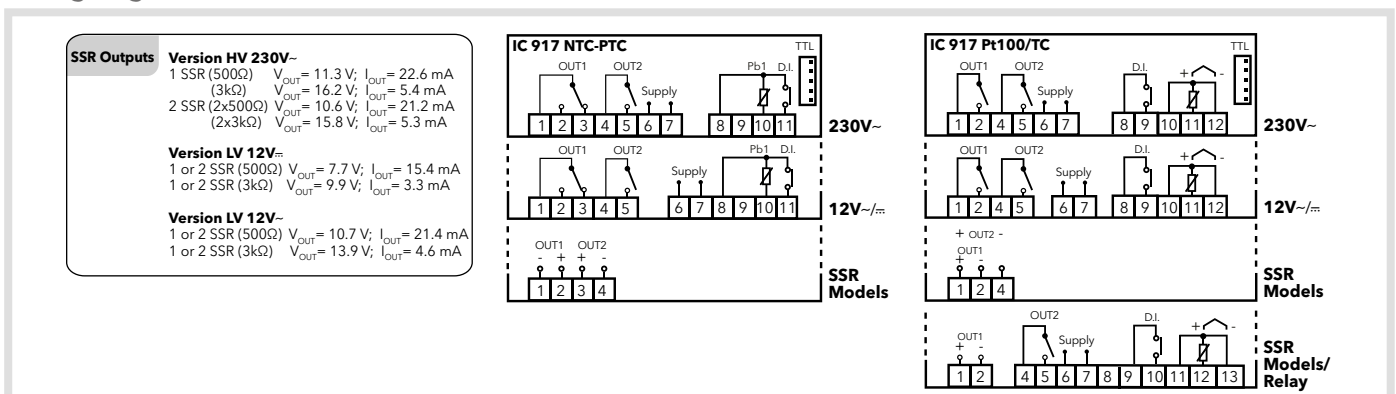
<b>Container</b>	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 74x32 mm, depth 59 mm	<b>Storage Temperature</b>	-30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) 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 250 V~ • 1 SPST 8(3)A 1/2hp 250 V~ <b>SSR models: please see wiring diagram</b>	2 SPST 8(3)A 1/2hp 250 V~ <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) over	Pt100: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over TcJ: 0.1°C (0.1°F) up to 199.9°C, (1°F) over TcK: 0.1°C (0.1°F)
Power consumption:	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5W for 12 V~ model</li> <li>• 3W for 230 V~model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12 V~/~ ±10% 50/60 Hz</li> <li>• 230 V~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 V~/~ ±10% 50/60 Hz</li> <li>• 230 V~ ±10% 50/60 Hz</li> </ul>
Alarm:	optional	optional

\*(selectable by parameter)

## Wiring diagrams



# EM300 (LX)

Temperature, humidity, pressure indicators



Codes	Description	Probe	Power supply
TM10D0000D700	EM300	NTC	230V~
TM10I0000M700	EM300 I	4...20mA	230V~
TM10V0000M700	EM300 V	0...10V	230V~
TM10D00X0D700	EM300 LX	NTC	230V~
TM10Z00X0M700	EM300 LX	PT100/TC	230V~
TM10I00X0M700	EM300 LX I	4...20mA	230V~
TM10Z00X0M400	EM300 LX	PT100/TC	12...24V~/12...36V~

## Applications

The EM300 (LX) 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 32x74 mm, depth 30 mm (no terminals); 'switching' models: depth 59 mm	<b>Storage temperature</b> -30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

## Technical data

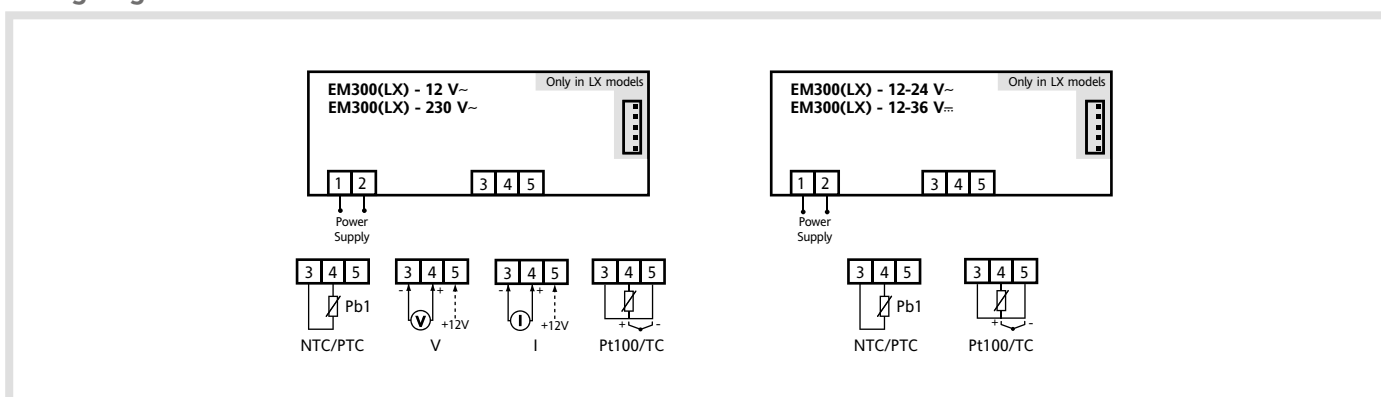
	EM300 (LX) PTC/NTC	EM300 (LX) V/I	EM300 (LX) Pt100/TCJ/TCK
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0... 110.0°C</li> <li>• PTC probe: -55.0... 140.0°C</li> </ul>	<ul style="list-style-type: none"> <li>• -99... 100 *</li> <li>• -99.9... 100.0 *</li> <li>• 999... 1000 *</li> </ul>	<ul style="list-style-type: none"> <li>• Pt100 probe: -200...800°C</li> <li>• TCJ probe: -40...760°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 NTC or PTC *	1 voltage input (0-1 V, 0-5 V, 0-10 V) 1 current input (0-20 mA, 4-20 mA)	
Measurement range:	from -55 to 140°C	from -999 to 1000	
Accuracy:	better than 0.5% of end of scale + 1 digit	better than 0.5% of end of scale + 1 digit	Pt100: 0.5% / 0.2% from -150 a 300°C TCJ: 0.4% TCK: 0.5% / 0.3% from -40 a 800°C Pt100: 0.1°C up to 199.9, 1°C
Resolution:	1 or 0.1°C	1 or 0.1°C	TCJ and TCK: 1°C
Power consumption:	<ul style="list-style-type: none"> <li>• 230 V~ model: 1.8 W max</li> <li>• 12 V~ model: 0.5 W max</li> <li>• 12...24 V~ model: 3 W max</li> </ul>	<ul style="list-style-type: none"> <li>• 230 V~ model: 1.8 W max</li> <li>• 12 V~ model: 0.5 W max</li> </ul>	<ul style="list-style-type: none"> <li>• 230 V~ model: 1.8 W max</li> <li>• 12 V~ model: 0.5 W max</li> <li>• 12...24 V~ model: 3 W max</li> <li>• 230 V~ ±10% 50/60 Hz</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 230 V~ ±10% 50/60 Hz</li> <li>• 12 V~ ±10% 50/60 Hz</li> <li>• 12...24 V~/~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 230 V~ ±10% 50/60 Hz</li> <li>• 12 V~/~ ±10% 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• 12 V~ ±10% 50/60 Hz</li> <li>• 12...24V~/12...36V~ ±10% 50/60Hz</li> </ul>

### LX models

Connections:	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem **	TTL port for connection to Copy Card and TelevisSystem **
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\* (selectable by parameter). \*\* use BusAdapter350

## Wiring diagrams



# EWTL 300 - EWTL 310 - DST-30

LCD thermometers



Codes	Description	Probe cable length
T1M1BT0100	(A) EWTL 300	1,5m
T1M1BT0101	(B) EWTL 310	1,5m
T1M1BT0105	(C) DTS-30	1m

## Applications

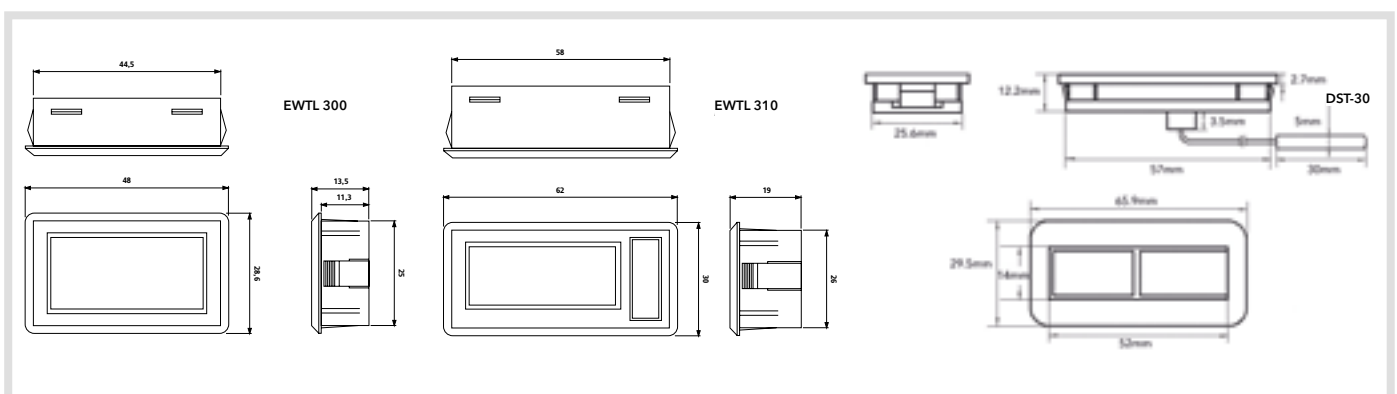
The EWTL 300/310 is a range of LCD digital temperature gauges with temperature probes connected to the instrument via a cable of length 1.5, 2 or 3 metres. DST-30 is a solar-cell thermometer specifically designed for refrigerated counters and display units.

## 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	24x14 mm LCD
Resolution:	1 or 0.1°C	1 or 0.1°C	0.1°C
Accuracy:	±1°C from 0 to 40°C	better than 0.5% of end of scale	±1°C
Probe:	connected to instrument, cable length 1.5 m	connected to instrument, cable length 0.5 m, 1 m, 2 m or 3 m	connected to instrument, cable length 1 m
Updating display:	10 seconds	12 seconds	
Display range:	-20...70°C	-20...70°C	-20...80°C
Dimensions:	front panel 48x28.6 mm depth 13.5 mm	front panel 62x30 mm depth 19 mm	front panel 66x30 mm depth 11.6 mm
Power supply:	one 1.5 V LR 44 battery or equivalent - duration 12 months	one 1.5 V LR 44 battery or equivalent - duration 12 months	integrated solar cells
Enclosure rating:			IP68

## Dimensions



# EWDR 981- EWDR 984

DIN controllers for refrigeration



Codes	Description	Probe	Power supply
<b>DR26DI0TCD700</b>	EWDR 981	NTC	230 V~
<b>DR3CDI0TCD700</b>	EWDR 984	NTC	230 V~

## Applications

The EWDR range of products, available in a 4 DIN module size (70x85 mm), is designed for applications requiring controllers installed on DIN rails, such as electrical panels for cold rooms, or applications with centralised electrical panels.

## Common features

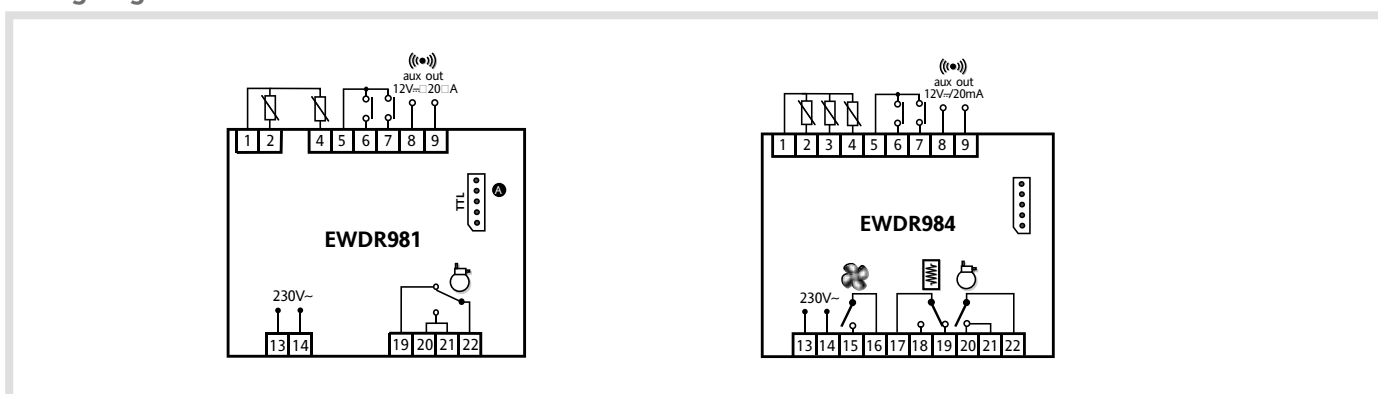
<b>Container</b>	plastic casing with 4 DIN modules	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Dimensions</b>	front panel 70x85 mm, depth 61 mm	<b>Connections</b>	on screw-on terminal block for $\leq 2.5$ mm wires <sup>2</sup> (just one wire per terminal for power connections)
<b>Installation</b>	on DIN rail (Omega 3) or wall mounted		
<b>Operating temperature</b>	-5...55°C		
<b>Storage Temperature</b>	-30...85°C		

## 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 250 V~	1 SPDT 8(3)A 250 V~ + 1 SPST 15A 1hp 250 V~ - 1 SPST 8(3)A 250 V~ -
Analogue outputs:	12 V~/24 mA output *	12 V~/24 mA output *
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	5 VA max	5 VA max
Power supply:	230 V~ $\pm 10\%$ 50/60 Hz	230 V~ $\pm 10\%$ 50/60 Hz

\* (selectable by parameter)

## Wiring diagrams



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

DIN controllers for remote counters



Codes	Description	Probe	Power supply
<b>DR38DI0TCD700</b>	EWDR 983	NTC	230 V~
<b>DR38DF0TCD700</b>	EWDR 983 /C	NTC	230 V~
<b>DR38DF0SCD700</b>	EWDR 983/CS LX	NTC	230 V~
<b>DR34DI0TCD700</b>	EWDR 985	NTC	230 V~
<b>DR35DR0SCD700</b>	EWDR 985/CS LX BUZ.	NTC	230 V~

## Applications

The EWDR range of products, available in a 4 DIN module size (70x85 mm), is designed for applications requiring controllers installed on DIN rails, such as electrical panels for cold rooms, or applications with centralised electrical panels.

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

## Common features

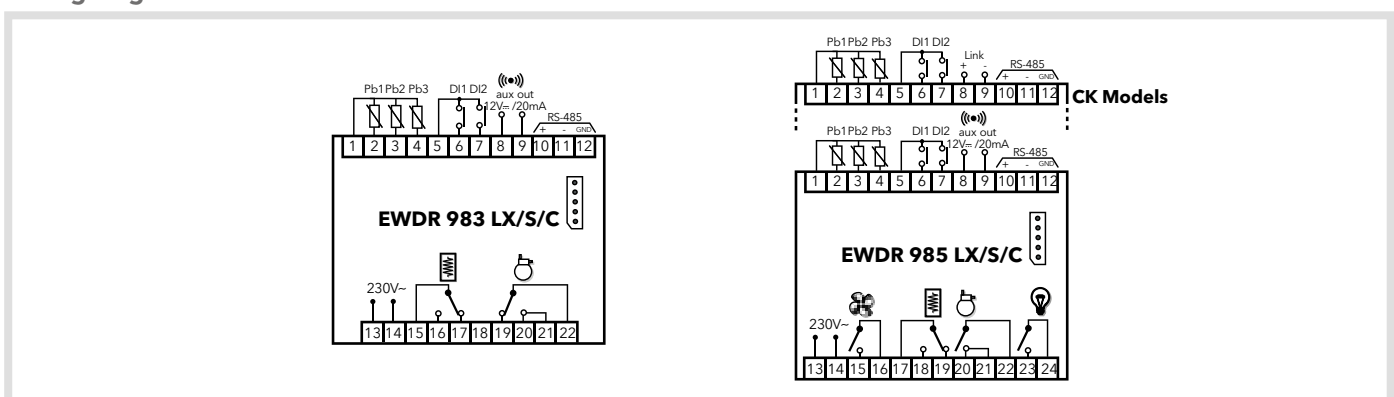
<b>Container</b>	plastic casing with 4 DIN modules	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Dimensions</b>	front panel 70x85 mm, depth 61 mm	<b>Connections</b>	on screw-on terminal block for $\leq 2.5$ mm wires <sup>2</sup> (just one wire per terminal for power connections)
<b>Installation</b>	on DIN rail (Omega 3) or wall mounted		
<b>Operating temperature</b>	-5...55°C		
<b>Storage Temperature</b>	-30...85°C		

## Technical data

	EWDR 983 LX/S/C	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 + RS 485 for connection to Televis <b>System</b>	TTL port for connection to Copy Card + RS 485 for connection to Televis <b>System</b>
Digital outputs:	1 SPDT 8(3)A 250 V~ + 1 SPDT 15A 1hp 250 V~	1 SPST 8(3)A 1/2hp 250 V~ + 1 SPDT 8(3)A 1/2hp 250 V~ + 1 SPST 15A 1hp 250 V~ + 1 SPST 8(3)A 1/2hp 250 V~ +
Analogue outputs:	12 V~/24 mA* output	12 V~/24 mA* output
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of end of scale + 1 digit	better than 0.5% of end of scale + 1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	5 VA max	5 VA max
Power supply:	230 V~ $\pm 10\%$ 50/60 Hz	230 V~ $\pm 10\%$ 50/60 Hz
Link:	not available	available
Clock:	available	available

\* (selectable by parameter)

## Wiring diagrams





# DR4020

Universal DIN controllers



Codes	Description	Probe*	Power supply
<b>E4D12E00BH710</b>	DR4020	Pt100	100...240V~
<b>E4D12A00BD710</b>	DR4020	TCJ	100...240V~
<b>E4D12I00BN710</b>	DR4020	4...20 mA	100...240V~
<b>E4D12N00BH710</b>	DR4020	NTC	100...240V~
<b>E4D12V00BN710</b>	DR4020	0...5 V	100...240V~

\* probe not included

## Applications

The new Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control.

## Common features

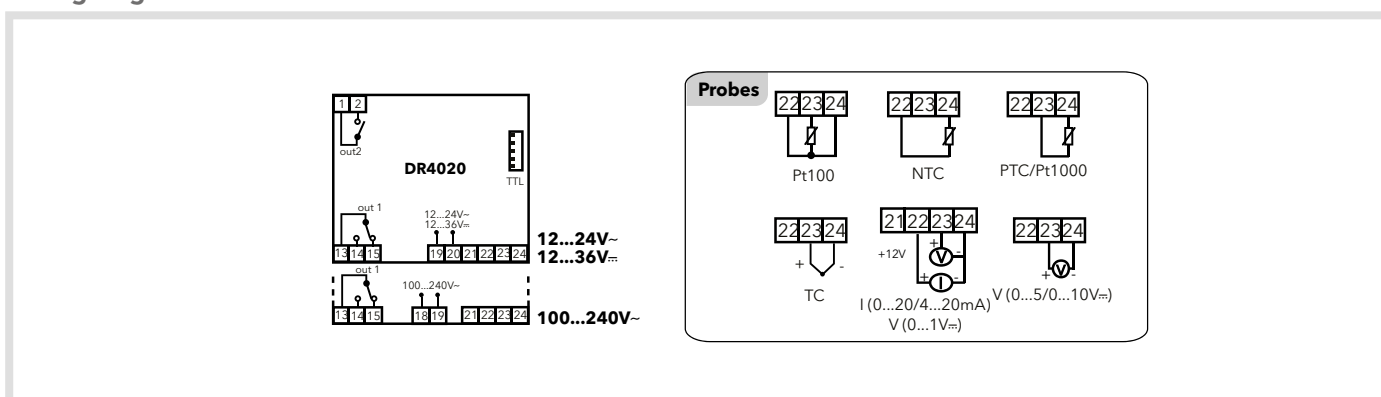
<b>Container</b>	plastic casing with 4 DIN modules	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 70x85 mm, depth 61 mm	<b>Storage Temperature</b>	-20...85°C
<b>Installation</b>	on DIN rail (Omega) or panel mounting, with 70x45 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity 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 table)
Digital inputs:	not available
Connections:	TTL port for connection to Copy Card and Unicard
Digital outputs:	1 SPDT 8(3)A 250 V~ 1 SPST 8(3)A 250 V~
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...24 V~/12...36 V= ±10% 50/60 Hz</li> <li>• 100...240 V~ ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# DR4022

Universal DIN controllers with serial port



Codes	Description	Probe*	Power supply
E4D12EASBH710	DR4022	Pt100	100...240V~
E4D12NASBH710	DR4022	NTC	100...240V~
E4D12AASBD710	DR4022	TCJ	100...240V~
E4D12VASBN410	DR4022	0...5 V	12...24V~/≐

\* probe not included

## Applications

The new Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control.

## Common features

<b>Container</b>	plastic casing with 4 DIN modules	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 70x85 mm, depth 61 mm	<b>Storage Temperature</b>	-20...85°C
<b>Installation</b>	on DIN rail (Omega) or panel mounting, with 70x45 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)

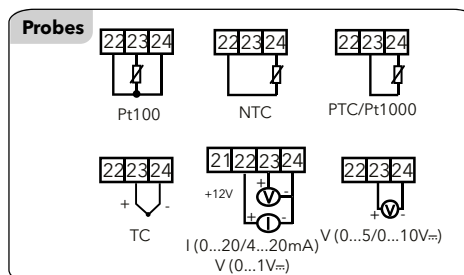
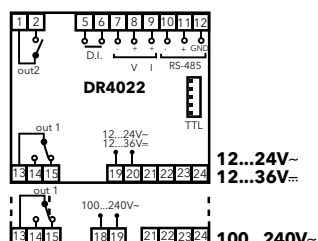
## Technical data

### 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 250 V~ 1 SPST 8(3)A 250 V~
Analogue output:	V-I: 0...1 V, 0...5 V, 0...10 V / 0...20 mA, 4...20 mA
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...24 V~/12...36 V≐ ±10% 50/60 Hz</li> <li>100...240 V~ ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# EW 4820 (SSR)

Universal 48x48 controllers



Codes	Description	Probe*	Power supply
<b>E481BPOXBH700</b>	EW4820	Pt100	100...240V~
<b>E481BIOXBH700</b>	EW4820	4...20 mA	100...240V~
<b>E481SIOXBN700</b>	EW4820 SSR output	4...20 mA	100...240V~
<b>E481SPOXBH700</b>	EW4820 SSR output	Pt100	100...240V~

\* probe not included

## 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

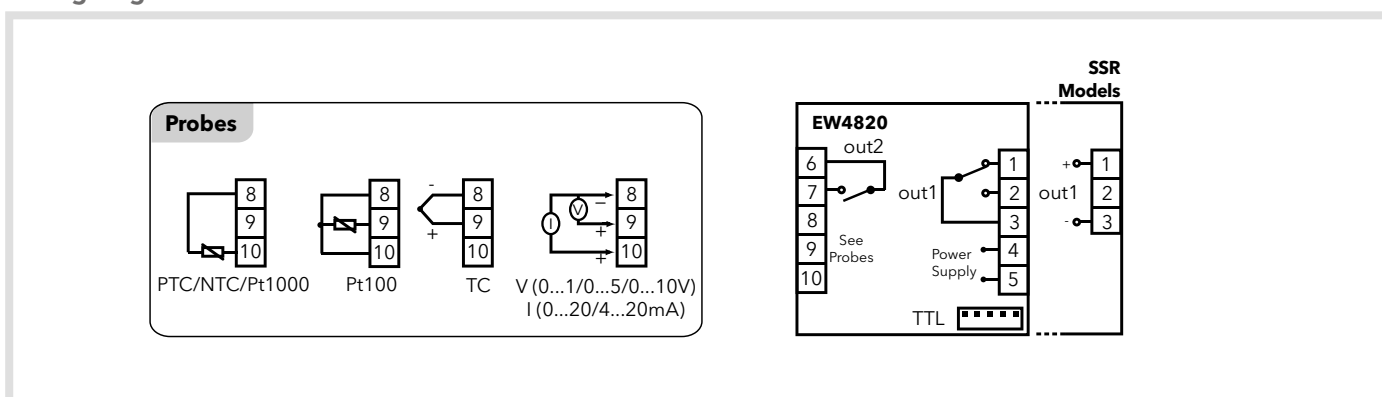
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b> -5...55°C
<b>Dimensions</b>	front panel 48x48 mm, depth 113 mm	<b>Storage Temperature</b> -20...85°C
<b>Installation</b>	panel-mounting, with 45x45 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

## Technical data

	EW 4820 (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 250 V~ 1 SPST 2A 250 V~
<b>Digital outputs - SSR models:</b>	$V_{out} = 0...12 V_{\sim} / I_{max} = 0...15 mA / V_{min} = 7.5 V$ 1 SPST 2A 250 V~
Analogue output:	not available
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>• 2.45W 12...24 V~/12...36 V= model</li> <li>• 2.40W for 100...240 V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12...24 V~/12...36 V= <math>\pm 10\%</math> 50/60 Hz</li> <li>• 100...240 V~ <math>\pm 10\%</math> 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# EW4822 (SSR)

Universal 48x48 controllers with serial port



Codes	Description	Probe*	Power supply
<b>E481BPISBH700</b>	EW4822	Pt100	100...240V~
<b>E481BIISBH700</b>	EW4822	4...20 mA	100...240V~
<b>E481SPISBH700</b>	EW4822 SSR output	Pt100	100...240V~

\* probe not included

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature control.

## Common features

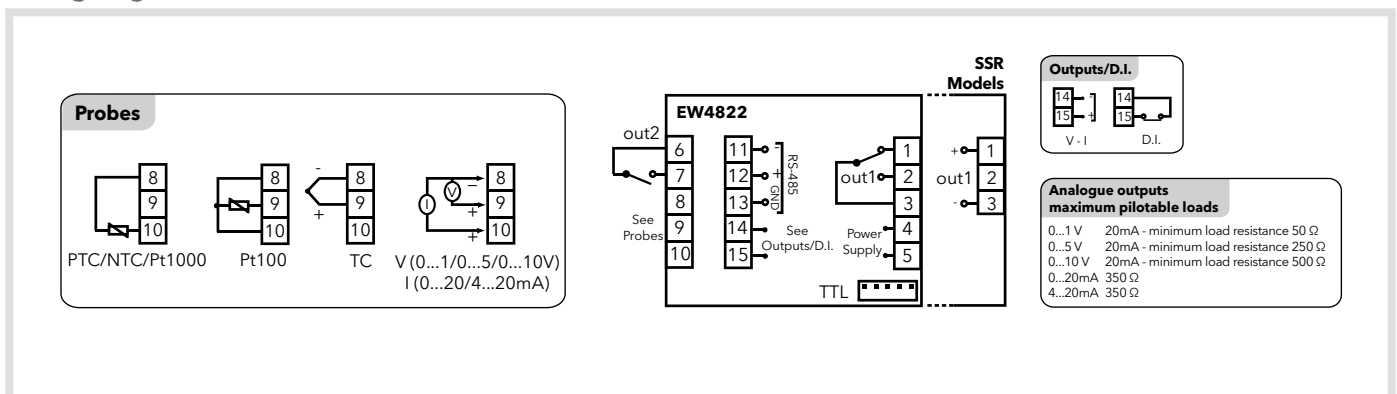
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	<b>Operating temperature</b> -5...55°C
<b>Dimensions</b>	front panel 48x48 mm, depth 113 mm	<b>Storage Temperature</b> -20...85°C
<b>Installation</b>	panel-mounting, with 45x45 mm (+0.2/-0.1 mm) drilling 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 TelevisSystem + internal RS-485 for connection to systems with ModBus protocol
Digital outputs:	1 SPDT 3A 250 V~ 1 SPST 2A 250 V~
<b>Digital outputs - SSR models:</b>	<b>Vout = 0...12 VC / Imax = 0...15 mA / Vmin = 7.5 V</b> <b>1 SPST 2A 250 V~</b>
Analogue output:	V: 0...1 V, 0...5 V, 0...10 V or I: 0...20 mA, 4...20 mA 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...24 V~/12...36 V= model</li> <li>• 2.60W for 100...240 V~ model</li> </ul>
Power supply:	<ul style="list-style-type: none"> <li>• 12...24 V~/12...36 V= ±10% 50/60 Hz</li> <li>• 100...240 V~ ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# EW 7220

Universal 72x72 controllers



Codes	Description	Probe*	Power supply
<b>E7212E0XBH700</b>	EW7220	Pt100	100...240V~
<b>E7212A0XBD700</b>	EW7220	TC	100...240V~
<b>E7212I0XBH700</b>	EW7220	V/I	100...240V~
<b>E7212N0XBD700</b>	EW7220	NTC/PTC/Pt1000	100...240V~

\* probe not included

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature 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 72x72 mm, depth 80 mm	<b>Storage Temperature</b> -20...85°C
<b>Installation</b>	panel mounting with 67x67 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

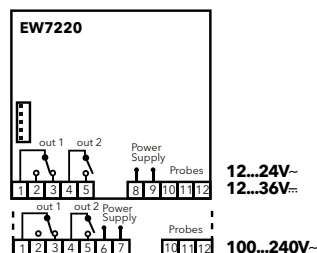
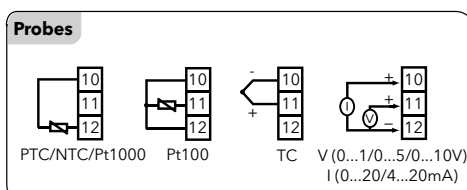
## Technical data

### EW 7220

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, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250 V~ 1 SPST 8(3)A 250 V~
Analogue output:	not available
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	3W max
Power supply:	<ul style="list-style-type: none"> <li>• 12...24 V~/12...36 V<math>\bar{=}</math> <math>\pm</math>10% 50/60 Hz</li> <li>• 100...240 V~ <math>\pm</math>10% 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams





# EW 7222

Universal 72x72 controllers with serial port



Codes	Description	Probe*	Power supply
<b>E7213PASBH700</b>	EW7222 Univ-RS485	Pt100/TC/PTC/NTC/Pt1000	100...240V~
<b>E7213IASBH700</b>	EW7222	Pt100/V/I	100...240V~

\* probe not included

## Applications

The Eliwell thermoregulators in the Universal Controller series are ideal for all industrial applications requiring high precision temperature 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 72x72 mm, depth 80 mm	<b>Storage Temperature</b> -20...85°C
<b>Installation</b>	panel mounting with 67x67 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

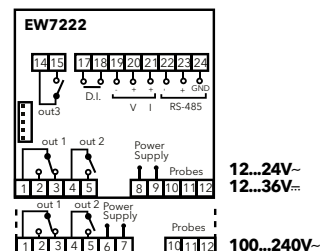
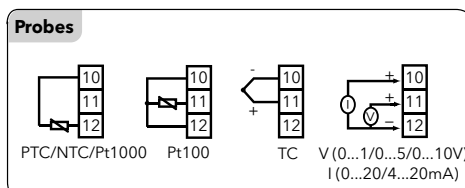
## Technical data

### EW 7222

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, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250 V~ 1 SPST 8(3)A 250 V~ 1 SPST 5A 250 V~
Analogue output:	V-I: 0...1 V, 0...5 V, 0...10 V / 0...20 mA, 4...20 mA
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...24 V~/12...36 V= ±10% 50/60 Hz</li> <li>100...240 V~ ±10% 50/60 Hz</li> </ul>

\*(selectable by parameter)

## Wiring diagrams



# EWTS 950 LX - EWTS 990 LX

32x74 timers and counters



Codes	Description	Power supply
<b>ET01010XTT700</b>	EWTS 950 LX	230 V~
<b>ET02010XTT700</b>	EWTS 990 LX	230 V~

## Applications

The Eliwell series of digital timers are the ideal measuring solution for use in commercial refrigeration and light industry. The range, which consists of 2 different models, can be used in all applications requiring precision control of processing stages and the management of functions linked to preset time intervals.

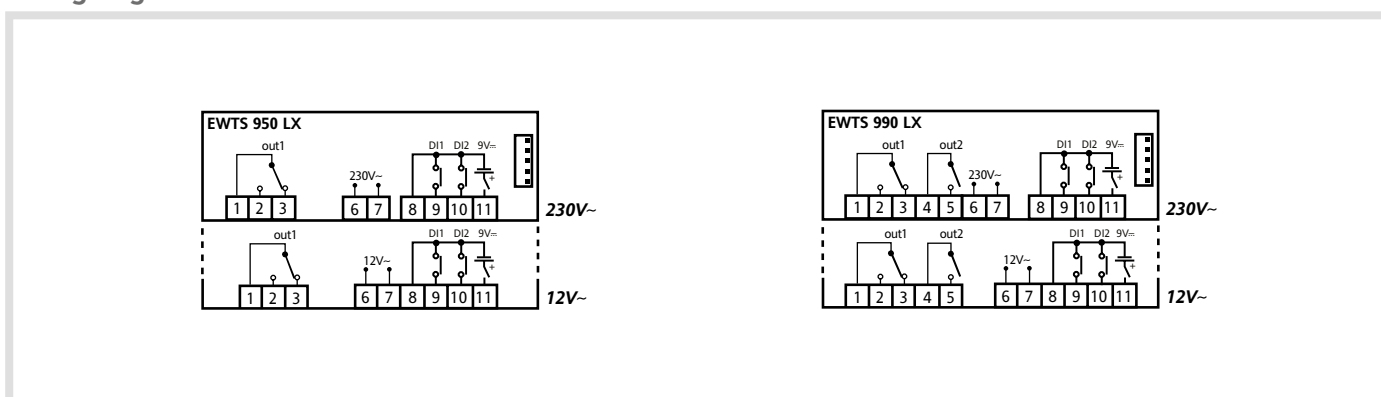
## Common features

<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 32x74 mm, depth 59 mm	<b>Storage Temperature</b> -30...85°C
<b>Installation</b>	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	<b>Ambient humidity for operation and storage</b> 10...90% RH (non-condensing)

## Technical data

	EWTS 950 LX	EWTS 990 LX
Display range:	9999 hours / 99 hours and 59 minutes / 99 minutes and 59 seconds / 99 seconds and 99 hundredths of a second	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	no decimal point * 4 digits + sign
Digital inputs:	2 clean contacts at extra low safety voltage	2 clean contacts at extra low safety voltage
Connections:	TTL port for connection to Copy Card and Televis <b>System</b>	TTL port for connection to Copy Card and Televis <b>System</b>
Digital outputs:	1 SPDT 8(3)A 1/2hp 250 V~	1 SPDT 8(3)A 1/2hp 250 V~ 1 SPST 8(3)A 1/2hp 250 V~
Accuracy:	3.6 sec/h	3.6 sec/h
Power consumption:	3 VA max	3 VA max
Power supply:	12 V~/= or 230 V~ ±10% 50/60 Hz	12 V~/= or 230 V~ ±10% 50/60 Hz
External battery:	<ul style="list-style-type: none"> <li>power supply 9 V=</li> <li>battery duration: based on model, with 9 V= /10 mA/h battery duration 1h</li> <li>instrument absorption with power supply from 10 mA battery</li> </ul>	<ul style="list-style-type: none"> <li>power supply 9 V=</li> <li>battery duration: based on model, with 9 V= /10 mA/h battery duration 1h</li> <li>instrument absorption with power supply from 10 mA battery</li> </ul>

## Wiring diagrams



# EWRC 300 LX - EWRC 500 LX

Control panels for cold rooms



Codes	Description	N.B
RCP3HDTX1H710	EWRC 300 LX removable	RTC/HACCP
RCP3UDTX1H710	EWRC 500 LX removable	RTC/HACCP
RCP3UDVX1H710	EWRC 500 LX removable	RTC/Main Switch
KP250110	Kit RS-485	

## Applications

Controllers for static and ventilated cold rooms with single-phase compressors with up to 2 hp for on-board installation.  
EWRC 300 LX and EWRC 500 LX are equipped with with 3 and 5 configurable relays respectively.

## Common features

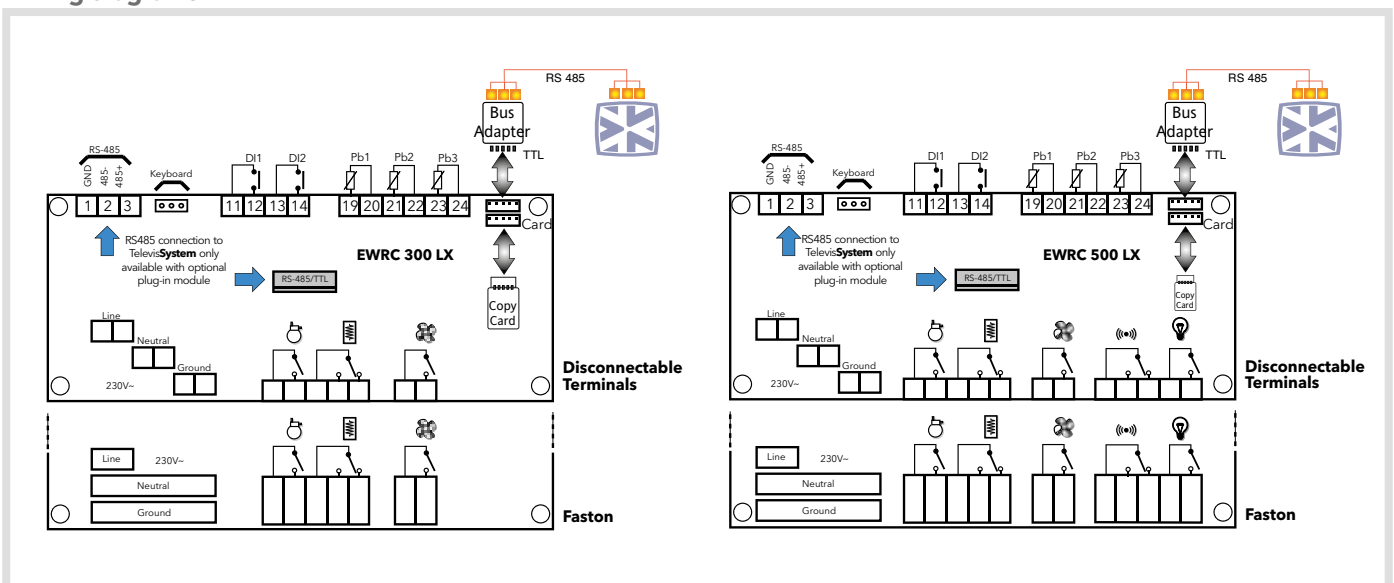
<b>Front panel protection rating</b>	IP54	<b>Operating temperature</b>	-5...50°C
<b>Container</b>	Bayblend FR110	<b>Storage Temperature</b>	-20...85°C
<b>Dimensions</b>	front panel 210x245 mm, depth 90 mm	<b>Ambient operation and storage humidity</b>	10...90% RH (non-condensing)
<b>Installation</b>	wall-mounted		

## Technical data

	EWRC 300 LX	EWRC 500 LX
Display range:	<ul style="list-style-type: none"> <li>• NTC probe: -50.0...110.0°C</li> <li>• PTC 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...150.0°C</li> </ul>
Display:	no decimal point * 2 displays: 3 digits + sign and 4 digits	no decimal point * 2 displays: 3 digits + sign and 4 digits
Analogue inputs:	3 x NTC/PTC *	3 x NTC/PTC *
Digital inputs:	2 clean contacts at extra low safety voltage*	2 clean contacts at extra low safety voltage*
Connections:	TTL port and RS-485 (with optional plug-in module) for connection to CopyCard, TelevisSystem and systems based on ModBus protocol	TTL port and RS-485 (with optional plug-in module) for connection to CopyCard, TelevisSystem and systems based on ModBus protocol
Digital outputs:	1 SPST 2Hp 12(12)A 250 V~ 1 SPDT 1Hp 8(8)A 250 V~ 1 SPST ½Hp 8(4)A 250 V~	1 SPST 2Hp 12(12)A 250 V~ 1 SPDT 1Hp 8(8)A 250 V~ 1 SPST 250 V~ 1 SPDT ½Hp 8(4)A 250 V~ 1 SPST 1hp 8(8)A 250 V~
Measurement range:	-55...150°C	-55...150°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power supply:	230 V~ ±10% 50/60 Hz	230 V~ ±10% 50/60 Hz
Power consumption:	14W max	14W max
Power terminals:	6.3 mm faston - removable terminals	6.3 mm faston - removable terminals
HACCP:	optional	optional
Clock:	optional	optional
Power switch:	optional	optional

\* (selectable by parameter)

## Wiring diagrams



# WM 961 - WM 971

Wall mounted refrigeration thermostats



Codes	Description	Probe	Power supply
<b>WM1GDL00BHH00</b>	WM 961/A	NTC	100...240 V
<b>WM2IDB00CHH00</b>	WM 971	NTC	100...240 V

## Applications

WM 961 and WM 971 controllers are one-step devices for wall mounting. They can be used as a simple thermostat or for 'cold' or 'hot' setting.

## Common features

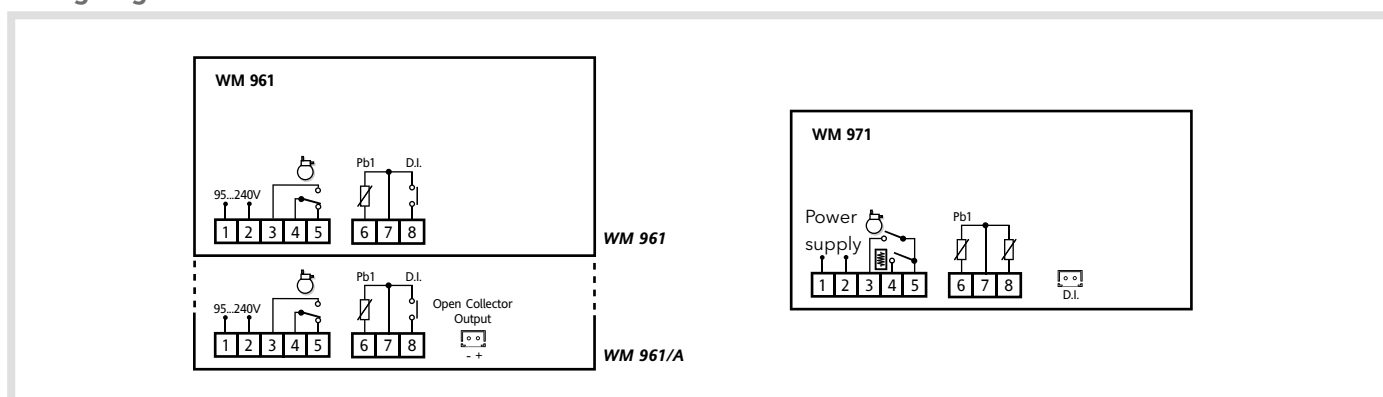
<b>Front panel protection rating</b>	IP30	<b>Installation</b>	wall-mounted
<b>Container</b>	ABS plastic body (white box), PC+ABS (black back plate), polycarbonate window, switch keys with adhesive polycarbonate film	<b>Operating temperature</b>	-5...55°C
<b>Dimensions</b>	front panel 124x80 mm, depth 25 mm (no terminals)	<b>Storage Temperature</b>	-30...85°C
		<b>Ambient humidity for use and storage</b>	10...90% RH (non-condensing)

## Technical data

	WM 961	WM 971
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:	1 PTC or NTC *	2 PTC or NTC *
Digital inputs:	1 voltage-free input *	1 voltage-free inputs *
Digital outputs:	1 SPDT 16A 1hp 250 V~ + 1 open collector PNP output (version /A only)	2 SPST 3A 1/4hp 250 V~
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	2W max	2W max
Power supply:	100...240 V~ ±10% 50/60 Hz	100...240 V~ ±10% 50/60 Hz

\* (selectable by parameter)

## Wiring diagrams



# EWCM 4120 - 4150 - 4180

32x74 controllers for cooling plants



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

<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 rooms, where ease of use, high control reliability and versatility are essential features for meeting all operational requirements.

## 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 32x74 mm, depth 70 mm	<b>Ambient humidity for operation and storage</b>	10...90% RH (non-condensing)
<b>Installation</b>	panel-mounted, with 71x29 mm hole		

## Technical data

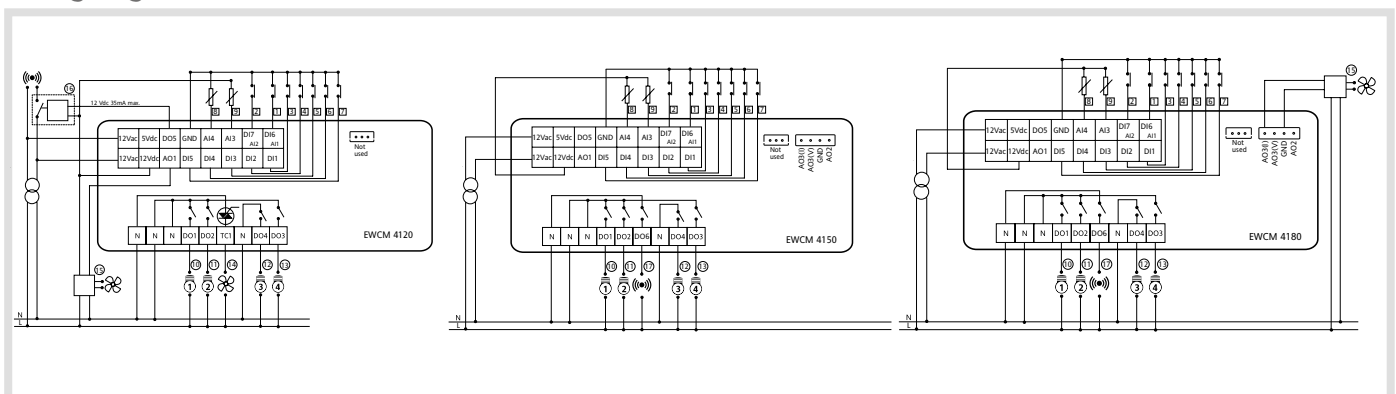
	EWCM 4120	EWCM 4150	EWCM 4180
Analogue inputs:	2 4...20 mA / ratiometric 0...5 V / 0...10 V / NTC / D.I.*	2 4...20 mA / ratiometric 0...5 V / 0...10 V / NTC / D.I.*	2 4...20 mA / ratiometric 0...5 V / 0...10 V / NTC / D.I.*
Digital inputs:	7 SELV contacts	7 SELV contacts	7 SELV contacts
Analogue outputs:	<ul style="list-style-type: none"> <li>• TRIAC</li> <li>• PWM - Open Collector</li> </ul>	-	-
Digital outputs:	4 SPST 2A 250 V~ + Open Collector	5 SPST 2A 250 V~ + Open Collector	5 SPST 2A 250 V~ + 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:	5 VA max	5 VA max	5 VA max
Power supply:	12 V~ ±10% 50/60 Hz	12 V~ ±10% 50/60 Hz	12 V~ ±10% 50/60 Hz

\* (selectable by parameter)

## KIT

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

## Wiring diagrams



# EWCM 8900 - 9100 EO

DIN controllers for cooling plants



Codes	Description	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>	3 m cable keyboard-base	
<b>CCA0BUI02N000</b>	USB Copy Card	

\* The letter in this position indicates the languages available for the code:  
 in 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 EWCM EO (Environmental Optimised) controllers for compressor rooms 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 makes 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 tandem by plug-n-play V190 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

## Common features

<b>Insulation Class</b>	2
<b>Operating temperature</b>	-5...55°C
<b>Storage Temperature</b>	-30...85°C

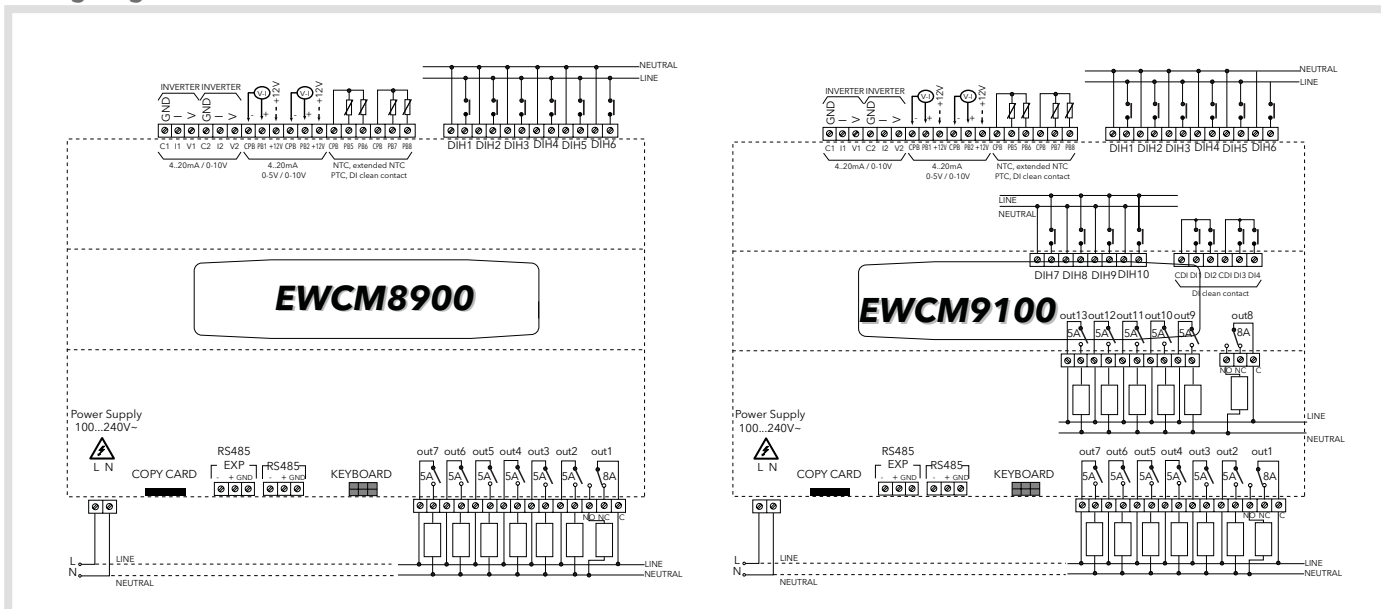
**Ambient humidity for operation and storage** 10...90% RH (non-condensing)

**Connector for base-keyboard connection** rapid 6-way connector

## Technical data

	EWCM 8900	EWCM 9100
Container:	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60 mm)	PC+ABS UL94 plastic resin casing V-0 13DIN module (227.5x110x60 mm)
Mounting:	on DIN Omega rail	on DIN Omega rail
Analogue inputs:	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20 mA / 0...5 V / 0...10 V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20 mA / 0...5 V / 0...10 V)
Digital inputs:	6 voltage (100...240 V~)	10 voltage (100...240 V~) + 4 configurable voltage-free.
Analogue outputs:	2 voltage/current (0...10 V/4...20 mA)	2 voltage/current (0...10 V/4...20 mA)
Digital outputs:	6 SPST 5(2)A 250 V~ + 1 SPDT 8(3)A 250 V~	11 SPST 5(2)A 250 V~ + 2 SPDT 8(3)A 250 V~
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	• 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	LCD on external keyboard
Functions:	inverter control both in suction and delivery	inverter control both in suction and delivery
Clock:	present	present
Power consumption:	20W	20W
Power supply:	100...240 V~ ±10% 50/60 Hz	100...240 V~ ±10% 50/60 Hz

## Wiring diagrams





# EWCM 9900 EO

DIN controllers for cooling plants



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

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

## Applications

The new series of EWCM EO (Environmental Optimised) controllers for compressor rooms 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 makes 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 tandem by plug-n-play V190 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

## Common features

<b>Insulation Class</b>	2
<b>Operating temperature</b>	-5...55°C
<b>Storage Temperature</b>	-30...85°C

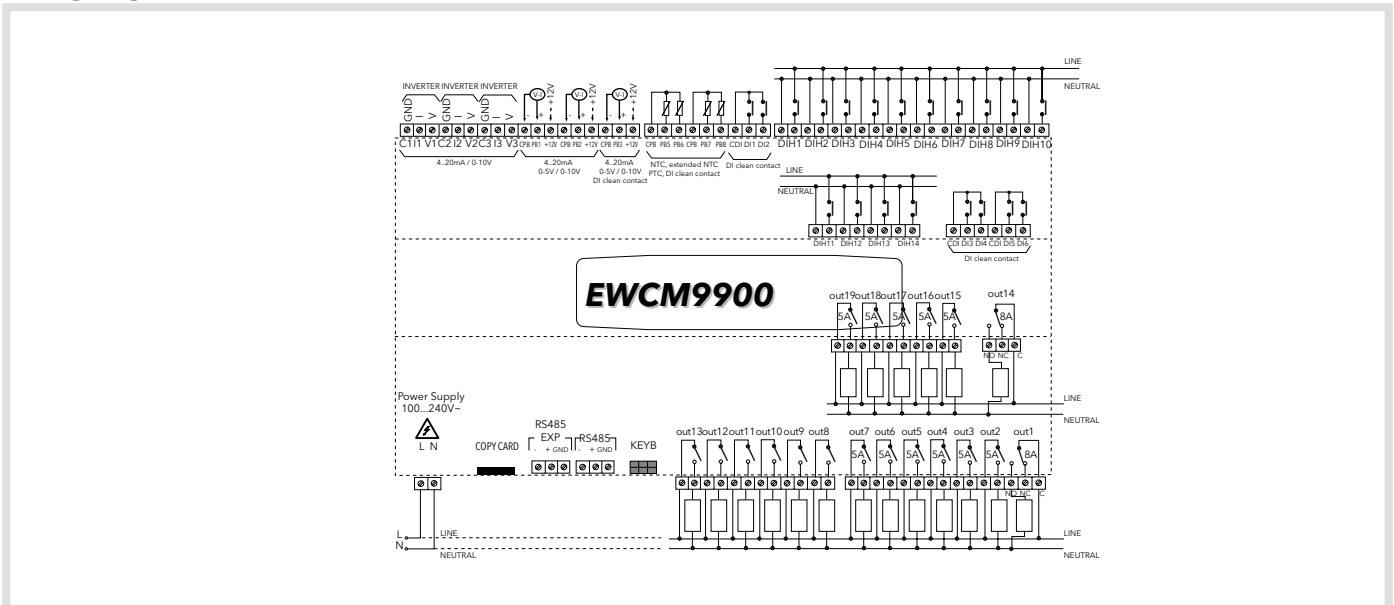
**Ambient humidity for operation and storage** 10...90% RH (non-condensing)

**Connector for base-keyboard connection** rapid 6-way connector

## Technical data

EWCM 9900	
Container:	PC+ABS UL94 V-0 plastic resin casing, 18 DIN modules (315x110x60 mm)
Mounting:	on DIN Omega bar support
Analogue inputs:	4 NTC/NTC extended/PTC/DI + 2 high precision current/voltage (4...20 mA / 0...5 V / 0...10 V) + 1 current/voltage (4...20 mA / 0...5 V / 0...10 V)
Digital inputs:	14 voltage (100...240 V~) + 6 configurable voltage-free.
Analogue outputs:	3 voltage/current (0...10 V/4...20 mA)
Digital outputs:	17 SPST 5(2)A 250 V~ + 2 SPDT 8(3)A 250 V~
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>
Display:	LCD on external keyboard
Functions:	inverter control both in suction and delivery
Clock:	present
Power consumption:	20W
Power supply:	100...240 V~ ±10% 50/60 Hz

## Wiring diagrams



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

Speed controllers for single-phase fans



Codes	Description	Power supply	Function
<b>FA53370000</b>	FASEC 33	220 V~	condensation
<b>FA54370000</b>	FASEC 43	220 V~	evaporation
<b>FA55370000</b>	FASEC 53	220 V~	manual

\* probe not included

## Applications

The FASEC 33 and FASEC 43 (C) are designed for speed control and are particularly suited to fan regulation, on refrigeration units. FASEC 53 is a manual fan regulator suitable for refrigeration units.

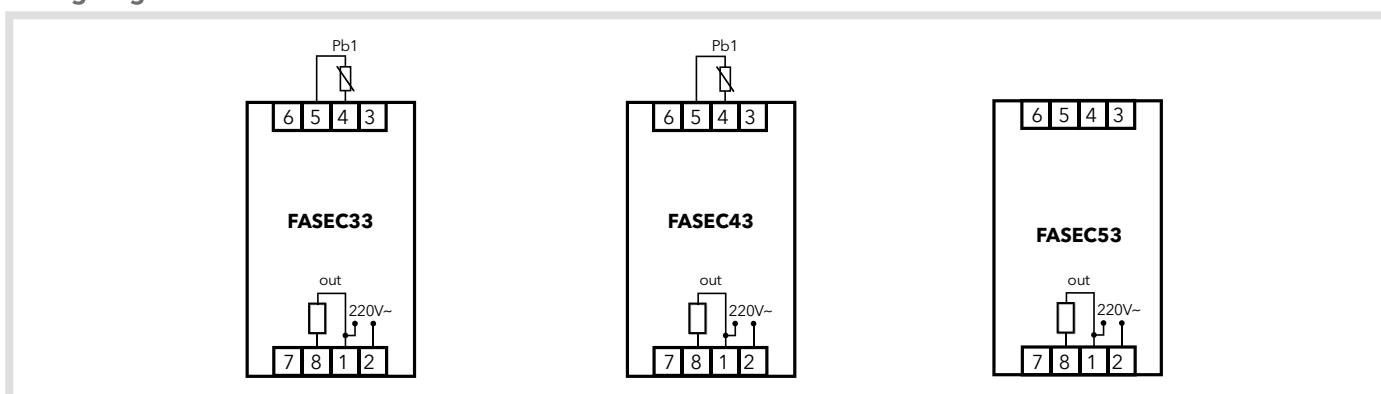
## Common features

<b>Front panel protection rating</b>	IP20	<b>Installation</b>	panel-mounted, with 45x92 mm hole
<b>Container</b>	plastic body in flame-retardant NORYL	<b>Operating temperature</b>	-5...60°C
<b>Dimensions</b>	front panel 48x96 mm, depth 96 mm 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 2.5A triac, 7A triac	1 2.5A triac, 7A triac	1 2.5A triac, 7A triac
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 38 mm, height 28 mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38 mm, height 28 mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38 mm, height 28 mm; M8 fixing bolt
Type of setting:	proportional phase capacity step	proportional phase capacity step	manual phase capacity step
Type of function:	for condensation	for evaporation	manual
Power supply:	220 V~ ±10% 50/60 Hz	220 V~ ±10% 50/60 Hz	220 V~ ±10% 50/60 Hz

## Wiring diagrams



# FASEC 100 - FASEC 105 - FASEC 155

Speed controllers for single-phase fans



Codes	Description	Power supply	Function
<b>FA100780</b>	FASEC 100	220 V~	condensation./evaporation
<b>FA105780</b>	FASEC 105	220 V~	condensation./evaporation
<b>FA155700</b>	FASEC 155	220 V~	manual

\* probe not included

## Applications

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

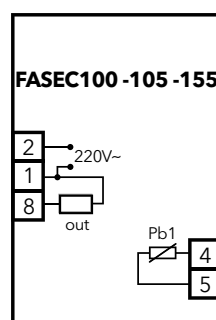
## Common features

<b>Installation</b>	panel-mounted or on panel back (FASEC 100), wall-mounted (FASEC 105, 155)	<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:	220 V~ ±10% 50 Hz	220 V~ ±10% 50 Hz	220 V~ ±10% 50 Hz
Pilotable power:	5A	7A	7A
Type of control:	automatic	automatic	automatic

## Wiring diagrams



# FASEC 500 - FASEC 505 - FASEC 555

Speed controllers for single-phase fans



Codes	Description	Power supply
<b>FA500780</b>	FASEC 500	220 V~
<b>FA505780</b>	FASEC 505	220 V~
<b>FA555700</b>	FASEC 555	220 V~

\* probe not included

## Applications

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

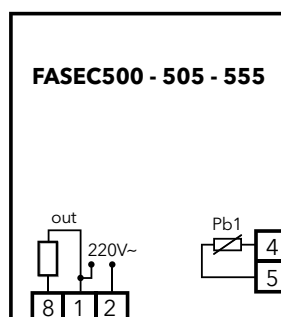
## Common features

<b>Installation</b>	panel-mounted or on panel back (FASEC 500), wall-mounted (FASEC 505, 555)	<b>Operating temperature</b> -5...60°C <b>Storage Temperature</b> -30...75°C
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## 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:	220 V~ ±10% 50 Hz	220 V~ ±10% 50 Hz	220 V~ ±10% 50 Hz
Pilotable power:	23A	23A	23A
Type of control:	automatic	automatic	automatic

## Wiring diagrams



# CFS02- CFS04 - CFS06 - CFS08

Power modules to control fan speed



Codes	Description
<b>CF10x11011000</b>	CFS0x
<b>CF10x21011000</b>	CFS0x /V
<b>CF10x31011000</b>	CFS0x /I

x=2,4,6,8

## Applications

The new CFS range consists of 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 230 V~ max.

## Features

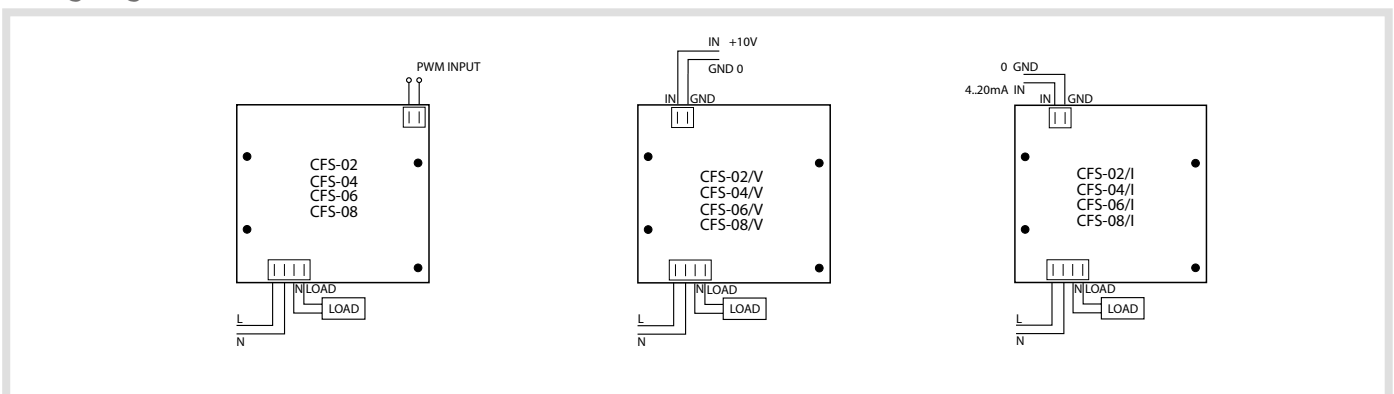
CFS regulators come in an 'open board' format and are available in various models (see table).

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 02-04-06-08/I
Dimensions:	<b>CFS02:</b> 90.0x83.0x38.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS 04:</b> 90.0x83.0x51.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS06:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB) <b>CFS08:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB)	<b>CFS02/V:</b> 90.0x83.0x38.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS04/V:</b> 90.0x83.0x51.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS06/V:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB) <b>CFS08/V:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB)	<b>CFS02/I:</b> 90.0x83.0x38.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS04/I:</b> 90.0x83.0x51.0 mm (LxDxH)+1.6 mm (PCB) <b>CFS06/I:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB) <b>CFS08/I:</b> 90.0x83.0x63.5 mm (LxDxH)+1.6 mm (PCB)
Power supply	230 V~ ±10% 50 Hz	230 V~ ±10% 50 Hz	230 V~ ±10% 50 Hz
Rated current at 40°C:	2.5A - CFS02 model 5A - CFS04 model 7A - CFS06 model 9A - CFS08 model	2.5A - CFS02/V model 5A - CFS04/V model 7A - CFS06/V model 9A - CFS08/V model	2.5A - CFS02/I model 5A - CFS04/I model 7A - CFS06/I model 9A - CFS08/I model
Rated current at 50°C:	2A - CFS02 model 4A - CFS04 model 6A - CFS06 model 8A - CFS08 model	2A - CFS02/V model 4A - CFS04/V model 6A - CFS06/V model 8A - CFS08/V model	2A - CFS02/I model 4A - CFS04/I model 6A - CFS06/I model 8A - CFS08/I model
Type of control signal:	PWM	0...10 V $\approx$	4...20 mA
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



# DRM300 - RGM300

Speed controllers for three-phase fans



Codes	Description	Details
<b>ND312400CS01</b>	DRM300 12A SCR 0-10 V 400 V IP55	Slave
<b>ND320400CS01</b>	DRM300 20A SCR 0-10 V 400 V IP55	Slave
<b>ND328400CS01</b>	DRM300 28A SCR 0-10 V 400 V IP55	Slave
<b>AR312400UPPS1</b>	RGM300 12A SCR NTC 400 V IP55	Master/Slave
<b>AR360400UPPS1</b>	RGM300 60A SCR NTC 400 V IP55	Master/Slave

## Applications

Regulators in the DRM300 and RGM300 range are three-phase multi-function power units that are 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.

## Common features

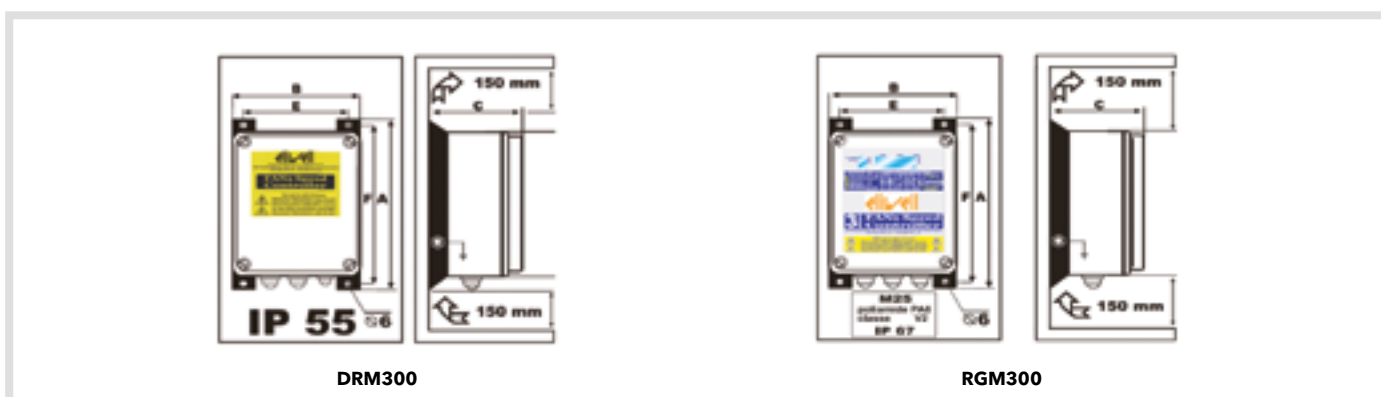
Flexible and can be used straight away	Signals in mA - V <sub>DC</sub> - PWM
Includes Quick Start mode, with all regulation parameters preset	The software supervises regulator and fan operations

## Technical data

	DRM300 12A - 20A - 28A	RGM300 12A - 60A
Dimensions:	<b>12A Models:</b> 201x285x130 mm (BxAxC) <b>20A Models:</b> 235x350x181 mm (BxAxC) <b>28A Models:</b> 235x350x204 mm (BxAxC)	<b>12A Models:</b> 201x285x130 mm (BxAxC) <b>60A Models:</b> 315x460x228 mm (BxAxC)
Power supply:	400 V~ extended range (min 340 V - max 480 V) -15% / +20% three-phase	400 V~ -15% / +20%
Frequency:	50/60 Hz with recognition and automatic selection of network frequency	50/60 Hz with automatic selection
Rated current @50°C:	12A - 20A - 28A based on model	12A - 60A based on model
Control circuit power:	5 VA	10 VA
Power dissipated 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...10 V <sub>DC</sub> 4...20 mA PWM	0...10 V <sub>DC</sub> 0...5 V <sub>DC</sub> 4...20 mA 0...20 mA
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





# WM 253

Speed controllers for single-phase wall fans



Codes	Description	Probe	Power supply
VM253710	WM 253 Manual	-	230 V~

## Applications

WM 253 units are manual fan regulators suitable for refrigeration and air conditioning systems.

## Common features

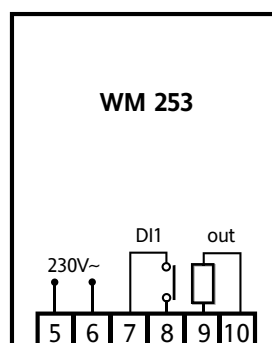
<b>Front panel protection rating</b>	IP50	<b>Operating temperature</b>	-5...55°C
<b>Container</b>	Flame retardant ABS plastic with snap closure	<b>Storage temperature</b>	-30...75°C
<b>Dimensions</b>	front panel 75x108 mm, depth 49 mm	<b>Ambient operation and storage humidity</b>	10...90% RH (non-condensing)
<b>Installation</b>	wall-mounted, fixing screws provided		

## Technical data

### WM 253

Connections:	on screw-on terminal block for max 2.5 mm 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:	3 VA max
Power supply:	230 V~ ±10% 50 Hz

## Wiring diagrams



# FASEC 255

Speed control of single-phase fans for counters



Codes	Description	Probe	Power supply
FA25500700	FASEC 255	-	230 V~

## Applications

The FASEC 255 is an electronic instrument designed for manually controlling the speed of single-phase fans. It is suitable for both evaporation and condensation applications on refrigeration units.

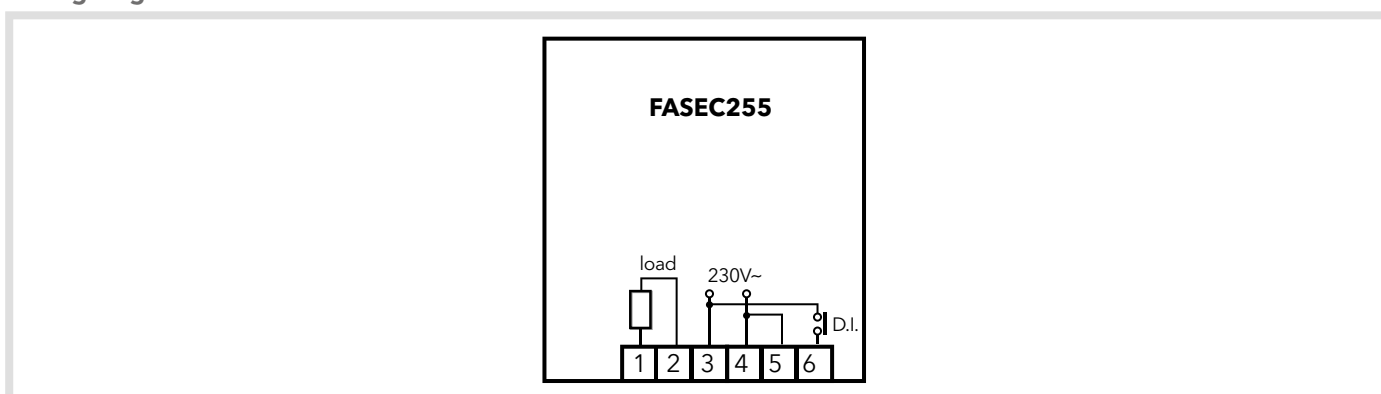
## Common features

<b>Installation</b>	wall-mounted	<b>Storage temperature</b>	-30...75°C
<b>Operating temperature</b>	-5...40°C		

## Technical data

	FASEC 255
Casing:	plastic GEWISS GW44005
Front panel:	IP55
Connections:	on screw-on terminal block
Digital input:	voltage to 230 V~
Setting output:	TRIAC 2.5A max
Type of setting:	proportional phase capacity step
Power consumption:	1.5 VA max
Power supply:	230 V~ ±10% 50/60 Hz

## Wiring diagrams



## SOLUTIONS FOR SUPERMARKETS

In the retail sector, fresh and frozen food sales have traditionally been areas of high energy consumption. Technologies are now available from Eliwell which can deliver up to 24% savings in energy consumption.

Energy saving solutions must also satisfy the basic requirement for food quality as defined by HACCP regulations and European standards

(EN 13845-EN 12830) which cover fresh and frozen food products.

Eliwell offers a product range meeting both energy efficiency and food storage requirements of customers. For Eliwell, eco-sustainability also means offering open solutions capable of integrating a variety of system components, such as lighting, air conditioning and domestic water into a single solution.



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

DIN controllers for remote EEV systems



Codes	Description
<b>EWKRTX0000000</b>	KIT RTX600/V + KDEPlus
<b>RTXNVBM0S3H00</b>	RTX600/V
<b>RTDNVBM4S3H00</b>	RTD600/V
<b>KDE400E004000</b>	KDEPlus
<b>EH000050V4000</b>	ECPlus

## Applications

**RTX600/V** and **RTD600/V** are environmental optimised electronic devices used with electronic expansion valves to control remote counters. They can be used singly or together in islands or they can be ducted. Controller flexibility enables fast selection of applications for horizontal, vertical, combined, open and closed counters and includes specific cold room control functions.

The RTX600/V and RTD600/V controllers can be interfaced with a KDEPlus keyboard and the ECPlus display module.

## Features

Single model for **EEV pulse** valves AC and DC powered

**Eight configurations** pre-loaded

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

Control of heating elements of frames / anti-mist resistances

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

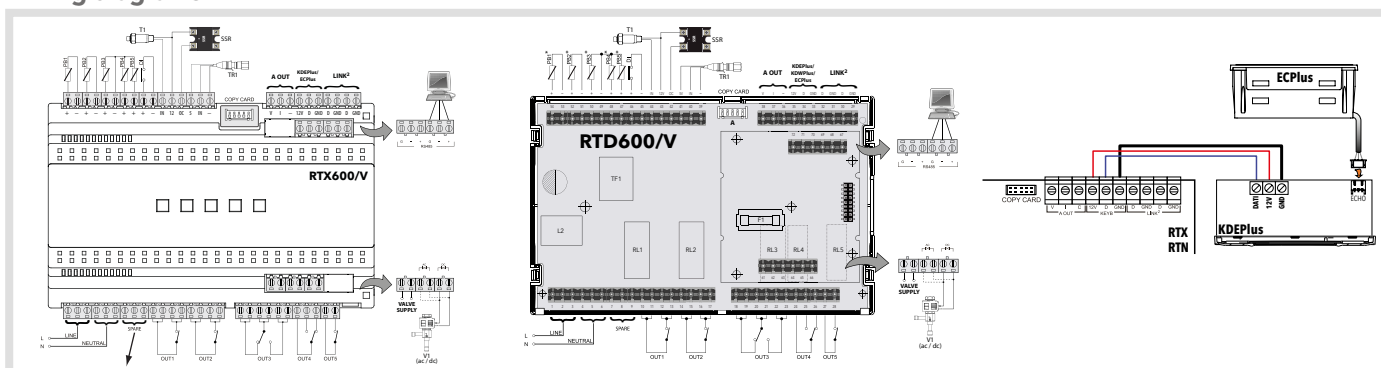
Compatible with NTC, Pt1000, PTC probes

## Technical data

	RTX600/V - RTD600/V	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
Mounting:	on DIN Omega bar support	panel-mounting, with 71x29 mm (+0.2/-0.1 mm) drilling template with decimal point ° 3 digits + sign	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template with decimal point ° 3 digits + sign
Display:	-	see power board	see power board
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.* 1 4...20 mA/D.I.* 1 ratiometric/D.I.*	-	-
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 <b>TeleviSystem</b> or ModBus monitoring system</li> <li>• 1 TTL port for connection to Unicard and 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>	<ul style="list-style-type: none"> <li>• JST for connection to KDEPlus user terminal</li> </ul>
Digital outputs:	2 SPST 16(8)A max 250 V~ 2 SPDT 16(8)A + 8(4)A max 250 V~ 1 SPST 8(4)A max 250 V~ 1 O.C. multifunction: 12 V= 20 mA 1 SSR 100...240V~/~; I <sub>max</sub> =300 mA	-	-
Analogue outputs:	1 D.A.C. multifunction: 0...10 V/4...20 mA	-	-
Accuracy:	better by 1.0%	-	-
Resolution:	1 or 0.1°C	-	-
Power supply:	SMPS 100...240 V~ ±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 base)

## Wiring diagrams





# RTX600 - KDEPlus - KDWPlus - ECPlus

DIN controllers for counters and cold rooms



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

## Applications

**RTX600** is an environmentally optimised electronic device with a thermostatic valve specifically designed for plug-in applications. The RTX600 controller can be interfaced with a KDEPlus keyboard and the ECPlus display module.

## Features

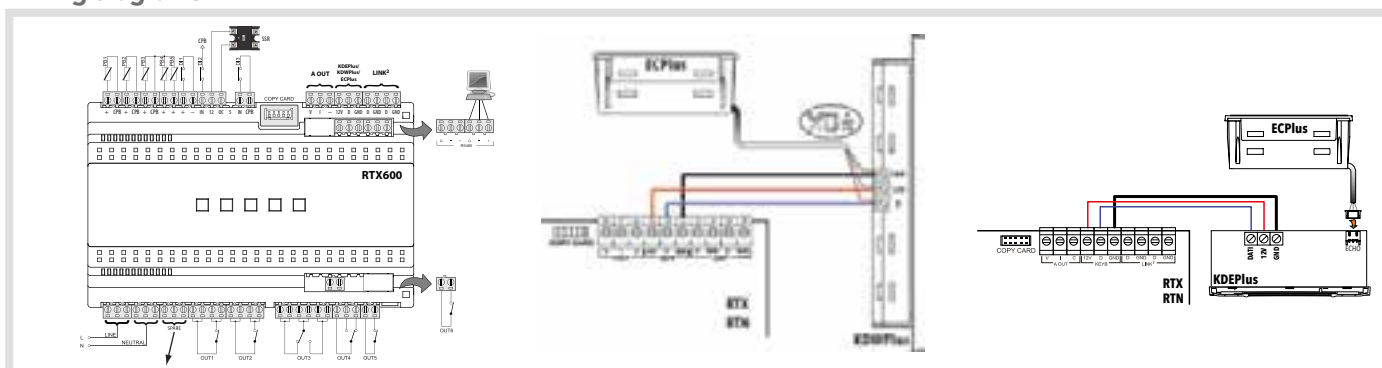
Relay of up to <b>2HP</b> for direct control of loads.	Control of heating elements of frames / anti-mist resistances
Removable terminals and customised quick connections	Rapid synchronisation of ducted and island cabinets with <b>Link<sup>2</sup></b> plug-n-play
Intelligent defrosting (with clock) to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

## Technical data

	RTX600	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	Body and window in polycarbonate
Dimensions:	10 DIN modules	front panel 74x32 mm, depth 30 mm	front panel 180x37 mm, depth 23 mm	front panel 48x28.6 mm, depth 15 mm
Mounting:	on DIN Omega bar support	panel-mounting, with 71x29 mm (+0.2/-0.1 mm) drilling template with decimal point ° 3 digits + sign see power board	panel mounting with 150x31 mm (+0.2/-0.1 mm) drilling template with decimal point ° 3 digits + sign see power board	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template with decimal point ° 3 digits + sign see power board
Display:	-	-	-	-
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 Televis<b>System</b> 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>	<ul style="list-style-type: none"> <li>• screw terminals for connection to power board</li> <li>• JST for connection to ECPlus display</li> </ul>	<ul style="list-style-type: none"> <li>• JST for connection to KDWPlus user terminal or KDEPlus</li> </ul>
Digital outputs:	1 SPST 2HP max 240 V~ 1 SPST + 1 SPDT 1HP max 250 V~ 1 SPDT 8(4)A max 250 V~ 2 SPST 8(4)A max 250 V~ 1 O.C. 12 V= 20 mA	-	-	-
Analogue outputs:	1 D.A.C. 0...10 V/4...20 mA	-	-	-
Accuracy:	better by 1.0%	-	-	-
Resolution:	1 or 0.1°C	-	-	-
Power supply:	SMPS 100...240 V~ ±10% 50/60 Hz	from power board	from power board	from power board
Power consumption:	7.5W max	-	-	-
Ambient operating temperature:	-5...+55°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







# EEV SYSTEM

EEV system for retrofit



Codes	Description	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.

## Models

Code	Description	Details
EVD2A43BSC000	V800/P1	230 V~ valve control. on-board RS-485
EVD2A53BSC000	V800/P3	230 V~ valve control. on-board RS-485
ID34DR4SCDH00	ID 985 /V	Electronic controller with V800 driver control via LAN serial port
WK1400100N000	IWK /V	Remote terminal for parameter config., displ. I/O, alarms, etc.

## Kits

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 x 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>)

## 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. Nine interchangeable orifices are available, with power rating from 1 kW to 24 kW. This valve must be piloted by a V800 electronic driver. The typical application is in refrigeration such as refrigerated counter displays found in supermarkets.

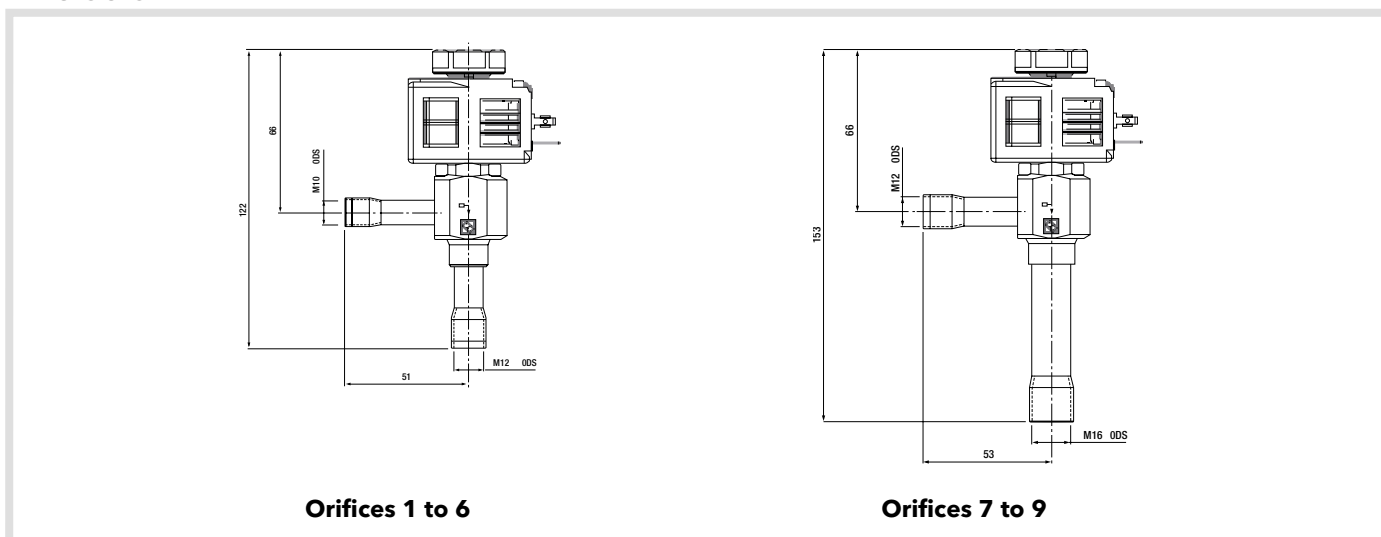
### Technical data

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", 10 mm - 12 mm, 1 / 2" - 5/8", 12 mm - 16 mm
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 minOPD:	0 bar
Maximum open pressure differential MOPD:	18 bar
Maximum operating pressure:	45 bar
Burst Pressure:	330/250 bar
Certifications:	97/23/EC
PED:	Category II art.3.3

### Coils

Type Coil	Eliwell part number	Safety (V~)	Tolerance voltages (%)	Frequency (Hz)	Power (W)	Power consumption		Class of insulation	Maximum Temperature		Electrical connections	Level of protection
						Start	Operation		convolutions (°C)	Environment (°C)		
						(50 Hz)	(50 Hz)					
PXV	PXVB0ARA20000	24	+10 / -10	50/60	8	1490	700	F	110	50	connector DIN 43650 part number PXVB0AR020000	standard IP65 (for IP68 contact the commercial office)
PXV	PXVB0ARA60000	220 / 230	+6 / -10	50/60	8	162	76	F	110	50		
PXV CO <sub>2</sub>	PXVE0ARA60000	220 / 230	+6 / -10	50/60	22	190	110	F	110	50		

### Dimensions



# PXV

## Electronic pulse expansion valve



### General specifications and cooling capacities of valves (common refrigerants)

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m³/h)	Cooling capacity (kW)				
			(inches)		(mm)			Refrigerant				
			IN	OUT	IN	OUT		R22	R134a	R404A - R507	R407C	R410A
PXVB03S010000	1	0.5	3/8"	1/2"	-	-	0.010	1.0	0.9	0.8	1.1	1.3
PXVBM10S01000			-	-	10	12						
PXVB03S020000	2	0.7	3/8"	1/2"	-	-	0.017	1.9	1.7	1.6	2.0	2.4
PXVBM10S02000			-	-	10	12						
PXVB03S030000	3	0.8	3/8"	1/2"	-	-	0.023	2.5	2.0	1.9	2.4	3.0
PXVBM10S03000			-	-	10	12						
PXVB03S040000	4	1.1	3/8"	1/2"	-	-	0.043	3.9	3.2	2.9	3.8	4.8
PXVBM10S04000			-	-	10	12						
PXVB03S050000	5	1.3	3/8"	1/2"	-	-	0.065	6.7	5.6	5.1	6.7	8.4
PXVBM10S05000			-	-	10	12						
PXVB03S060000	6	1.7	3/8"	1/2"	-	-	0.113	9.2	7.7	7.0	9.1	11.4
PXVBM10S06000			-	-	10	12						
PXVB04S070000	7	2.3	1/2"	5/8"	-	-	0.200	14.7	12.2	11.3	15.3	18.2
PXVBM12S07000			-	-	12	16						
PXVB04S080000	8	2.5	1/2"	5/8"	-	-	0.230	17.4	14.7	13.5	17.7	21.6
PXVBM12S08000			-	-	12	16						
PXVB04S090000	9	2.7	1/2"	5/8"	-	-	0.250	19.3	16.3	15.0	19.6	24.1
PXVBM12S09000			-	-	12	16						

Rated cooling capacities are referred to: Evaporation temp. T<sub>evap</sub> = +5°C • Condensation temp. T<sub>cond</sub> = +32°C • Temp. of valve input liquid T<sub>liq</sub> = +28°C

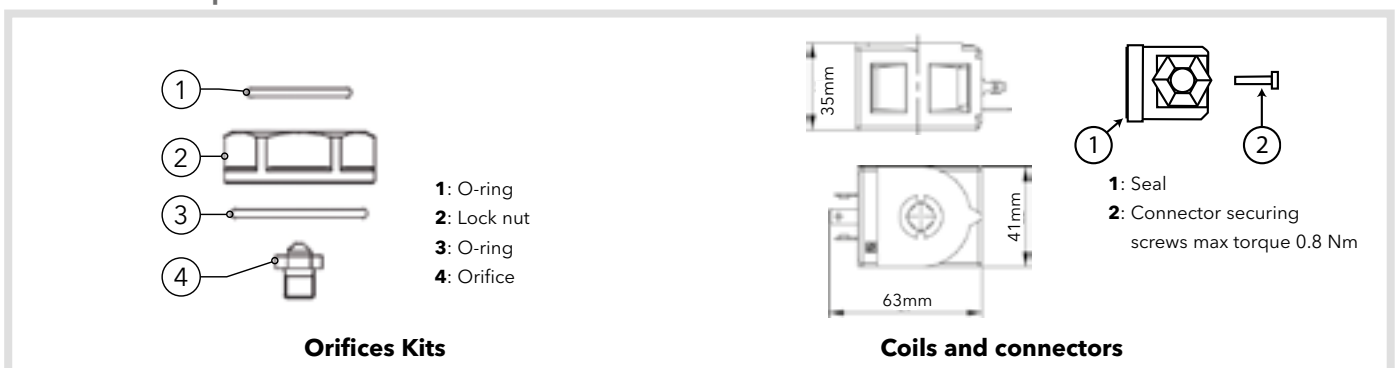
### PXV valves orifice kits

Code	Description	Refrigerants
PXVB0AR630000	N° 1 orifice kit	
PXVB0AR640000	N° 2 orifice kit	
PXVB0AR650000	N° 3 orifice kit	
PXVB0AR660000	N° 4 orifice kit	R22, R134a,
PXVB0AR670000	N° 5 orifice kit	R404A, R407C,
PXVB0AR680000	N° 6 orifice kit	R410A, R507
PXVB0AR690000	N° 7 orifice kit	
PXVB0AR780000	N° 8 orifice kit	
PXVB0AR790000	N° 9 orifice kit	

### Coils and connectors

Code	Description	Refrigerants
PXVB0ARA60000	EEV coil 220/230 V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0ARA20000	EEV coil 24 V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0AR020000	IP65 connector for EEV coil	All

### Dimensions and specifications



# PXV

## Electronic pulse expansion valve



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

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m <sup>3</sup> /h)	Cooling capacity (kW)	
			(inches)		(mm)			Refrigerant	
			IN	OUT	IN	OUT		R744 (CO <sub>2</sub> )	
PXVE03S010000	1	0.5	3/8"	1/2"	-	-	0.010	3.10	
PXVEM10S01000			-	-	10	12			
PXVE03S020000	2	0.7	3/8"	1/2"	-	-	0.017	6.20	
PXVEM10S02000			-	-	10	12			
PXVE03S030000	3	0.8	3/8"	1/2"	-	-	0.023	8.20	
PXVEM10S03000			-	-	10	12			
PXVE03S040000	4	1.1	3/8"	1/2"	-	-	0.043	12.40	
PXVEM10S04000			-	-	10	12			
PXVE03S050000	5	1.3	3/8"	1/2"	-	-	0.065	21.70	
PXVEM10S05000			-	-	10	12			
PXVE03S060000	6	1.7	3/8"	1/2"	-	-	0.113	34.10	
PXVEM10S06000			-	-	10	12			
PXVE03S070000	7	2.3	1/2"	5/8"	-	-	0.200	62.00	
PXVEM10S07000			-	-	12	16			

Rated cooling capacities refer to: Evaporation temp. T<sub>evap</sub> = -35°C • Condensation temp. T<sub>cond</sub> = 0°C • Temp. of valve input liquid T<sub>liq</sub> = -31°C

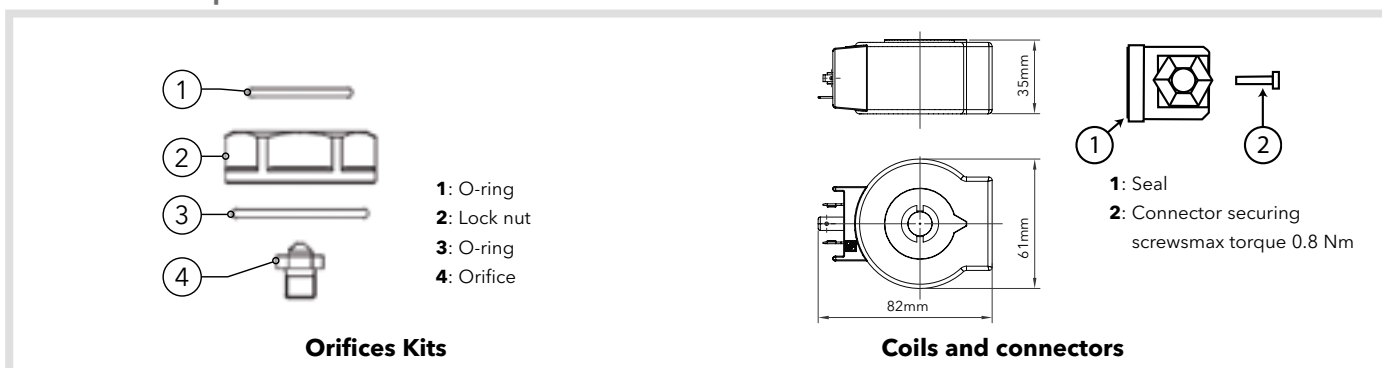
### PXV valves orifice kits

Code	Description	Refrigerants
PXVE0AR630000	CO <sub>2</sub> orifice KIT N°.1	R744
PXVE0AR640000	CO <sub>2</sub> orifice KIT N°.2	
PXVE0AR650000	CO <sub>2</sub> orifice KIT N°.3	
PXVE0AR660000	CO <sub>2</sub> orifice KIT N°.4	
PXVE0AR670000	CO <sub>2</sub> orifice KIT N°.5	
PXVE0AR680000	CO <sub>2</sub> orifice KIT N°.6	
PXVE0AR690000	CO <sub>2</sub> orifice KIT N°.7	

### Coils and connectors

Code	Description	Refrigerants
PXVE0ARA60000	EEV Coil CO <sub>2</sub> 220/230 V~	R744
PXVB0AR020000	IP65 connector for EEV coil	All

### Dimensions and specifications



# PXV

## Electronic pulse expansion valve



### General specifications and cooling capacities of R290, R600, R600a valves

Part number	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m³/h)	Cooling capacity (kW)	
			(inches)		(mm)			Refrigerant	
			IN	OUT	IN	OUT		R290, R600, R600a	
PXVV03S010000	1	0.5	3/8"	1/2"	-	-	0.010	0.7	
PXVVM10S01000			-	-	10	12			
PXVV03S020000	2	0.7	3/8"	1/2"	-	-	0.017	1.4	
PXVVM10S02000			-	-	10	12			
PXVV03S030000	3	0.8	3/8"	1/2"	-	-	0.023	1.9	
PXVVM10S03000			-	-	10	12			
PXVV03S040000	4	1.1	3/8"	1/2"	-	-	0.043	2.9	
PXVVM10S04000			-	-	10	12			
PXVV03S050000	5	1.3	3/8"	1/2"	-	-	0.065	5.0	
PXVVM10S05000			-	-	10	12			
PXVV03S060000	6	1.7	3/8"	1/2"	-	-	0.113	7.9	
PXVVM10S06000			-	-	10	12			
PXVV04S070000	7	2.3	1/2"	5/8"	-	-	0.200	14.3	
PXVVM12S07000			-	-	12	16			
PXVV04S080000	8	2.5	1/2"	5/8"	-	-	0.230	16.4	
PXVVM12S08000			-	-	12	16			
PXVV04S090000	9	2.7	1/2"	5/8"	-	-	0.250	17.9	
PXVVM12S09000			-	-	12	16			

Rated cooling capacities refer to: Evaporation temp.  $T_{evap} = +5^{\circ}\text{C}$  • Condensation temp.  $T_{cond} = +32^{\circ}\text{C}$  • Temp. of valve input liquid  $T_{liq} = +28^{\circ}\text{C}$

### PXV valves orifice kits

Code	Description	Refrigerants
PXVV0AR630000	R290 orifice kit N°1	R290
PXVV0AR640000	R290 orifice kit N°2	
PXVV0AR650000	R290 orifice kit N°3	
PXVV0AR660000	R290 orifice kit N°4	
PXVV0AR670000	R290 orifice kit N°5	
PXVV0AR680000	R290 orifice kit N°6	
PXVV0AR690000	R290 orifice kit N°7	
PXVV0AR780000	R290 orifice kit N°8	
PXVV0AR790000	R290 orifice kit N°9	

### Coils and connectors

Code	Description	Refrigerants
PXVB0ARA60000	EEV coil 220/230 V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0ARA20000	EEV coil 24 V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0AR020000	IP65 connector for EEV coil	All

### Dimensions and specifications

1: O-ring  
2: Lock nut  
3: O-ring  
4: Orifice

**Orifices Kits**

1: Seal  
2: Connector securing screws max torque 0.8 Nm

**Coils and connectors**

# EWCM 8900 - 9100 EO

DIN controllers for cooling plants



Codes	Description	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>	3 m 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 EWCM EO (Environmental Optimised) controllers for compressor rooms 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 makes 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 tandem by plug-n-play V190 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

## Common features

<b>Insulation Class</b>	2
<b>Operating temperature</b>	-5...55°C
<b>Storage temperature</b>	-30...85°C

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

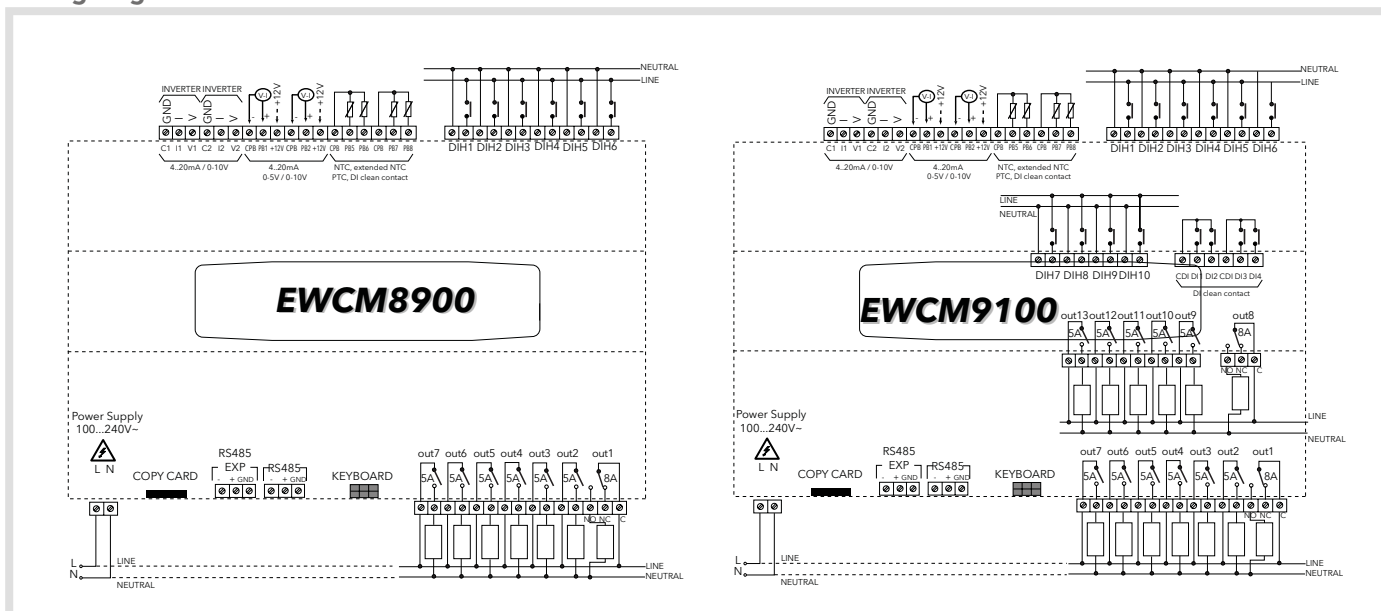
**Connector for base-**

**keyboard connection** rapid 6-way connector

## Technical data

	EWCM 8900	EWCM 9100
Container:	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60 mm)	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60 mm)
Mounting:	on DIN Omega bar support	on DIN Omega bar support
Analogue inputs:	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20 mA / 0...5 V / 0...10 V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20 mA / 0...5 V / 0...10 V)
Digital inputs:	6 voltage (100...240 V~)	10 voltage (100...240 V~) + 4 configurable voltage-free.
Analogue outputs:	2 voltage/current (0...10 V/4...20 mA)	2 voltage/current (0...10 V/4...20 mA)
Digital outputs:	6 SPST 5(2)A 250 V~ + 1 SPDT 8(3)A 250 V~	11 SPST 5(2)A 250 V~ + 2 SPDT 8(3)A 250 V~
Connections:	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to Televis<b>System</b> 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 Televis<b>System</b> 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 delivery	inverter control both in suction and delivery
Clock:	present	present
Power consumption:	20W	20W
Power supply:	100...240 V~ ±10% 50/60 Hz	100...240 V~ ±10% 50/60 Hz

## Wiring diagrams





# EWCM 9900 EO

DIN controllers for cooling plants



Codes	Description	Details
<b>EM83CI3*0GH00</b>	EWCM 9900 EO	18 DIN
<b>EMK0000B0G000</b>	spare keyboard ENG/ITA	
<b>CO000029</b>	3 m 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

Keyboard included.

## Applications

The new series of EWCM EO (Environmental Optimised) controllers for compressor rooms 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 makes 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 tandem by plug-n-play V190 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

## Common features

<b>Insulation Class</b>	2
<b>Operating temperature</b>	-5...55°C
<b>Storage temperature</b>	-30...85°C

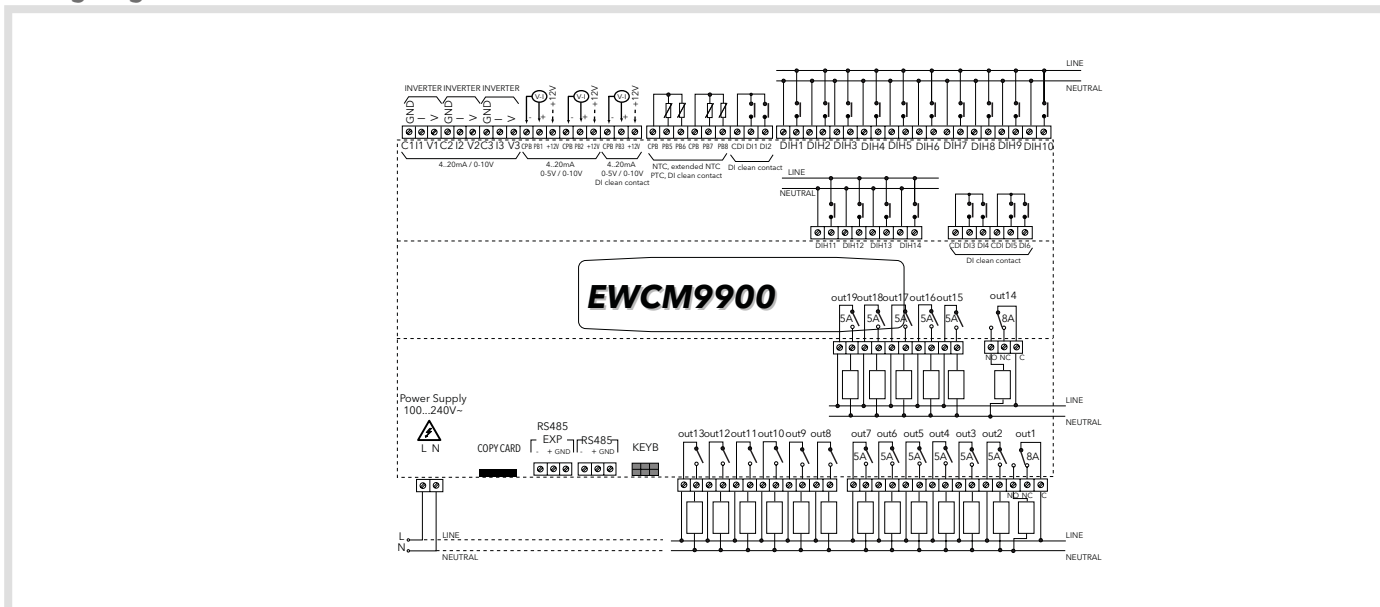
**Ambient humidity for operation and storage** 10...90% RH (non-condensing)

**Connector for base-keyboard connection** rapid 6-way connector

## Technical data

	<b>EWCM 9900</b>
Container:	PC+ABS UL94 plastic resin casing V-0 18 DIN modules (315x110x60 mm)
Mounting:	on DIN Omega bar support
Analogue inputs:	4 NTC/NTC extended/PTC/DI + 2 high precision current/voltage (4...20 mA / 0...5 V / 0...10 V) + 1 current/voltage (4...20 mA / 0...5 V / 0...10 V)
Digital inputs:	14 voltage (100...240 V~) + 6 configurable voltage-free.
Analogue outputs:	3 voltage/current (0...10 V/4...20 mA)
Digital outputs:	17 SPST 5(2)A 250 V~ + 2 SPDT 8(3)A 250 V~
Connections:	<ul style="list-style-type: none"> <li>• TTL port for connection to CopyCard USB</li> <li>• RS-485 for connection to Televis<b>System</b> 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
Functions:	inverter control both in suction and delivery
Clock:	present
Power consumption:	20W
Power supply:	100...240 V~ ±10% 50/60 Hz

## Wiring diagrams



# TelevisGo

Monitoring and maintenance systems via web



Codes	Description	Applications
<b>TGOAXE301E00K</b>	KIT TelevisGo 30*	up to 30 controllers
<b>TGOAXE601E00K</b>	KIT TelevisGo 60*	up to 60 controllers
<b>TGOAXE2H0E000</b>	KIT TelevisGo 224*	up to 224 controllers

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

## Applications

TelevisGo is a family of devices to monitor, control and manage commercial refrigeration installations remotely. The product is based on a PC Embedded standard platform to offer greater calculation power, data filing space and, thanks to the Microsoft Embedded operating system, easy system expansion using widely available peripherals. TelevisGo is the monitoring system recommended for supermarkets with 30 or more controllers, up to a maximum of 224.

## Features

### For the end user

- recording of HACCP temperatures
- information on energy consumption
- complete, easy to use system
- open, expandable system

### For the maintenance technician

- compact, reliable, ready-to-use system
- intuitive user interface easy to learn
- alarm signalled by e-mail, SMS and configurable priorities
- distance access via web for diagnostics and control
- dedicated maintenance tools: parameters instruments, controls, detailed diagnostics and recording of all operational status
- system fully updatable via web: software, languages, driver controllers
- instruments for off line configuration and fast modification of settings

### For chains and system integrators

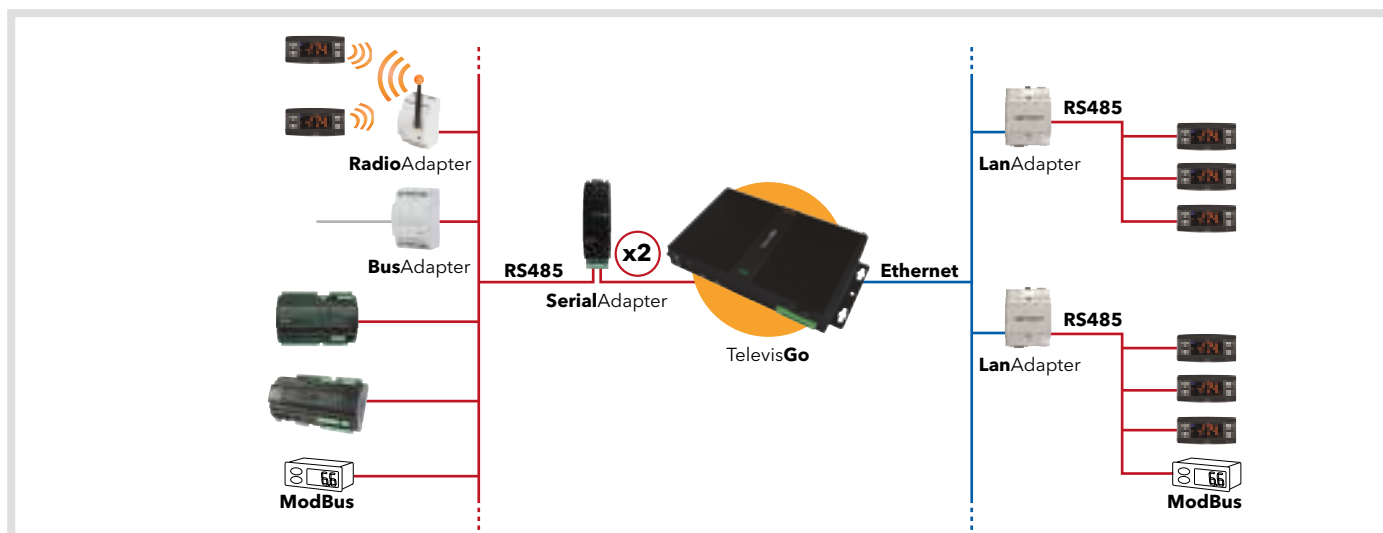
- solution scalability based on size of plants
- instruments for off line configuration, plant cloning and series modification of configurations
- Compatible with third party ModBus instruments: energy measurement and HVAC controls
- XML protocol open:
  - data sent periodically (push function)
  - sending on occurrence of data and alarms
  - acquisition of real-time data
  - interrogation of historical data and alarm base
- remote execution of controls / modification controller parameters
- SOCKS protocol integrated for routing of TCP and UDP communications

## Technical Specifications

### TelevisGo 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> </ul>
User language interfaces pre-loaded:	IT-EN-ES-DE-FR-RU
Operating System:	MS Windows XP Embedded
Power supply:	12 V <sub>DC</sub> with external power supply 100...240V ~ ±10%
Power consumption:	10W max
Connections:	6 USB port 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

## Connections



# TelevisGo

Monitoring and maintenance systems via web



Codes	Description	Applications
<b>TGOAXE301E00K</b>	KIT TelevisGo 30*	up to 30 controllers
<b>TGOAXE601E00K</b>	KIT TelevisGo 60*	up to 60 controllers
<b>TGOAXE2H0E000</b>	KIT TelevisGo 224*	up to 224 controllers

\*contains No.1 **Serial**Adapter + 1.5 m serial cable

## Graphic display of the plant



TelevisGo offers an advanced user interface, for data analysis and full control of plant operations that is accessible from a web browser on a personal computer, tablet and mobile devices.

TelevisGo also has a graphic interface that the user can customise with a powerful drawing and configuration tool using pre-loaded, freely expandable symbol libraries.

The TelevisGo web interface makes information and controls easily accessible from a variety of devices.

## Graphic interface configuration instrument



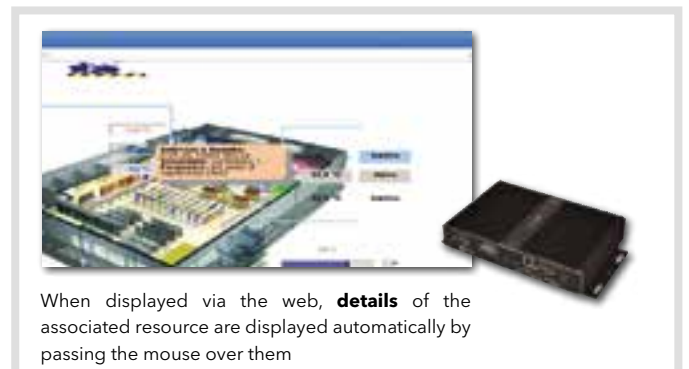
Through the **Aggregated items** you can create easily reusable interactive items



A graphic page can be designed for a single controller and assigned to all similar ones



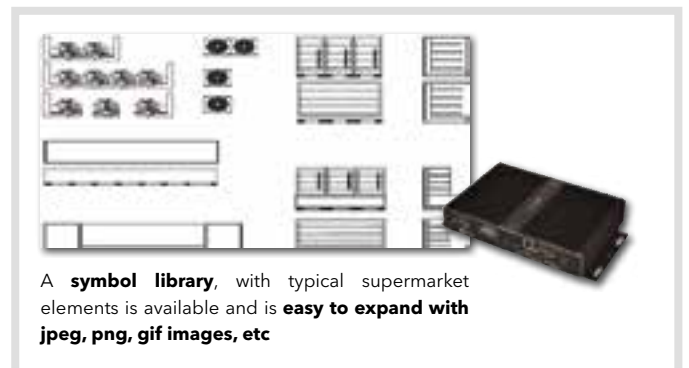
Drawing operations are speeded up by **dragging** and '**copy and paste**' of items



When displayed via the web, **details** of the associated resource are displayed automatically by passing the mouse over them



The intelligent 'copy and paste' of aggregated items makes it possible to quickly create tables with data, controls and parameters



A **symbol library**, with typical supermarket elements is available and is **easy to expand with jpeg, png, gif images, etc**

# TelevisCompact 400

Monitoring systems for small installations



Codes	Description	Applications
TCP40E40X0000	Televis <b>Compact</b> 400	up to 40 controllers
TCP40E60X0000	Televis <b>Compact</b> 400	up to 60 controllers

## Applications

Televis**Compact** 400 is a family of devices to monitor, control and manage commercial refrigeration installations remotely. The product includes a remote WEB-based user interface to configure the product via a PC.

## Common features

Innovative design	Languages supported: Italian - English - Spanish*
Compatibility with third party instruments using ModBus protocol alarms sent by e-mail, SMS or to a web server	Soft keys for immediate access to functions

\*for the availability of other languages, please contact the sales department

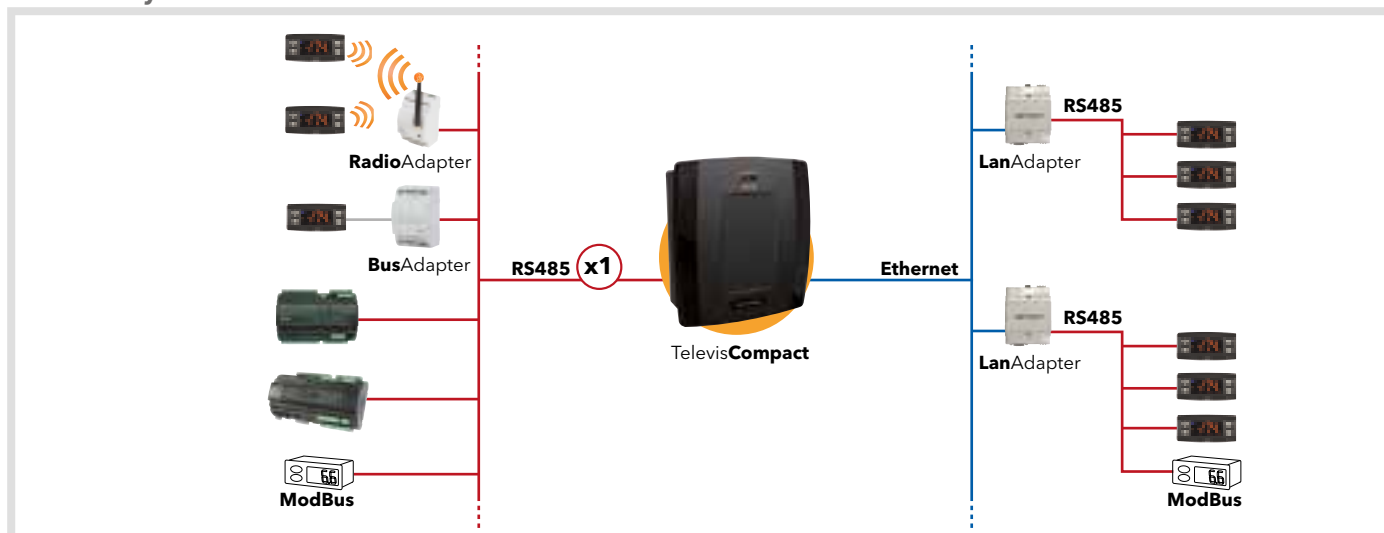
## Technical Specifications

	Televis <b>Compact</b> 400
User interface:	3 signal LEDs
Operating System:	Windows CE 6.0
Browsers supported:	<ul style="list-style-type: none"> <li>Internet Explorer 7 or later</li> <li>Mozilla Firefox 3.5 or later</li> </ul>
Digital outputs:	2 SPST relays for alarm signals
Connections:	1 USB port 1 RS-232 port (modem) 1 RS-485 port (device network) 1 Ethernet port
Connectivity:	LAN (integrated) GSM modem (external, optional) USB mass storage device
Power supply:	100...240V~
Power consumption:	10W max

## Accessories

Code	Description	Details
LA0ET00X700	Ethernet <b>Lan</b> Adapter	Ethernet / RS-485 interface module
LA0WF00X700	Wifi <b>Lan</b> Adapter	WiFi interface module
See relevant page	<b>Bus</b> Adapter130-150-350	RS-485 network interface for Eliwell controllers
See relevant page	<b>Radio</b> Adapter /S - EXT - Radiokey	MESH wireless interface for Eliwell controllers
See relevant page	<b>Smart</b> Adapter	Televis converter for RS-485 ModBus instruments
SAMGPRS35AL00	GSM/GPRS W/ANT PSU Modem Kit	includes power supply unit (European 10A plug) + antenna with 1.5 m wire
C111150	RS-485 cable	RS-485 network cable in 300 m reels
CO000130	Ethernet crossover cable	

## Connectivity



# TelevisCompact 600

Monitoring systems for small installations



Codes	Description	Applications
<b>TCP60E40X0000</b>	Televis <b>Compact</b> 600	up to 40 controllers
<b>TCP60E60X0000</b>	Televis <b>Compact</b> 600	up to 60 controllers

## Applications

Televis**Compact** 600 is a family of devices to monitor, control and manage commercial refrigeration installations remotely.

The device has a remote, web-based user interface and a local LCD colour interface with touch-screen technology allowing it to be configured directly without the need for a PC.

## Common features

Innovative design

Languages supported: Italian - English - Spanish\*

Compatibility with third party instruments using ModBus protocol

Soft keys for immediate access to functions

Alarms sent by e-mail, SMS or to a web server

\*for the availability of other languages, please contact the sales department

## Technical Specifications

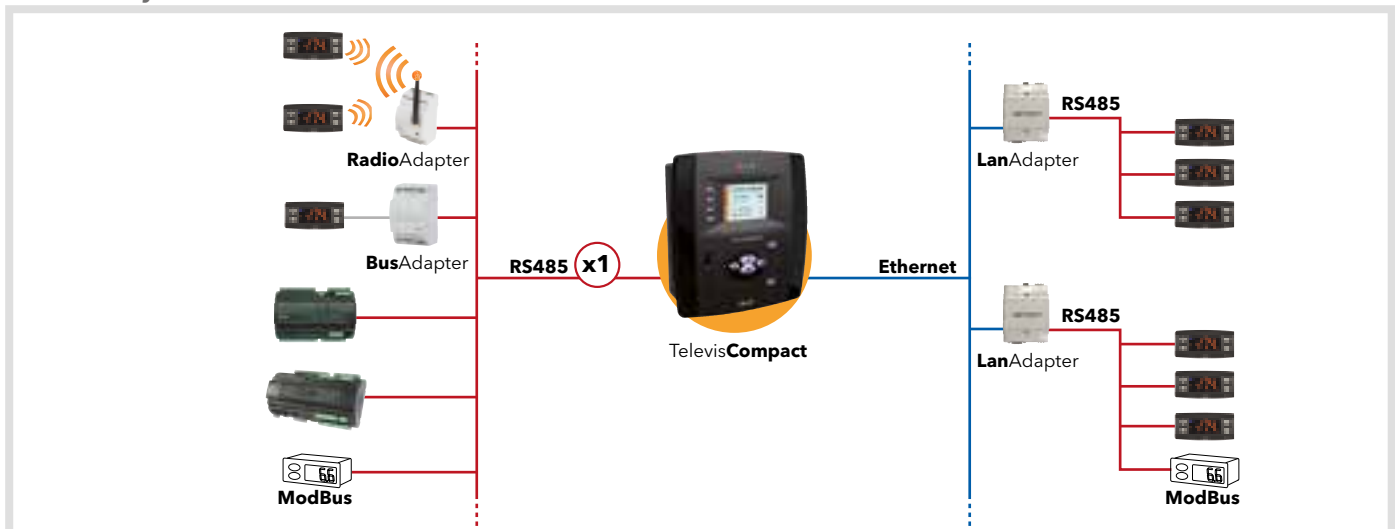
### TelevisCompact 600

User interface:	3.5" touch screen LCD 10 contextual function keys
Operating System:	Windows CE 6.0
Browsers supported:	<ul style="list-style-type: none"> <li>Internet Explorer 7 or later</li> <li>Mozilla Firefox 3.5 or later</li> </ul>
Digital outputs:	2 SPST relays for alarm signals
Connections:	1 USB port 1 RS-232 port (modem) 1 RS-485 port (device network) 1 Ethernet port
Connectivity:	LAN (integrated) GSM modem (external, optional) USB mass storage device
Power supply:	100...240V~
Power consumption:	10W max

## Accessories

Code	Description	Details
LA0ET00X700	Ethernet <b>Lan</b> Adapter	Ethernet / RS-485 interface module
LA0WF00X700	Wifi <b>Lan</b> Adapter	WiFi interface module
See relevant page	<b>Bus</b> Adapter130-150-350	RS-485 network interface for Eliwell controllers
See relevant page	<b>Radio</b> Adapter /S - EXT - Radiokey	MESH wireless interface for Eliwell controllers
See relevant page	<b>Smart</b> Adapter	Televis converter for RS-485 ModBus instruments
SAMGPRS35AL00	GSM/GPRS W/ANT PSU Modem Kit	includes power supply unit (European 10A plug) + antenna with 1.5 m wire
C111150	RS-485 cable	RS-485 network cable in 300 m reels
CO000130	Ethernet crossover cable	

## Connectivity



# TelevisIn - TelevisOut

Data acquisition modules and actuators



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

## Applications

TelevisIn and TelevisOut are data acquisition, alarm signalling and user control modules which can be connected via the ModBus protocol to Televis or third-party systems. 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 via the management of lights and other utilities.

## Common features

Compatible with third-party and ModBus systems

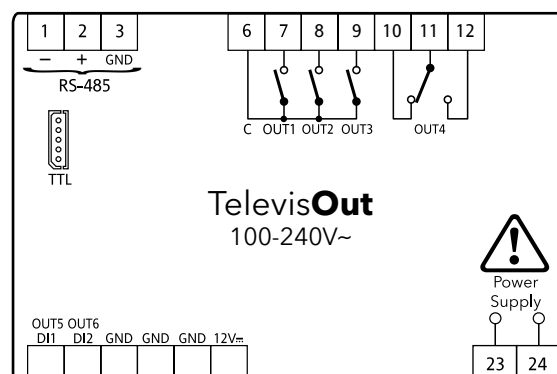
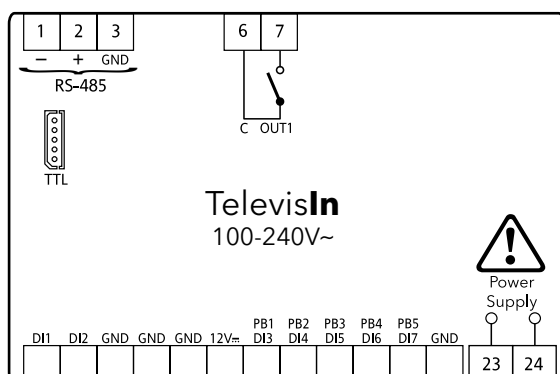
**Just two models** to cover all applications

**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
Mounting:	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: 0-1 V, 0-5 V and 0-10 V</li> <li>• Ain probe: 0...20 mA and 4...20 mA</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: 0-1 V, 0-5 V and 0-10 V</li> <li>• Ain probe: 0...20 V and 4...20 mA</li> </ul>
Analogue inputs:	3 NTC/PTC/Pt1000/DI inputs +1 V (0-1 V / 0-5 V / 0-10 V) input + 1 I (0...20 mA / 4...20 mA) 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 250 V~	2 (SELV) Open Collector: PWM 3 SPST 2A 250 V~ 1 SPDT 2A 250 V~
Connectivity:	<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...240 V~ ±10% 50/60 Hz	SMPS 100...240 V~ ±10% 50/60 Hz

## Wiring diagrams





# SerialAdapter - Ethernet LanAdapter - WiFi LanAdapter

Connectivity modules for systems



Codes	Description
<b>SAT1AMM100000</b>	<b>SerialAdapter</b> 232
<b>LA0ET00X700</b>	Ethernet <b>LanAdapter</b>
<b>LA0WF00X700</b>	WiFi <b>LanAdapter</b>

## Applications

**SerialAdapter** is a galvanically isolated RS-232/RS-485 adapter for use on networks with TelevisGo.

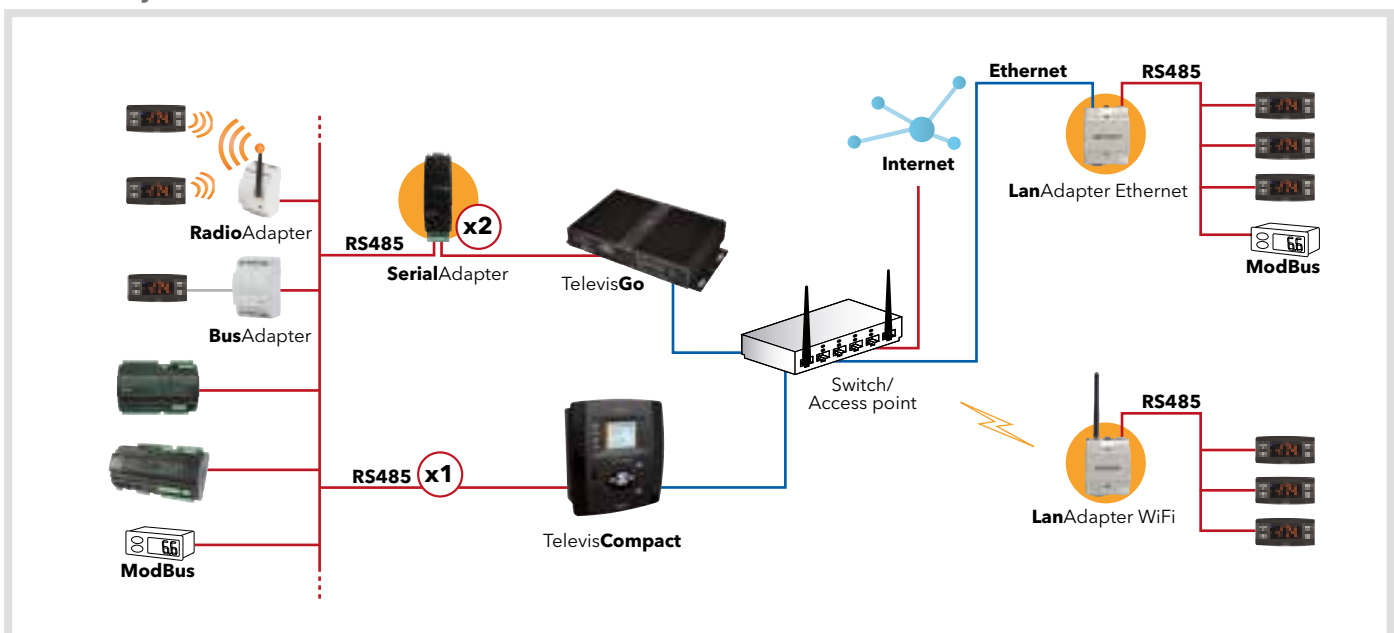
**LanAdapter** is an Ethernet/RS-485 (or TTL) interface module enabling communication between a LAN and a network of instruments compatible with the Televis protocol. In this way, the LAN network monitoring system can manage data, alarms and connected instrument network functions. The **LanAdapter**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

## 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
Casing:	plastic, 2 DIN modules	plastic, 4 DIN modules	plastic, 4 DIN modules
Mounting:	on DIN Omega bar support	on DIN Omega bar support	on DIN Omega bar support
Power supply:	12 V $\overline{=}$ through TelevisGo serial port	100...240 V $\sim$ $\pm$ 10% 50/60 Hz	100...240 V $\sim$ $\pm$ 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
Ambient storage temperature:	-30...+75°C	-20...+85°C	-20...+85°C
Ambient 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	screw terminal to connect electric cable with a section of max. 2.5 mm <sup>2</sup> (one wire per terminal). Antenna (external)
Connectivity:	<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 port for connection to TelevisSystem</li> <li>TTL port for connection to instruments</li> <li>Standard: IEEE 802.15.4</li> <li>Frequency band: ISM 2.400 GHz...2.485 GHz (&lt;100 mW e.i.r.p.)</li> <li>Selection of channel: manual/automatic</li> </ul>

## Connectivity





# RadioAdapter - RadioAdapter (/S) EXT - RadioKey

## Wireless connectivity modules



Codes	Description
<b>BARF0TT00NH00</b>	<b>RadioAdapter V2.0</b>
<b>BARF0DT00NH00</b>	<b>RadioAdapter/S V2.0</b>
<b>BARF0TT20NH00</b>	<b>RadioAdapterEXT V2.0</b>
<b>BARF0DT20NH00</b>	<b>RadioAdapter/S EXT V2.0</b>
<b>MD0000003</b>	External antenna kit for EXT
<b>CCA0B0T01Tx00</b>	RadioKey (Televis)
<b>CCA0B0T01Mx00</b>	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

MESH communication technology with automatic directory selection

Extensive surface coverage

Ability to act as a repeater for adjacent nodes

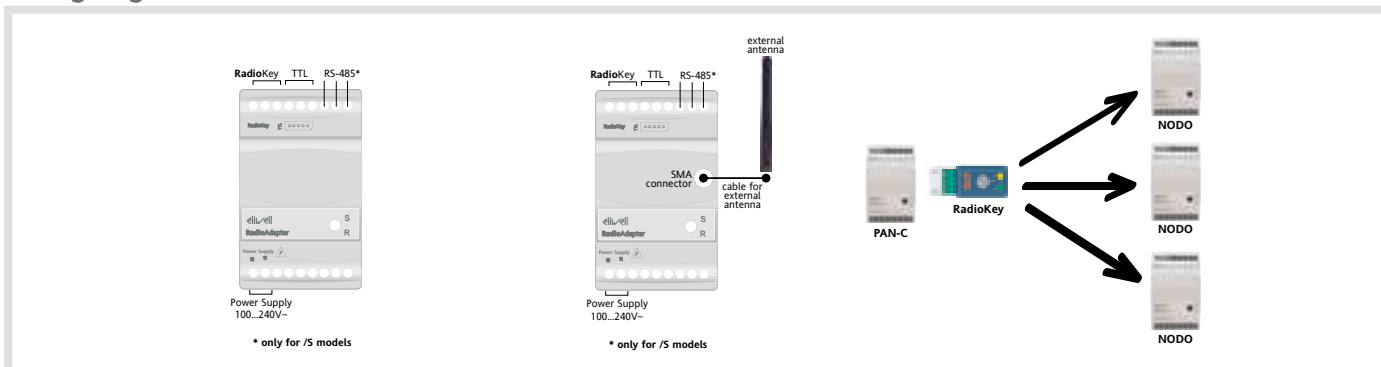
EC certification for European market

FCC certification for American market

### General technical specifications

	RadioAdapter RadioAdapter/S	RadioAdapter EXT RadioAdapter/S EXT	RadioKey
Casing:	3 DIN modules	3 DIN modules	-
Mounting:	on DIN Omega bar support	on DIN Omega bar support	-
Power supply:	100...240 V~ ±10% 50/60 Hz	100...240 V~ ±10% 50/60 Hz	-
Power consumption:	2W	2W	-
Insulation class:	II	II	-
Ambient operating temperature:	-5...+60°C	-5...+60°C	-
Ambient storage temperature:	-20...+85°C	-20...+85°C	-
Ambient operation and storage humidity:	10...90% RH (non-condensing)	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)	Class 4, ISA classification SP100.11 (not to be used for safety equipment)	-
Type of network:	MESH	MESH	-
Protocol supported:	Televis or ModBus RTU	Televis or ModBus RTU	-
Number of nodes per network:	100 max	100 max	-
Number of controllers per node:	240 max	240 max	-
Radio response time:	800 msec max.	800 msec max.	-
Connectivity:	TTL port for connection to RS-485 serial port devices - <b>just models /S</b>	TTL port for connection to RS-485 serial port devices - <b>just models /S</b>	-
Antenna:	2 x 4 GHz integrated, multi-directional	external - not included (see Accessories)	-
Accessories/notes:	-	External antenna kit + SMA 90° connector + 1 m cable. To be ordered separately	needed for network configuration. Available for Televis or ModBus RTU networks

### Wiring diagrams



# BusAdapter 130 - 150 - 350

RS-485 opto isolator connectivity modules



Codes	Description
<b>BA11250N370x</b>	BusAdapter130
<b>BA10000R370x</b>	BusAdapter150
<b>x=0:</b> cable 1 m; <b>x=3:</b> cable 2.5 m	
<b>BA10000R370x</b>	BusAdapter350
<b>x=1:</b> cable 1 m; <b>x=4:</b> cable 2.5 m	

## Applications

BusAdapter 130-150-350 is a family of devices used to connect Eliwell controllers to wired supervision and monitoring networks in RS-485 mode.

## Features

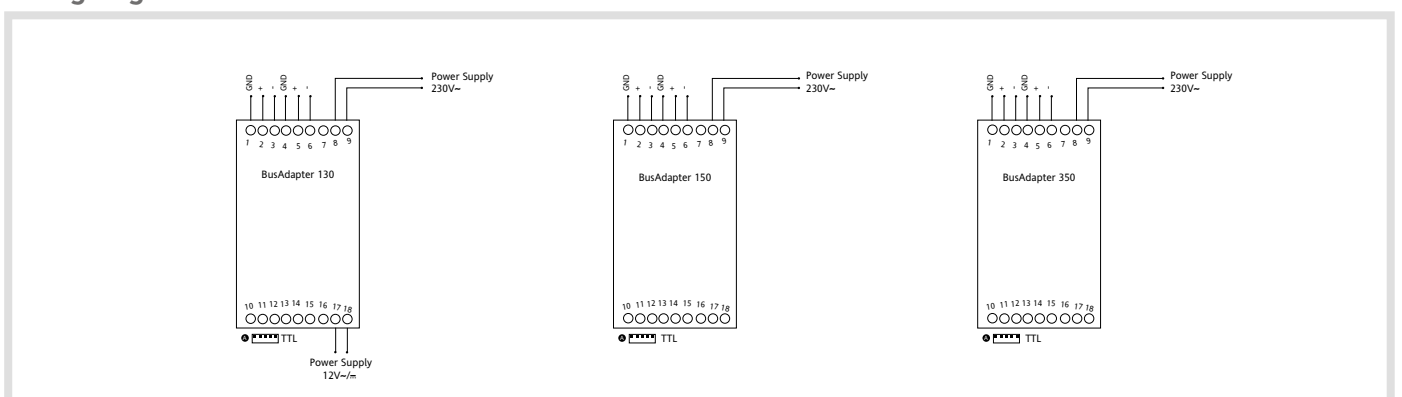
**130 models** have an auxiliary 12 V (5 VA) output to power the instrument.

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

**350 models** are equipped with reinforced electric insulation and should be used with EM300 LX

General technical specifications	BusAdapter 130	BusAdapter 150	BusAdapter 350
Casing:	3 DIN modules	3 DIN modules	3 DIN modules
Mounting:	on DIN Omega bar support	on DIN Omega bar support	on DIN Omega bar support
Power supply:	230 V~ / 115 V~ ±10% 50/60 Hz	230 V~ / 115 V~ ±10% 50/60 Hz	230 V~ / 115 V~ ±10% 50/60 Hz
Power consumption:	6W	1.5W	1.5W
Insulation class:	II	II	II
Ambient operating temperature:	-5...+55°C	-5...+60°C	-5...+60°C
Ambient storage temperature:	-30...+75°C	-30...+75°C	-30...+75°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-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)
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>double RS-485 port 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:	12 V~ / C ±10% 50/60 Hz	/	/

## Wiring diagrams



# Modem GSM/GPRS

## Modems



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

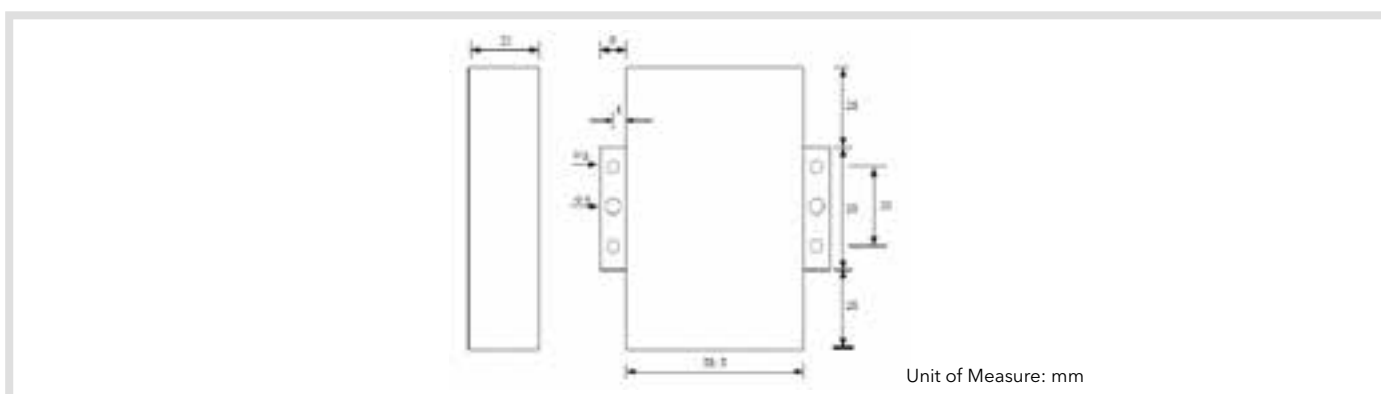
### Applications

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

### Technical Specifications

	Modem GSM/GPRS
Case:	Metal
Dimensions:	91x58.5x22 mm (BxHxD)
Weight:	195g
Frequency bands:	EGSM900/GSM1800 MHz, 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 3 V/1.8 V slot with 15KV ESD protection</li> </ul>
Power supply:	5...35 V≐ 12 V
Power consumption:	<200 mA (12 V)
Serial configuration:	Speed 110 ... 230400 bps 5, 6, 7, 8 data bit 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)

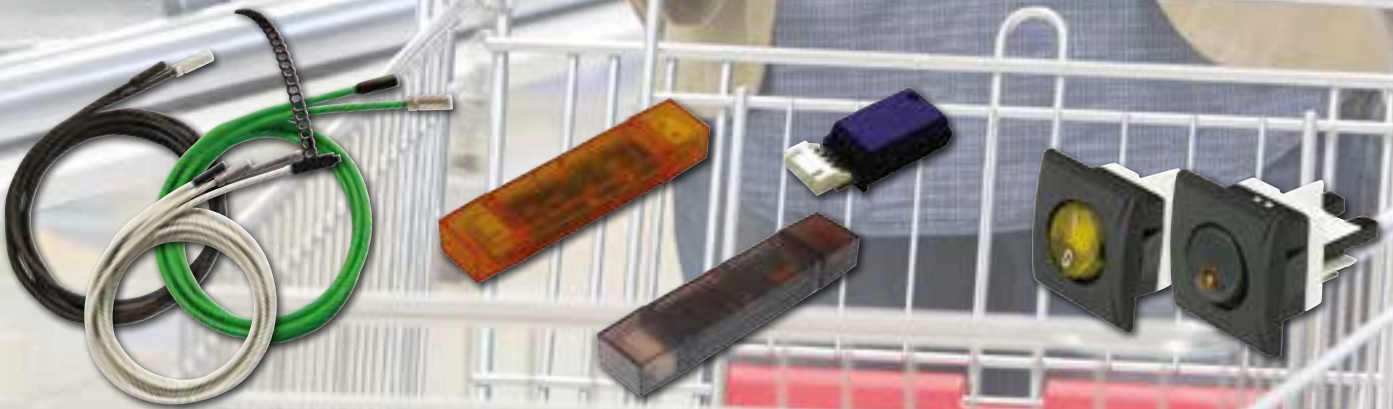
### Dimensions



## ELECTROMECHANICAL ACCESSORIES AND COMPONENTS

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

Temperature, humidity and pressure probes, power supply units, a wide range of transformers and memory devices like Unicard.



# Memory 1000

## Recording and printing temperature



Codes	Description	Temperature input
<b>M1K04N03D1X00</b>	MEMORY 1040 F*	4
<b>M1K04N03D0X00</b>	MEMORY 1045 F	4
<b>M1K08N03D1X00</b>	MEMORY 1080 F*	8
<b>M1K08N03D0X00</b>	MEMORY 1085 F	8
<b>M1K26N03D1X00</b>	MEMORY 1080 F 2AI*	8
<b>M1K26N03D0X00</b>	MEMORY 1085 F 2AI	8
<b>RC444444</b>	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:

- fast data download on SD CARD, without using the PC
- soft key to enter the report printing menu directly

Compatible with RadioAdapter wireless networks

Manages all aspects of network controller alarms

12 months+ data logging capacity

A wide range of models to fit all application requirements

Up to 10 digital and analogue inputs

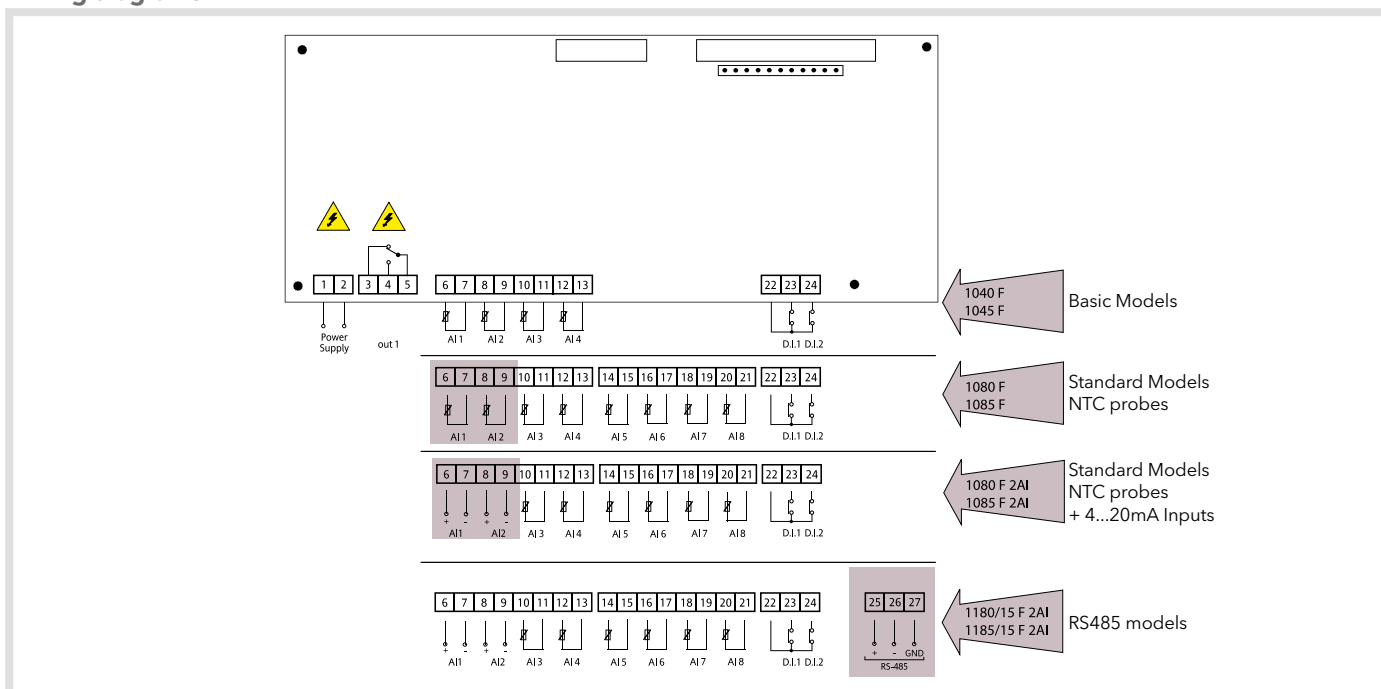
### Technical data

	Memory 1000 with printer	Memory 1000 without printer
User interface:	Backlit graphic LCD 8 polycarbonate keys	Backlit graphic LCD 7 polycarbonate keys
Analogue inputs:	<ul style="list-style-type: none"> <li>• max 8 NTC / 4 NTC based on model</li> <li>• max 2 4...20 mA (<b>just for models 2AI</b>)</li> </ul>	<ul style="list-style-type: none"> <li>• max 8 NTC / 4 NTC based on model</li> <li>• max 2 4...20 mA (<b>just for models 2AI</b>)</li> </ul>
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 250 Va	1 SPDT 5(2)A 250 Va
Connections:	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
Clock:	present	present
Buzzer:	present	present
Power consumption:	20W max (printer in use)	5W max
Power supply:	230 Va ±10% 50/60 Hz	230 Va ±10% 50/60 Hz
Printer:	Integrated thermal printer	-

### Accessories

Codes	Description
RC444444	Thermal paper roll

### Wiring diagrams





# DeviceManager

Controller configuration software



Codes	Description
<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 windows based software used to manage and install Eliwell devices. The software can be used to create and save parameter mapping and transfer it to and from the controller.

**DeviceManager** needs the USB communication interface **DeviceManager Interface (DMI)** to communicate directly with controllers. It is compatible with Unicard USB and Multi Function Key to transfer maps, parameters and controller firmware updates.

For information on compatibility and functions for each controller family, please check the compatibility table on [www.eliwell.com](http://www.eliwell.com)

## Features

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

## Minimum system requirements

Minimum system requirements	DeviceManager
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> </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>• 700 MHz CPU</li> <li>• 256 MB RAM</li> <li>• HD 1 GB</li> <li>• Mouse or equivalent navigation system</li> </ul>
Space required on disk:	Approx. 500 MB for normal installation (2 languages, 50 models)

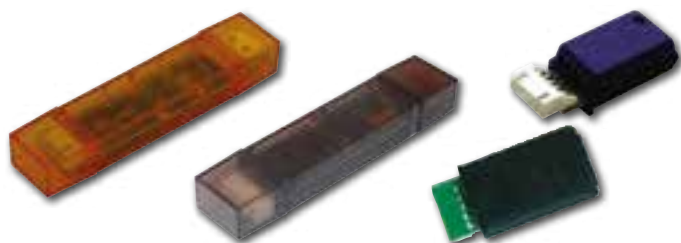
## Accessories

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



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

Memory for fast configuration and updating of controllers



Codes	Description
CCA0BHT00UU00	UNICARD USB/TTL
CCA0BUI02N000	USB Copy Card
COLV000016200	Extension lead for USB Copy Card
CC0S00A00M000	Standard Copy Card
MKF100T000000	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 [www.eliwell.com](http://www.eliwell.com), maps for instruments in the ID and IDPlus families can be read and written onto 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 updates.

## 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 parameter values

Updating device firmware/applications

Downloading parameter values from the instrument

Downloading alarm log from the instrument

Use	Copy Card	Multi Function key	Unicard	USB Copy Card
IDPlus series	•	-	•	-
EW - EWPlus (EO LVD) series	•	-	•	-
IC series	•	-	-	-
ID series	•	-	-	-
EM300 series	•	-	-	-
DR4020 - DR4022	•	-	•	-
EW4820 - EW4822	•	-	-	-
EW7220 - EW7222	•	-	-	-
EWTS 950 LX - EWTS 990 LX	•	-	-	-
EWRC 300 - EWRC 500 series	•	-	•	-
EWDR series	•	-	-	-
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	•	•	-	-

### KEY

•: Reading/writing maps parameters

F: Updating Firmware

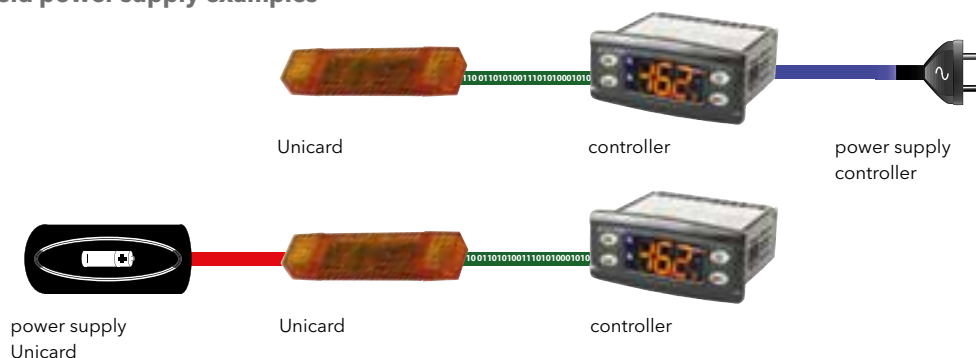
L: Updating Interface Languages

D: Download Data/Alarms

## Counter power supply examples



## Field power supply examples



# NTC

## NTC semi-conductor temperature probes



### NTC co-moulded with double insulation

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN8SAA1502	NTC with double insulation	AISI 304	6x40	silicone	IP67	4000 V	-50...+120°C	1.5 m
SN8PAA1500	NTC with double insulation	AISI 304	6x40	PVC	IP67	4000 V	-30...+105°C	1.5 m

### NTC co-moulded with double insulated cable

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN8T6H0005	NTC co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber shielded	IP68	2000 V	-50...+110°C	10.0 m
SN8T6H1505	NTC co-moulded with double insulated cable shielded	Thermoplastic rubber	5x20	Thermoplastic rubber	IP68	2000 V	-50...+110°C	1.5 m
SN8DED11502C0	NTC co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	1.5 m
SN8DED13002C0	NTC co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	3.0 m
SN8DAE11502C0	NTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	1.5 m
SN8DAE13002C0	NTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	3.0 m
SN8T6N1502	NTC co-moulded with double insulated cable	AISI 304	6x50	Thermoplastic rubber	IP68	2000 V	-50...+110°C	1.5 m

# Special NTC probes - TC

Special NTC semi-conductor temperature probes



## NTC special versions

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN8DEB21502C0	NTC clamp-on	Thermoplastic rubber	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	1.5 m
SN8DEB23002C0	NTC clamp-on	Thermoplastic rubber	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	3.0 m
SN8DNB11502A0	NTC clamp-on probe IP67 Fast response	Copper	4x16	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	1500 V	-50...+110°C	1.5 m
SN8DAC11502AV	NTC probe Fast response	AISI 304	4x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000 V	-50...+110°C	1.5 m
SN8DAC13002AV	NTC probe Fast response	AISI 304	4x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000 V	-50...+110°C	3.0 m

## TCK

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN400004	Tck	Inconel 600	6x200	TTS	IP45	-	-40...1150°C	1.0 m

## TCJ

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN300000	Tcj	AISI 316	6x100	Vetrotex	IP44	-	0...350°C	3.0 m
SN300008	Tcj	AISI 316	6x100	Vetrotex	IP44	-	0...350°C	1.5 m

# Pt100 - Pt1000 probes

Pt100 - Pt1000 thermo-resistive temperature probes



## Pt100

Code	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Operating range	Length of probe
SN200009	Pt100, 3 wires with steel tube	AISI 316	6x100	Vetrotex	IP44	0...+350°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...+1100°C	1.5 mm

## Pt1000

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN950A2500	Pt1000 with two wires	AISI 304	6x40	Silicone	IP67	2000 V	-50...+200°C	2.5 m
SN9DAE11502C6	Pt1000 co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	1.5 m
SN9DAE13002C6	Pt1000 co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	3.0 m
SN9DED11502C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	1.5 m
SN9DED13002C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000 V	-50...+110°C	3.0 m

# PTC Probes

## PTC semi-conductor temperature probes



### Applications

Eliwell temperature probes are devices that provide the instruments to which they are connected with temperature measurement through a physical process.

### Common features

Accuracy of temperature measurement: +/- 1%

Codes	Description	Capsule Material	Size of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length of probe
SN7T6A1502	PTC co-moulded with double insulated cable	AISI 304	6x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5 m
SN7DAE11502C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5 m
SN7DAE13002C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0 m
SN7DED11502C0	PTC co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5 m
SN7DED13002C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0 m
SN6070000	PTC for ambient temperature	Plastic	15x70	-	IP54	-	-40...+120°C	-
SN603008	PTC for piercing, with PVC grip	AISI 316	3x150	Silicone	IP65	-	-20...+110°C	3.0 m

# EWPA 007-030-050

## Pressure transducers



### Applications

EWPA pressure transducers are sensors with a voltage output through which they transmit the signal to the measurement instruments they are connected to.

Technical data	EWPA 007	EWPA 010	EWPA 030	EWPA 050
Operating range:	0.5...8 bar (absolute)	0...10 bar (absolute)	0...30 bar (absolute)	0...50 bar (absolute)
Output signal:	2 wires 4...20 mA	2 wires 4...20 mA	2 wires 4...20 mA	2 wires 4...20 mA
Overload:	2 times pressure range	2 times pressure range	2 times pressure range	2 times pressure range
Power supply:	8...32 Volts	8...32 Volts	8...32 Volts	8...32 Volts
Accuracy:	± 0.5% FS max (linearity, hysteresis, repeatability)	± 0.5% FS max (linearity, hysteresis, repeatability)	± 0.5% FS max (linearity, hysteresis, repeatability)	± 0.5% FS max (linearity, hysteresis, repeatability)
Compensated temperature:	0...50°C	0...50°C	0...50°C	0...50°C
Electrical connections:	2 m cable, wired 2 m cable with PACKARD connector	2 m cable, wired 2 m cable with PACKARD connector	2 m cable wired 2 m cable with PACKARD connector mPm connector	2 m cable, wired 2 m cable with PACKARD connector
Mechanical connections:	male connector/ female connector ¼ SAE (7/16"-20UNF)	male connector/ female connector ¼ SAE (7/16"-20UNF)	male connector/ female connector ¼ SAE (7/16"-20UNF)	male connector/ female connector ¼ SAE (7/16"-20UNF)
Operating temperature:	-40...100°C	-40...100°C	-40...100°C	-40...100°C
Global error at T 0...50°C:	max. ± 1.0% FS	max. ± 1.0% FS	max. ± 1.0% FS	max. ± 1.0% FS
Global error at T -10...80°C:	max. ± 1.5% FS	max. ± 1.5% FS	max. ± 1.5% FS	max. ± 1.5% FS
Response time:	(0...99%) < 5 ms	(0...99%) < 5 ms	(0...99%) < 5 ms	(0...99%) < 5 ms
Material in contact with the environment	AISI 316L Viton outer seal	AISI 316L Viton outer seal	AISI 316L Viton outer seal	AISI 316L Viton outer seal
Enclosure rating:	Packard: IP67 Cable: IP54	Packard: IP67 Cable: IP54	Packard: IP67 mPm plug: IP65 Cable: IP54	Packard: IP67 Cable: IP54

Codes	Description	Connector	Electric connection	IP
<b>TD220030</b>	EWPA 030	1/4 SAE MALE	2 m cable	54
<b>TD240030</b>	EWPA 030	1/4 SAE MALE	2 m cable with Packard connector	67
<b>TD250030</b>	EWPA 030	1/4 SAE MALE	mPm connector	65
<b>TD320030</b>	EWPA 030	1/4 SAE FEMALE	2 m cable	54
<b>TD340030</b>	EWPA 030	1/4 SAE FEMALE	2 m cable with Packard connector	67
<b>TD220050</b>	EWPA 050	1/4 SAE MALE	2 m cable	54
<b>TD240050</b>	EWPA 050	1/4 SAE MALE	2 m cable with Packard connector	67
<b>TD320050</b>	EWPA 050	1/4 SAE FEMALE	2 m cable	54
<b>TD340050</b>	EWPA 050	1/4 SAE FEMALE	2 m cable with Packard connector	67
<b>TD220007</b>	EWPA 007	1/4 SAE MALE	2 m cable	54
<b>TD240007</b>	EWPA 007	1/4 SAE MALE	2 m cable with Packard connector	67
<b>TD320007</b>	EWPA 007	1/4 SAE FEMALE	2 m cable	54
<b>TD340007</b>	EWPA 007	1/4 SAE FEMALE	2 m cable with Packard connector	67
<b>TD320010</b>	EWPA 010	1/4 SAE FEMALE	2 m cable	54
<b>TD340010</b>	EWPA 010	1/4 SAE FEMALE	2 m cable with Packard connector	67



# EWPA 010-030-050

## Ratiometric pressure transducers



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

### Applications

EWPA ratiometric pressure transducers are sensors capable of transmitting a signal by way of a current 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...4.5 V:	0...145 psi / 0...10 bar	0...515 psi / 0...35 bar	0...667 psi / 0...46 bar
Output signal:	3 wires 0.5...4.5 V ratiometric	3 wires 0.5...4.5 V ratiometric	3 wires 0.5...4.5 V ratiometric
Overload:	2.5 times pressure range	2.5 times pressure range	2.5 times pressure range
Power supply:	5.0 V <sub>m</sub> ± 0.5 V	5.0 V <sub>m</sub> ± 0.5 V	5.0 V <sub>m</sub> ± 0.5 V
Accuracy:	± 0.25% FS max (linearity, hysteresis, repeatability)	± 0.25% FS max (linearity, hysteresis, repeatability)	± 0.25% FS max (linearity, hysteresis, repeatability)
Energy consumption:	8 mA max	8 mA max	8 mA max
Load resistance:	> 5KΩ	> 5KΩ	> 5KΩ
Electrical connections:	2 m cable with PACKARD connector	2 m cable with PACKARD connector	2 m cable with PACKARD connector
Mechanical connections:	female connector ¼ SAE (7/16"-20UNF)	female connector ¼ SAE (7/16"-20UNF)	female connector ¼ SAE (7/16"-20UNF)
Operating temperature:	-40...125°C	-40...125°C	-40...125°C
Global error at T 0...50°C:	max. ± 1.0% FS	max. ± 1.0% FS	max. ± 1.0% FS
Global error at T -10...80°C:	max. ± 1.5% FS	max. ± 1.5% FS	max. ± 1.5% FS
Response time:	(0...99%) < 5 ms	(0...99%) < 5 ms	(0...99%) < 5 ms
Material exposed to environment:	AISI 316L Viton outer seal	AISI 316L Viton outer seal	AISI 316L Viton outer seal
Enclosure rating:	IP67	IP67	IP67

## Drip protection

### Drip protection for 32x74 controllers



#### Applications

Drip protection for devices in the ID, IC, IDPlus, EW, EWPlus series.

Applied to the rear of the instrument, this product protects electrical connectors against dripping liquid.

Part number	Description
ZZ000270	Drip protection Pack of 20

## EW BOX - INOX BOX

### EW BOX - INOX BOX



#### 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.

Part number	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 one hole 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 instruments 32x74
SM000030	Front panel in ABS for EW horizontal box with two holes for standard instruments 32x74
SM111111	INOX Box with one hole for standard instrument 32x74
SM111112	INOX Box with two holes for standard instruments 32x74

# 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
TF111106	TF 100...115...120 V	230 V~/12...24 V~ 9.6 VA - PTC protected
TF511113	TF 100...115...120 V	115/12 V 3 VA - cert. UL
TF111145	TF 100...115...120 V	115/12 V 3 VA
TF11115A	TF 100...115...120 V	110-230/12-12-12 or 12 15 VA
TF111115	TF 12...24...48 V	24/12 V 3 VA
TF111162	TF 12...24...48 V	24/12 V 5.6 VA
TF111173	TF 200...250 V	230/12 V 3 VA
TF411200	TF 200...250 V	230/12 V - 5 VA protected
TF411173	TF 200...250 V	230/12 V 3 VA - approved VDE
TF411117	TF 200...250 V	240/12 V 3 VA - approved VDE

# TA - Through-bar ammeter transformers

## Ammeter transformers



### Applications

The TA series consists of through-bar current transformers with a ratio of  $\text{xxx}/5$ , this being necessary when the amp input on AC ammeters and wattmeters exceeds 10 A.

Models with ratios of 25/5 A, 40/5 A, 50/5 A, 60/5 A, 100/5 A, 150/5 A, 250/5 A, 400/5 A, 600/5 A and 1000/5A are available.

Model	Class/VA	Ø/BAR
TA 25 A	0.5/5	primary winding
TA 40 A	0.5/5	primary winding
TA 50 A	3/1.5	23/30x10
TA 60 A	3/2	23/30x10
TA 100 A	1/3	23/30x10
TA 150 A	1/5	23/30x10
TA 250 A	0.5/6	23/30x10
TA 400 A	0.5/10	32/40x10
TA 600 A	0.5/15	32/40x10

# Panel switches for ID and IC series

Panel switches for IC - ID - Ammeter transformers

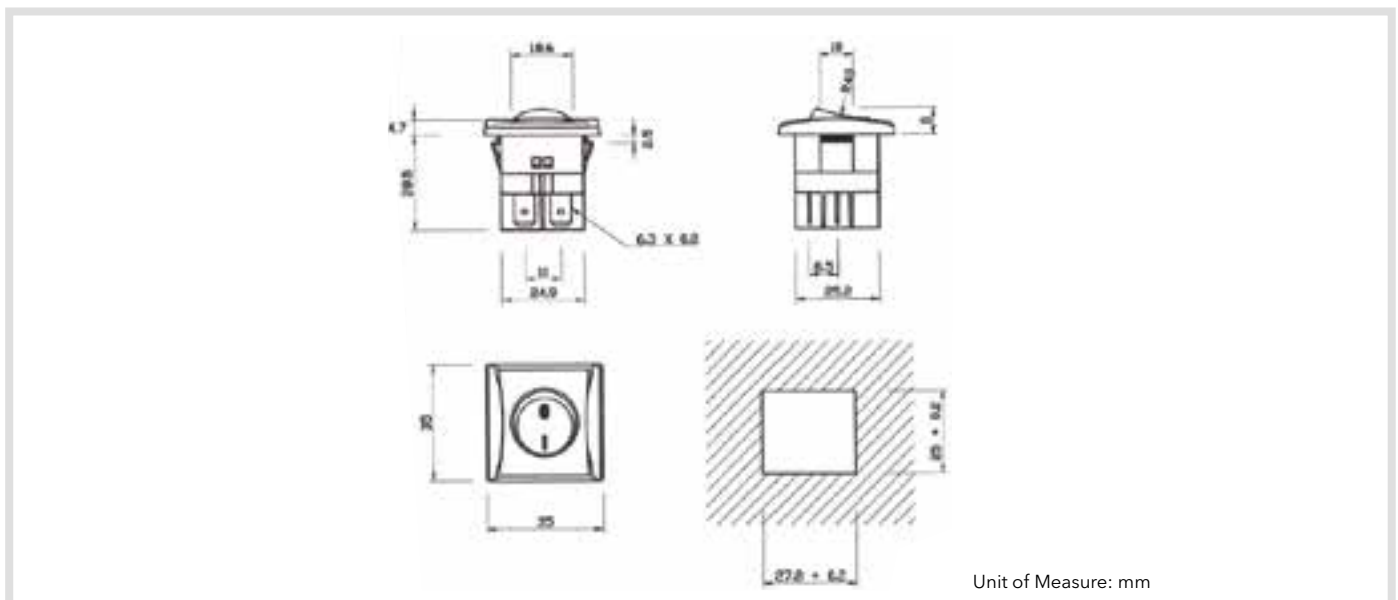


## Applications

Switches specifically designed for use in conjunction with the Digifrost Line and Universal Controllers range. Available in different luminous/non-luminous colours or with luminous dot.

Code	Model	Colour	Details
SW22023A000	Bipolar switch	non-luminous grey button	grey frame 220 V serigraphed 0/1
SW22223D000	Bipolar switch	full green light	grey frame 220 V serigraphed 0/1
SW22123D000	Bipolar switch	green luminous dot	grey frame 220 V
SW22223B000	Bipolar switch	full red light	grey frame 220 V serigraphed 0/1
SW22123B000	Bipolar switch	red luminous dot	grey frame 220 V
SW22223E000	Bipolar switch	full yellow light	grey frame 220 V serigraphed 0/1
SW22123E000	Bipolar switch	yellow luminous dot	grey frame 220 V

## Dimensions





## PRODUCTS FOR MANUFACTURERS

Eliwell supplies a wide range of products and solutions that stand out for high quality and reliability. This is the result of over 30 years experience and know how acquired through collaborating with the leading commercial refrigeration equipment manufacturers.

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

Controllers for OEMs are supplied in industrial packaging, with electronic documentation and in minimum quantities depending on product type. OEM controller customisation can go from definition of a customised parameter map, to including a logo to creation of specific functions.

The following pages list the main controller families for OEMs where standard solutions are available for manufacturers. Please contact an Eliwell agent to discuss your specific requirements.



## EW series

Solutions for refrigerated counters with compressor on board



- Simple, intuitive menus for fast learning
- LED display

### Applications

The **EW** series is the standard Eliwell solution for large production volumes.

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

### Common features

Direct load management up to 2Hp and power supply of 230 Va

Unicard USB for customizing even small lots

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

Industrial packaging 60 pieces

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

## 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

### Applications

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

### Common features

Direct load management up to 2Hp and power supply of 230 Va

Unicard USB for customizing even small lots

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

Industrial packaging 60 pieces

Model	Application	Notes
<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 (LVD) series

High energy saving solutions



- Advanced control algorithms contribute to **energy saving of over 39%\*** with no modification of counter structure needed
- Compressor **voltage protection** assured, increasing duration
- The product is **compatible with the new ecological refrigerants R290, R600**, in compliance with IEC 60079-15-2005
- No supplementary sensors needed thanks to the **virtual door switch**
- Voluntary certification: ENEC/UL (check on the device label)
- **4 easily selectable configurations** pre-loaded in a single controller

\*energy saving certified by the independent laboratory INTERTEK

### Applications

The **EWPlus EO** series controllers are designed to combine high energy savings with maximum ease of installation and use, in both new installations and when replacing existing 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 230 Va

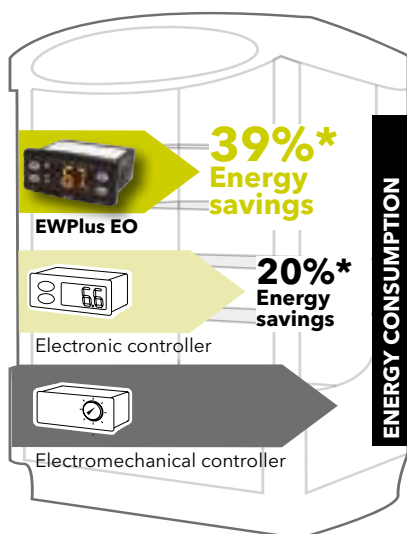
Integrated protection of loads against voltage fluctuations controllable by parameter

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	2 Hp power relay
<b>EWPlus 971 EO</b>	Ventilated units	2Hp relays, 1 configurable output (defrost/fans/lights/alarm/stand-by)
<b>EWPlus 974 EO</b>	Ventilated units	2Hp relays, 2 configurable outputs (defrost/fans/lights/alarm/stand-by)



### Longer-lasting components

- Protection of compressor against voltage fluctuations thanks to the 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



- 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 961 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 easily parameterized from the keyboard.

## Common features

Configurable inputs for temperature and single or double ice level sensor  
Power supply: 230 Vac

Unicard USB for customizing even small lots  
Industrial packaging 60 pieces

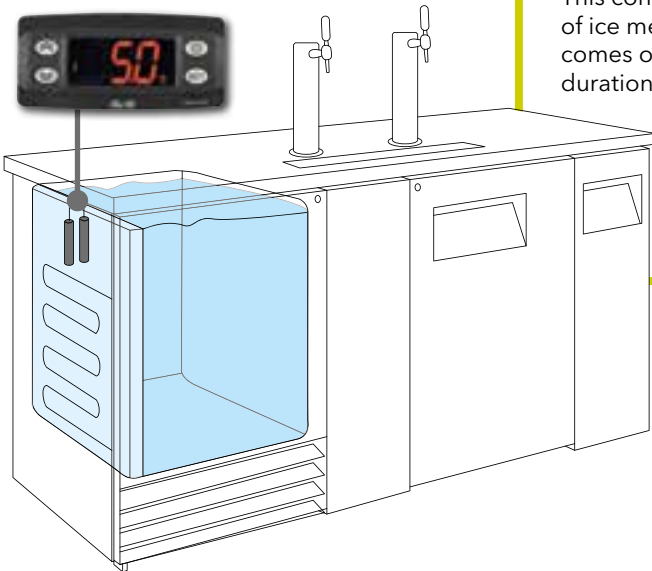
Model	Application	Notes
EWPlus 961 EO Dispenser	Dispenser	Ice level control
EWPlus 971 EO Dispenser	Dispenser	Water pump control



## 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 961 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, in both new installations and when replacing existing 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.

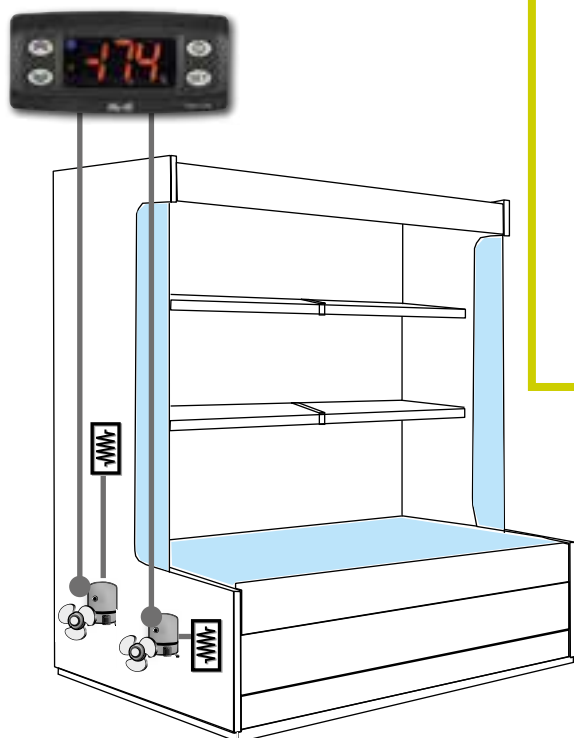
## Common features

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

12 V power supply

Unicard USB for customizing even small lots

Model	Application	Notes
<b>EWPlus 978</b>	Combined counters Mono-blocks	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.

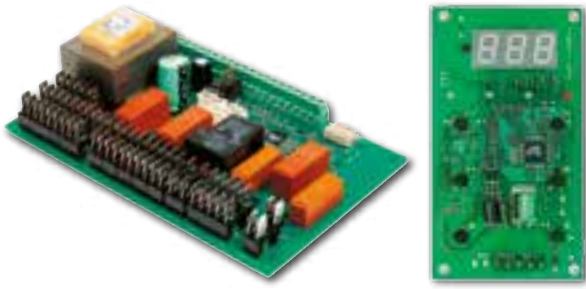
It can also manage double defrosting:

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

# EWPlus 978

# IWP 750

## Controllers 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 100 m
- 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, in both new installations and when replacing existing controllers.

Thanks to platform versatility the product can be configured in various relay combinations to effectively adapt to the mono-block.

### Common features

Power boards and bare keyboard, for panel mounting

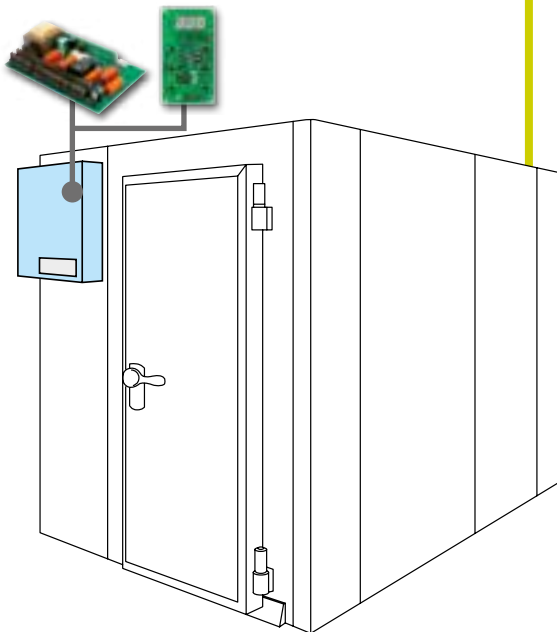
3 temperature probes and 3 configurable digital inputs

5 configurable relay outputs

Compressor control up to 2Hp

SMPS power supply 100...240 Vac

Model	Application	Notes
<b>IWP 750</b>	Mono-blocks	Power boards with 5 relays
<b>IWK Open</b>		Bare keyboard from panel
		Can be set for a distance of up to 100 m



### Environmental sustainability

The IWP devices offer a wide range of machine configuration options, predominantly thanks to the vast array of relays. They are 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 be used in areas where installation conditions are particularly limited.

## IWP 750 - IWK

# IWC 700 series

## Controllers for 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 setpoints is ideal for catering applications, and can be connected to the Echo remote display.

### Common features

<b>Front panel protection rating</b>	IP65	<b>Dimensions</b>	front panel 180x37 mm, depth 69 mm
<b>Container</b>	PC+ABS UL94 V-0 resin plastic casing, polycarbonate display window, switch keys with adhesive polycarbonate film	<b>Installation</b>	panel mounting with 150x31 mm (+0.2/-0.1 mm) drilling template

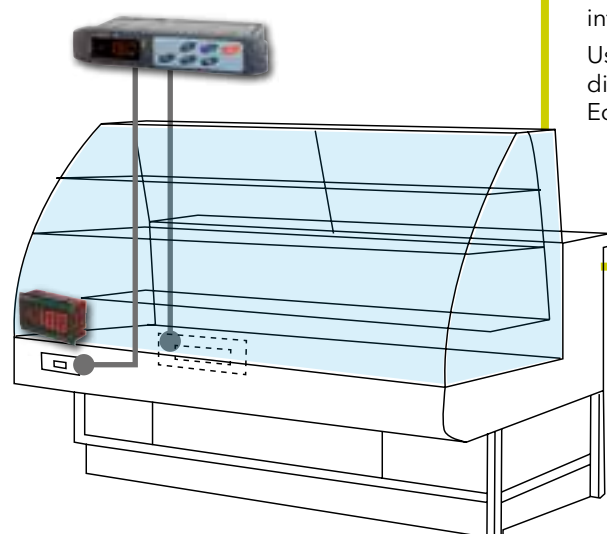
Model	Application	Notes
<b>IWC 720</b>	ventilated refrigeration unit (medium or low temperature)	2 configurable relays
<b>IWC 730</b>	ventilated refrigeration unit (medium or low temperature)	3 configurable relays
<b>IWC 730/E TWIN</b>	catering applications	3 configurable relays can be connected to Echo 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 and cold rooms



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

### Applications

**RTX600/V** and **RTD600/V** are electronic controllers for remote and ducted high efficiency refrigeration counters 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 pre-set profiles for 8 separate applications that can be easily selected through the **KDEPlus** and **KDWPlus** user terminals.

### Features

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

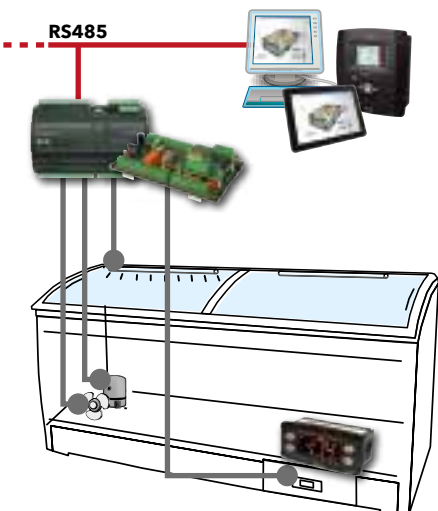
AC and DC pulse electronic valve control

3 temperature probes and 3 configurable digital inputs

SMPS power supply 100...240 Vac

6 configurable relay outputs

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



### Application examples

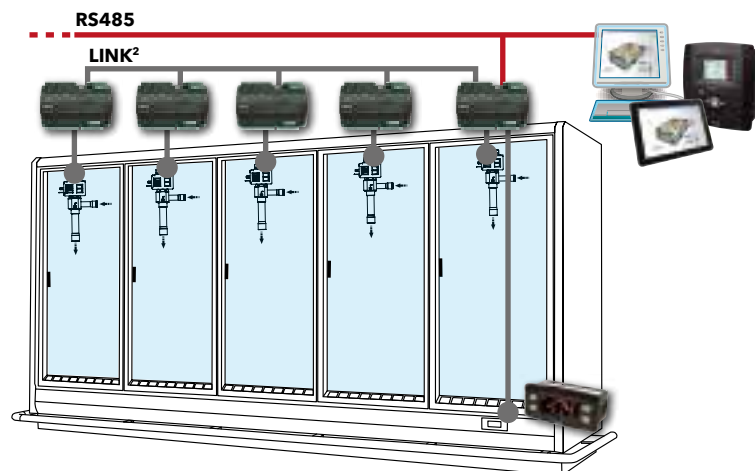
RTX600/V and RTD600/V can be used for different applications.

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 **ducted counter**, 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 and cold rooms



- 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 controller models **RTX600** and **RTN600** have energy-saving functions for supermarkets and commercial food distribution and preservation applications. RTX600 and RTN600 combine optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room setpoint modulation, with automatic identification of open/closed operational time bands.

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

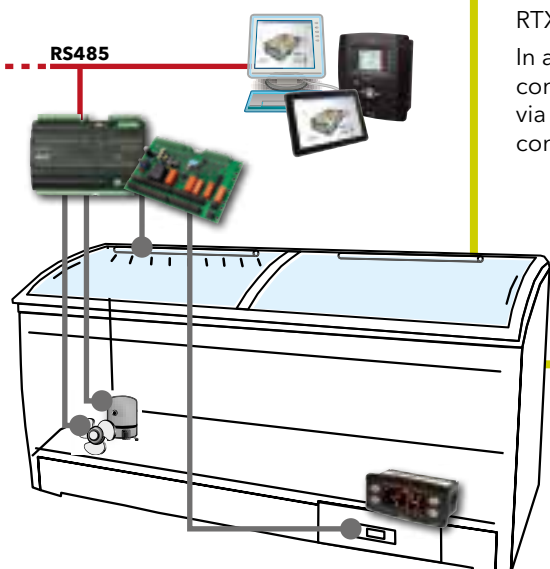
The remote **ECPlus** display can be used to view displayed the date from up to 100 m away, differentiating it from the data displayed on the KDEPlus and KDWPlus terminals.

### Features

Power boards in plastic boxes (RTX), or bare board (RTN)  
3 temperature probes and 3 configurable digital inputs

6 configurable outputs with direct control of loads up to 2HP  
SMPS power supply 100...240 Vac

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



### Application examples

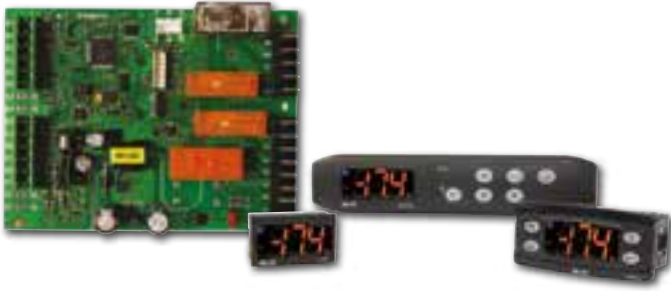
RTX600 and RTN600 can be used for different applications.

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 series

Controllers for supermarket counters and cold rooms



- 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.

### Applications

**RTN400** is a controller for plug-in and ducted counters 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** for energy saving in supermarkets and in commercial food distribution and preservation applications. It 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 by **KDEPlus**, **KDWPlus** keyboards and with the **ECPlus** display module.

### Features

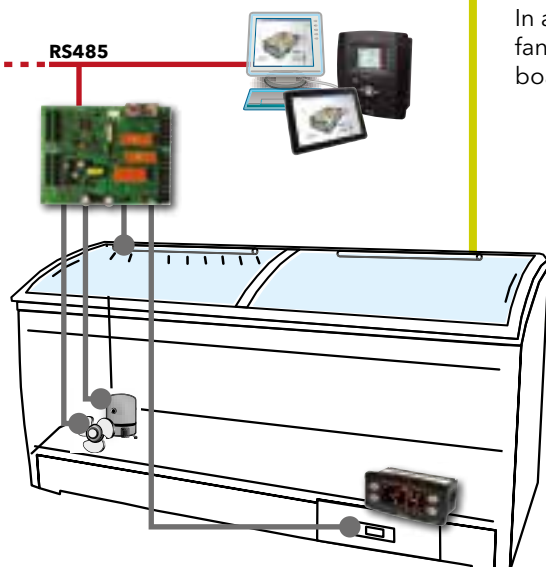
Power boards in compact bare box (121x92 mm)

5 temperature probes and 1 configurable digital input

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

SMPS power supply 100...240 Vac

Model	Application	Notes
RTN400	Supermarket counters	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

# FREE Way

## Programmable platform



### SPEED

One of the main goals of the **FREE** programmable platform is to give customers the tools to find faster, more effective solutions for their customers. Many features of **FREE** make it possible to effectively reduce the time between defining a new application and putting it into production.

### COMPACT

The new **FREE** programmable platform enables customers to keep costs at a competitive level. The **FREE** controllers are made with particular emphasis placed on technological solutions and physical size, for significant results in terms of simplicity, modularity and compactness. The integrated solutions and small size of **FREE** controllers provide real, immediate economic advantages for customers.

### EFFICIENCY

The **FREE** programmable platform, complete and scalable across various levels of complexity, offers customers great freedom in choosing the solution they feel is best suited to their own requirements. This makes it easier to find solutions which take account of costs and/or the reduction of product codes, including solutions which are more open to future development or future system requirements, with particular reference to connectivity.

### RELIABILITY

The high quality of the new **FREE Way** programmable platform allows customers to reduce any costs linked to a lack of quality, during both the production process and on-site installation procedures. The **FREE Smart**, **FREE Panel**, **FREE Evolution** controllers and **FREE Studio** development environment were designed using innovative but carefully reconstructed criteria, adopting advanced and stable technological solutions as well as certified, monitored production processes.

Eliwell has always been a byword for reliability.

## Applications

**FREE Way** is the new programmable platform from Eliwell, consisting of the **FREE Studio** software Suite, **FREE Smart**, **FREE Panel** and **FREE Evolution**, the new programmable controller range available in various sizes.

**FREE Studio**, simple and flexible, is compatible with all 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.

**FREE Way** is for manufacturers of:

A.T.U. (Air Treatment Units), Chillers, Heat Pumps, Rooftop, Compressor Rooms and more...

**FREE Way** is ideal for installers/integrators of:

100% air plants, hydronic plants, mixed plants (air/water).

## FREE Smart features

User interface with configurable keys.

Available in three formats

- **FREE Smart SMP\*** 32x74 mm
- **FREE Smart SMD\*** 4 Din with LED display
- **FREE Smart SMC\*** 4 Din with no display

\*Electric connections compatible with existing

Eliwell product platforms (e.g. Energy Flex); available in versions 100...240 V~

Can be connected to RS-485, ModBus RTU Slave

Can be connected to standard Eliwell peripherals and user interfaces.

## FREE Panel features

**FREE Panel EVP** system controller, with gateway and backlit LCD graphic display functions

High connectivity: can be integrated in industrial systems and BMS

Connects to standard Eliwell and third-party peripheral devices

Can be panel or wall-mounted

## FREE Evolution features

Fully customizable graphic user interface

Available in two formats

- **FREE Evolution EVD** 8 Din with backlit LCD graphic display
- **FREE Evolution EVC** 8 Din with no display

High connectivity: can be integrated in industrial systems and BMS using dedicated plug-in modules

Connects to standard Eliwell peripheral devices (including **FREE Smart**)

Connects to standard third-party peripheral devices

## FREE Studio features

Quick and easy programming

Single software suite

Complete and effective online Help

Advanced debugging and simulation options

Protection of applications and different use levels

Application revision log

Customisable interface







## APPENDICES



# Temperature probe tables

## Appendices

### NTC probe table

Temp. environment (°C)	Resistance (Ohm)					
	102AT	202AT	502AT	103AT	203AT	503AT
-50	24.46	55.66	154.60	329.50	1253	3168
-45	18.68	42.17	116.50	247.70	890.50	2257
-40	14.43	32.34	88.91	188.50	642.00	1632
-35	11.23	26.96	68.19	144.10	465.80	1186
-30	8.834	19.48	52.87	111.30	342.50	872.80
-25	6.998	15.29	41.21	86.43	253.60	646.30
-20	5.594	12.11	32.44	47.77	190.00	484.30
-15	4.501	9.655	25.66	53.41	143.20	364.60
-10	3.651	7.763	20.48	42.47	109.10	277.50
-5	2.979	6.277	16.43	33.90	83.75	212.30
0	2.449	5.114	13.29	27.28	64.88	164.00
5	2.024	4.188	10.80	22.05	50.53	127.50
10	1.684	3.454	8.840	17.96	39.71	99.99
15	1.408	2.862	7.267	14.69	31.36	78.77
20	1.184	2.387	6.013	12.09	24.96	62.56
25	1.000	2.000	5.000	10.00	20.00	50.00
30	0.8486	1.684	4.179	8.313	16.12	40.20
35	0.7229	1.424	3.508	6.940	13.06	32.48
40	0.6189	1.211	2.961	5.827	10.65	26.43
45	0.5316	1.033	2.509	4.911	8.716	21.59
50	0.4587	0.8854	2.137	4.160	7.181	17.75
55	0.3949	0.7620	1.826	3.536	5.941	14.64
60	0.3446	0.6587	1.567	3.020	4.943	12.15
65	0.3000	0.5713	1.350	2.588	4.127	10.13
70	0.2622	0.4975	1.168	2.228	3.464	8.482
75	0.2285	0.4343	1.014	1.924	2.916	7.129
80	0.1999	0.3807	0.8835	1.668	2.468	6.022
85	0.1751	0.3346	0.7722	1.451	2.096	5.105
90	0.1536	0.2949	0.6771	1.266	1.788	4.345
95	-	-	0.5961	1.108	1.530	3.712
100	-	-	0.5265	0.9731	1.315	3.185
105	-	-	0.4654	0.8572	1.134	2.741
110	-	-	0.4128	0.7576	0.9807	2.369

### NTC probe table - Extended range

Temp. environment (°C)	Resistance (KOhm)		
	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

Temperature environment		Temperature coefficient (%/K)	KTY81-121 Resistance (Ohm)			Error - temperature
(°C)	(°F)		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

## Appendices

### Pt100 probe table

Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	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	11.67	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	363.67
-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

Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	Resistance	Temp. environment	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

## Appendices

### TCJ probe table

Temp.	0°C	-10°C	-20°C	-30°C	-40°C	-50°C	-60°C	-70°C	-80°C	-90°C
<b>-200°C</b>	-7.890	-8.095	-	-	-	-	-	-	-	-
<b>-100°C</b>	-4.633	-5.037	-5.426	-5.801	-6.159	-6.500	-6.821	-7.123	-7.403	-7.659
<b>0°C</b>	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
<b>0°C</b>	0.000	0.507	1.019	1.537	2.059	2.585	3.116	3.650	4.187	4.726
<b>100°C</b>	5.269	5.814	6.360	6.909	7.459	8.010	8.562	9.115	9.669	10.224
<b>200°C</b>	10.779	11.334	11.889	12.445	13.000	13.555	14.110	14.665	15.219	15.773
<b>300°C</b>	16.327	16.881	17.434	17.986	18.538	19.090	19.642	20.194	20.745	21.297
<b>400°C</b>	21.848	22.400	22.952	23.504	24.059	24.610	25.164	25.720	26.276	26.834
<b>500°C</b>	27.393	27.953	28.516	29.080	29.647	30.216	30.788	31.362	31.939	32.519
<b>600°C</b>	33.102	33.689	34.279	34.873	35.470	36.071	36.675	37.284	37.896	38.512
<b>700°C</b>	39.132	39.755	40.382	41.012	41.645	42.281	42.919	43.559	44.203	44.848
<b>800°C</b>	45.494	46.141	46.786	47.431	48.074	48.715	49.353	49.989	50.622	51.251
<b>900°C</b>	51.877	52.500	53.119	53.735	54.347	54.956	55.561	56.164	56.763	57.360
<b>1000°C</b>	57.953	58.545	59.134	59.721	60.307	60.890	61.473	62.054	62.634	63.214
<b>1100°C</b>	63.792	64.370	64.948	65.525	66.102	66.679	67.255	67.831	68.406	68.980
<b>1200°C</b>	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
<b>-200°C</b>	-5.730	-6.035	-6.158	-6.262	-6.344	-6.404	-6.441	-6.458	-	-
<b>-100°C</b>	-3.554	-3.852	-4.138	-4.411	-4.669	-4.913	-5.141	-5.354	-5.550	-5.730
<b>0°C</b>	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
<b>0°C</b>	0.000	0.397	0.798	1.203	1.612	2.023	2.436	2.851	3.267	3.682
<b>100°C</b>	4.096	4.509	4.920	5.328	5.735	6.138	6.540	6.941	7.340	7.739
<b>200°C</b>	8.138	8.539	8.940	9.343	9.747	10.153	10.561	10.971	11.382	11.795
<b>300°C</b>	12.209	12.624	13.040	13.457	13.874	14.293	14.713	15.133	15.554	15.975
<b>400°C</b>	16.397	16.820	17.243	17.667	18.091	18.516	18.941	19.366	19.792	20.218
<b>500°C</b>	20.644	21.071	21.497	21.924	22.350	22.776	23.203	23.629	24.055	24.480
<b>600°C</b>	24.905	25.330	25.755	26.179	26.602	27.025	27.447	27.869	28.289	28.710
<b>700°C</b>	29.129	29.548	29.965	30.382	30.798	31.213	31.628	32.041	32.453	32.865
<b>800°C</b>	33.275	33.685	34.093	34.501	34.908	35.313	35.718	36.121	36.524	36.925
<b>900°C</b>	37.326	37.725	38.124	38.522	38.918	39.314	39.708	40.101	40.490	40.885
<b>1000°C</b>	41.276	41.665	42.053	42.440	42.826	43.211	43.595	43.978	44.359	44.740
<b>1100°C</b>	45.119	45.497	45.873	46.249	46.623	46.995	47.367	47.737	48.105	48.473
<b>1200°C</b>	48.838	49.202	49.565	49.926	50.286	50.644	51.000	51.355	51.708	52.060
<b>1300°C</b>	52.410	52.759	53.106	53.451	53.795	54.138	54.479	54.819	-	-

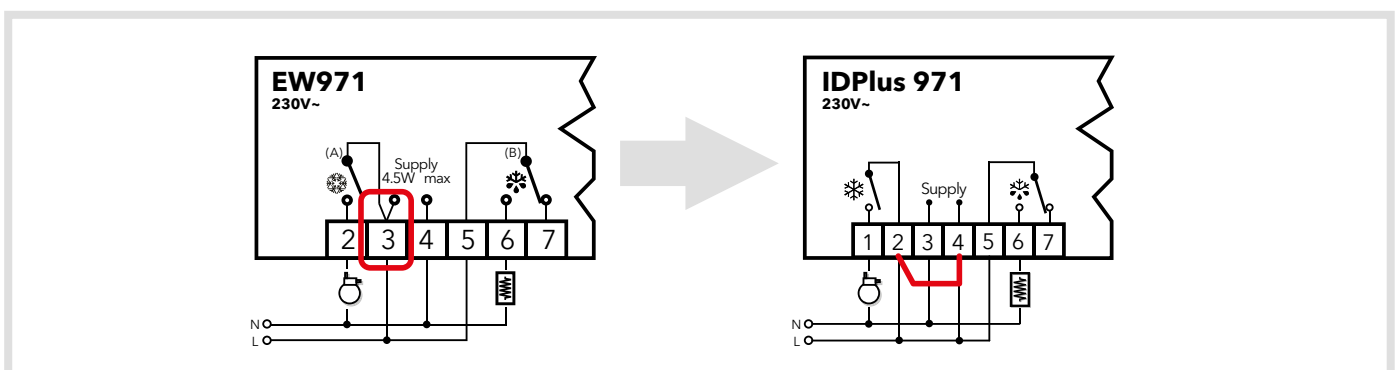
# IDPlus vs EW and ID compatibility

## 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

**\*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. THUS A bridge is needed between controller load line and power supply, see example shown:



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