

Product catalogue

Refrigeration, Systems, Thermoregulation



Rel. 02/14

Product catalogue

Refrigeration, Systems, Thermoregulation

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KEY



EO (Environmentally Optimised)

EO is the acronym for the words Environmentally and Optimised, that is "Optimised for the environment". This symbol represents the new solutions created by Eliwell designers: highly efficient, eco-system compliant, designed to give the user solid advantages. Devices are developed with new energy saving algorithms that can guarantee immediate, measurable economic returns. Compatible with the new ecological refrigerants R290 and R600, products have been designed to guarantee lower operating and maintenance costs and are linked to an active packaging recycling program. Design efforts have enabled us to simplify all installation, maintenance and use operations as much as possible.



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 with a data and monitoring system to a remote terminal unit (RTU).



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 RS-232 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.



UNICARD

Unicard is an accessory that allows to rapidly program parameters.

Via the USB port and the Device Manager software it transfers the parameters value to and from the personal computer.

Via the TTL serial port it transfers the parameters value to and from the controller.



TELEVISSYSTEM

TelevisSystem is a remote management and monitoring system for industrial and commercial systems, ideal for supermarkets and hypermarkets and also for viewing the history of the recordings made. 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 continues to operate in the event of power cuts without the use of batteries such as the Nickel-Cadmium type,

which are well known for having 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 EWS series of probes are specially made for connection to humidity measurement instruments. EWS 280 and EWS 300 probes have one current output (4...20 mA) proportional to the relative humidity. EWS 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; they 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...240V~ or from 12...24V~/12...36V~ gives the installer the possibility of covering most areas of application, thus reducing the number of models that would be necessary if a transformer-type power supply was used.



ELECTRONIC CONTROLS

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

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

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

The winning features of Eliwell products are:

- › Reliable
- › Simple to use
- › Energy saving
- › Minimal environmental impact



IDPlus 902 - IDPlus 961

32x74 cold/hot thermostats



Codes	Description	Relay capacity	Power supply
IDP11D07*0000	IDPlus 902 NTC	8A	230V~
IDP11D03*0000	IDPlus 902 NTC	8A	12V~/~
IDP17D07*0000	IDPlus 961 NTC	2Hp	230V~
IDP17D03*0000	IDPlus 961 NTC	2Hp	12V~/~

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

0=IT; A=GR; C=CZ; E=EN; F=FR; G=DE; I=FI; L=FL; N=NL; O=PO; P=PT; R=RU; S=ES; T=TR;

W=SV; Y=NO; Z=PT(BR).

Applications

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

Common features

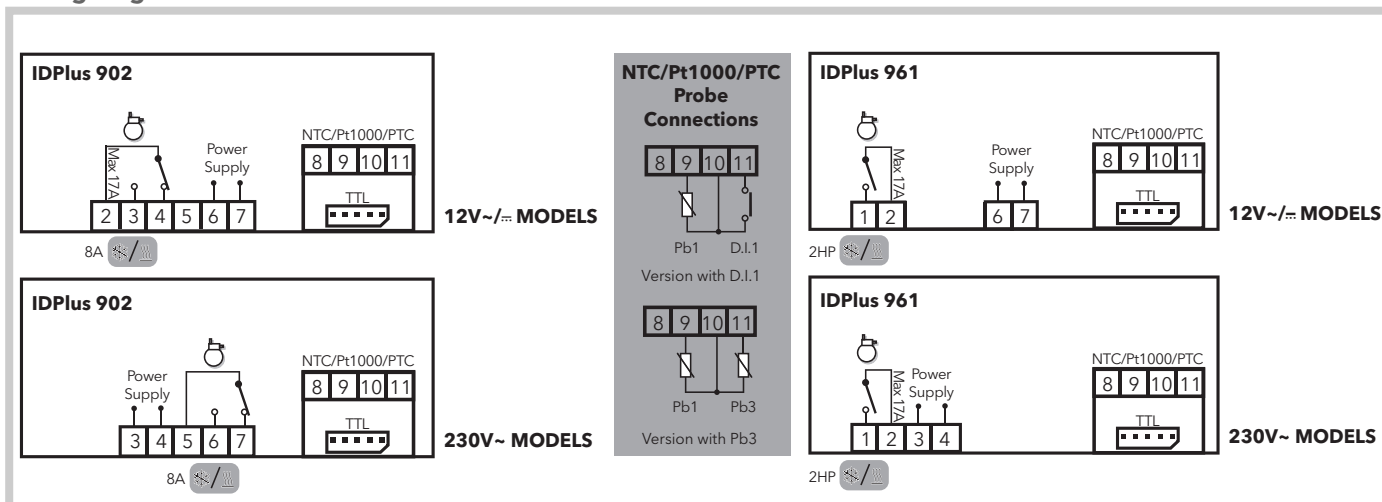
Appearance	New front design	Operating temperature	-5...55°C
Display	Simplified user interface	Storage temperature	-30...85°C
Configuration	4 default configurations included, selectable and restorable	Ambient humidity for operation and storage	10...90% RH (non-condensing)
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Functions	HACCP, DCC, Easy Map, COH
Dimensions	front panel 74x32mm, depth 59mm	Connectivity	can be connected to TelevisSystem and ModBus
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Accessories	New USB/TTL Unicaud for uploading/downloading parameters

Technical data

	IDPlus 902	IDPlus 961
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:	1 PTC / NTC / Pt1000 *	1 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)*	1 digital (SELV) / analogue (PTC/NTC/Pt1000)*
Connectivity:	TTL port for connection to Unicaud/Copy Card or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicaud/Copy Card or TelevisSystem/ModBus monitoring device*
Digital outputs:	1 SPDT ½Hp 8(4)A 250V~	1 SPST 2Hp 12(12)A 250V~
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:	• 230V~ ±10% 50/60Hz • 12V~/~ ±10% 50/60Hz	• 230V~ ±10% 50/60Hz • 12V~/~ ±10% 50/60Hz
HACCP:	present	present

*(selectable by parameter).

Wiring diagrams



IDPlus 971 - IDPlus 974

32x74 refrigeration thermostats



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

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

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

Applications

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

Common features

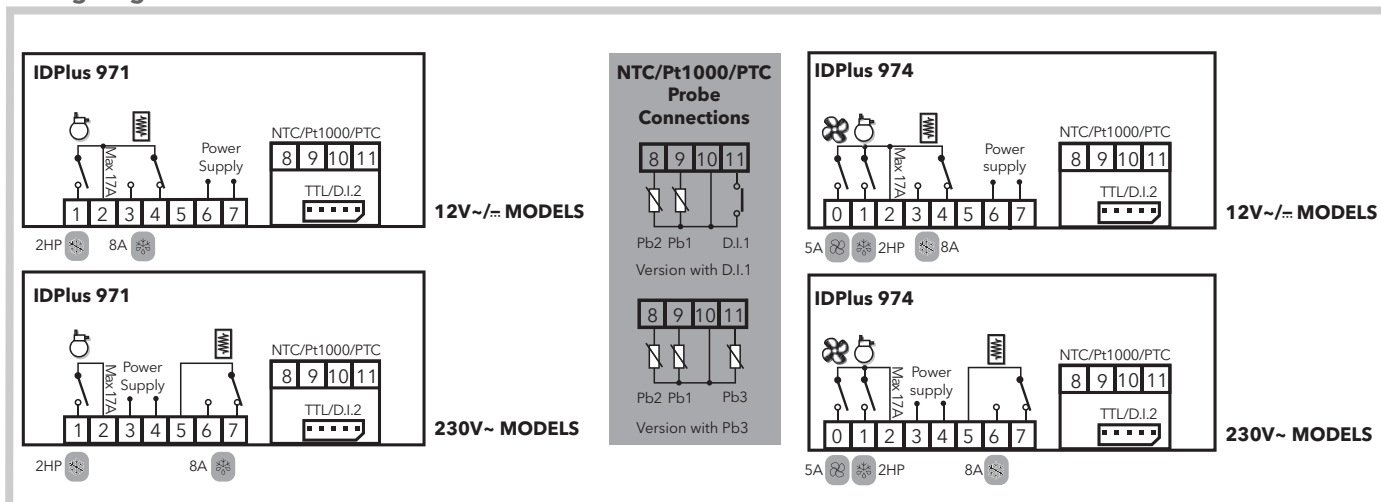
Appearance	New front design	Operating temperature	-5...55°C
Display	Simplified user interface	Storage temperature	-30...85°C
Configuration	4 default configurations included, selectable and restorable	Ambient humidity for operation and storage	10...90% RH (non-condensing)
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Function	HACCP, DCC, Easy Map, COH
Dimensions	front panel 74x32mm, depth 59mm	Connectivity	can be connected to TelevisSystem and ModBus
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Accessories	New USB/TTL Unicaud 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 Unicaud/Copy Card or TelevisSystem/ModBus monitoring device*	TTL port for connection to Unicaud/Copy Card or TelevisSystem/ModBus monitoring device*
Digital outputs:	1 SPDT ½Hp 8(4)A 250V~ 1 SPST 2 Hp 12(12)A 250 V~	1 SPDT ½ Hp 8(4)A 250 V~ 1 SPST 2 Hp 12(12)A 250 V~ 1 SPST 5(2)A 250V~
Measurement range:	-55.0...150.0°C	-55.0...150.0°C
Accuracy:	better than 0.5% of 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:	230V~ ±10% 50/60Hz 12V~/∞ ±10% 50/60Hz	230V~ ±10% 50/60Hz 12V~/∞ ±10% 50/60Hz
Buzzer:	present	optional
HACCP:	present	present

* selectable by parameter

Wiring diagrams



IDPlus 978

32x74 refrigeration thermostats



Codes	Description	Relay capacity	Power supply
IDP24DB7*0000	IDPlus 978 NTC	1,5Hp	230V~

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

0=IT; E=EN; F=FR; G=DE; R=RU; S=ES; Z=PT(BR).

Applications

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

Common features

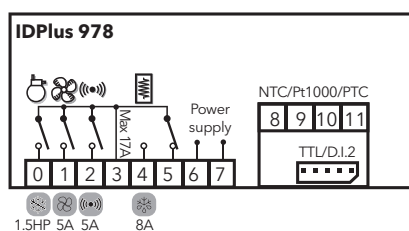
Appearance	New front design	Operating temperature	-5...55°C
Display	Simplified user interface	Storage temperature	-30...85°C
Configuration	4 default configurations included, selectable and restorable	Ambient humidity for operation and storage	10...90% RH (non-condensing)
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Function	HACCP, DCC, Easy Map, COH
Dimensions	front panel 74x32mm, depth 59mm	Connectivity	can be connected to TelevisSystem and ModBus
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Accessories	New USB/TTL Unica for uploading/downloading parameters

Technical data

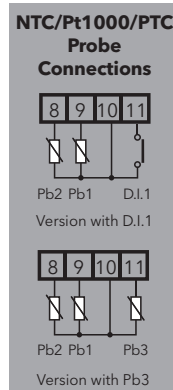
	IDPlus 978
Display range:	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C • Pt1000 probe: -55.0...150.0 °C
Display:	with decimal point * 3 digits + sign
Analogue inputs:	2 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*
Connections:	TTL port for connection to Unica/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 250V~ 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:	• 230V~ ±10% 50/60Hz • 12V~/= ±10% 50/60Hz
Buzzer:	present
HACCP:	present

* selectable by parameter

Wiring diagrams



230V~ MODELS



ICPlus 902

32x74 cold/hot thermostats



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

*selectable by parameter

Applications

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

Common features

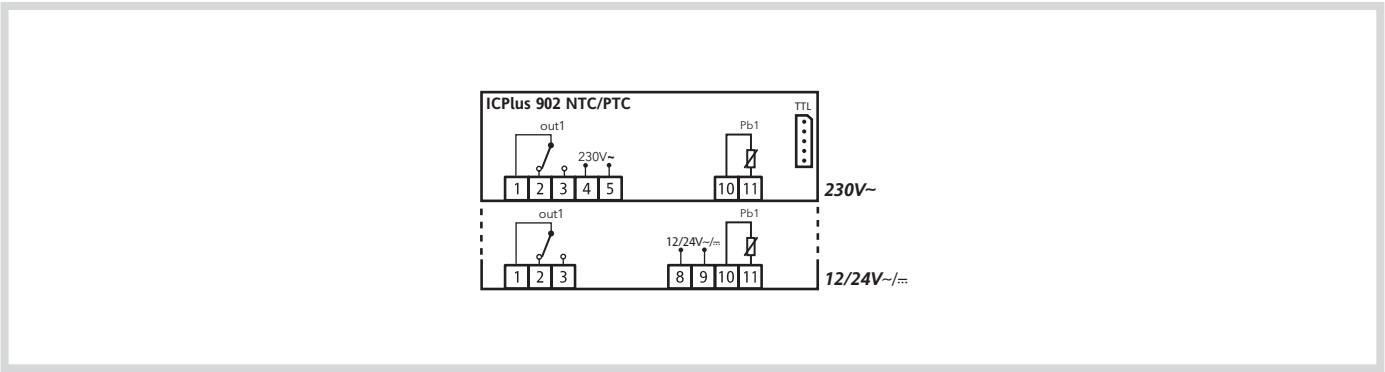
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Operating temperature	-5...55°C
Dimensions	front panel 74x32mm, depth 59mm	Storage temperature	-30...85°C
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Ambient humidity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

Technical data

ICPlus 902 NTC/PTC	
Display range:	• NTC probe: -50.0...110.0 °C • PTC probe: -50.0...140.0°C
Display:	no decimal point * 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *
Digital inputs:	not available
Connections:	TTL port for connection to USB Unicard, Televis System and systems with ModBus protocol
Digital outputs:	1 SPDT 8(4)A 250V~
Measurement range:	from -50 to 140
Accuracy:	better than 0.5% of end of scale+1 digit
Resolution:	0.1 or 1°C
Power consumption:	• 3W for 12...24V~ model • 3W for 230V~ model
Power supply:	• 12V~ , 24V~ , 12...24V~/12...36V= (°) ±10% 50/60Hz • 115V~/230V~ ±10% 50/60Hz

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

Wiring diagrams



ICPlus 915

32x74 cold/hot thermostats



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

*selectable by parameter

Applications

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

Common features

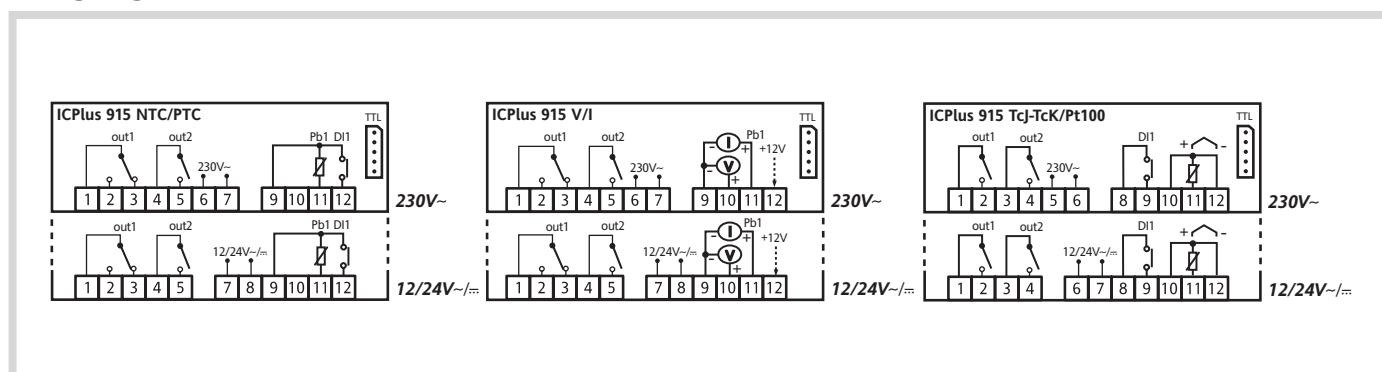
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Operating temperature	-5...55°C
Dimensions	front panel 74x32mm, depth 59mm	Storage temperature	-30...85°C
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Ambient humidity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

Technical data	ICPlus 915 NTC/PTC	ICPlus 915 V/I	ICPlus 915 TC/Pt100
Display range:	- NTC probe: -50.0...110.0 °C - PTC probe: -50.0...140.0 °C	-199...199 * -199.9...199.9 * -1999...1999 *	- Pt100 probe: -150...650 °C - TcJ probe: -40...750 °C - TcK probe: -40...1350 °C
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 V/I (0...1V, 0...5V, 0...10V, 0...20mA, 4...20mA)*	1 Pt100 or 1 TcJ/TcK
Digital inputs:	1 clean contact at extra low safety voltage	not available	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to USB Unicard, Televis System and systems with ModBus protocol	TTL port for connection to USB Unicard, Televis System and systems with ModBus protocol	TTL port for connection to USB Unicard, Televis System and systems with ModBus protocol
Digital outputs:	1 SPDT 8(4)A 250V~ + 1 SPST 8(4)A 250V~	1 SPDT 8(4)A 250V~ + 1 SPST 8(4)A 250V~	1 SPST 8(4)A 250V~ + 1 SPST 8(4)A 250V~
Measurement range:	from -50 to 140	from -999 to 1000	from -150 to 1350
Accuracy:	better than 0.5% of end of scale+1 digit	better than 0.5% of end of scale+1 digit	Pt100: 0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C TcJ: 0.4% for whole scale + 1 digit TcK: 0.5% for whole scale + 1 digit, 0.3% from -40 to 800°C
Resolution:	0.1 or 1°C	0.1 or 1°C	Pt100: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over TcJ: 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over TcK: 0.1°C (0.1°F)
Power consumption:	3W for 12...24V~ model 3W for 230V~ model	3W for 12...24V~ model 3W for 230V~ model	3W for 12...24V~ model 3W for 230V~ model
Power supply:	12V~ , 24V~ , 12...24V~/12...36V~ (°) ±10% 50/60Hz 115V~/230V~ ±10% 50/60Hz	12V~ , 24V~ , 12...24V~/12...36V~ (°) ±10% 50/60Hz 115V~/230V~ ±10% 50/60Hz	12V~ , 24V~ , 12...24V~/12...36V~ (°) ±10% 50/60Hz 115V~/230V~ ±10% 50/60Hz

* selectable by parameter

(°) non-insulated power supply

Wiring diagrams



IC 917/PID (SSR)

PID 32x74 cold/hot thermostats



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

*selectable by parameter

Applications

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

Common features

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

Technical data

	IC 917/PID NTC/PTC (SSR)	IC 917/PID TC/Pt100 (SSR)
Display range:	- NTC probe: -50.0...110.0 °C - PTC probe: -55.0...140.0 °C	- Pt100 probe: -150...650 °C - TcJ probe: -40...750 °C - TcK probe: -40...1350 °C
Display:	3 and a half digits + sign	3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 Pt100 or 1 TcJ/TcK*
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 1/2hp 250V~ • 1 SPST 8(3)A 1/2hp 250V~ SSR models: please see wiring diagram	2 SPST 8(3)A 1/2hp 250V~ SSR models: please see wiring diagram
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:	1.5W for 12V~ model 3W for 230V~ model	1.5W for 12V~ model 3W for 230V~ model
Power supply:	12V~/~ ±10% 50/60Hz 230V~ ±10% 50/60Hz	12V~/~ ±10% 50/60Hz 230V~ ±10% 50/60Hz
Alarm:	optional	optional

* selectable by parameter

Wiring diagrams

SSR Outputs

Version HV 230V~

1 SSR (500Ω) $V_{OUT} = 11.3\text{ V}$; $I_{OUT} = 22.6\text{ mA}$
 (3kΩ) $V_{OUT} = 16.2\text{ V}$; $I_{OUT} = 5.4\text{ mA}$
 2 SSR (2x500Ω) $V_{OUT} = 10.6\text{ V}$; $I_{OUT} = 21.2\text{ mA}$
 (2x3kΩ) $V_{OUT} = 15.8\text{ V}$; $I_{OUT} = 5.3\text{ mA}$

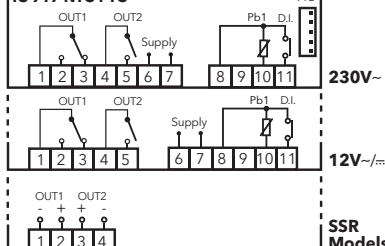
Version LV 12V~

1 or 2 SSR (500Ω) $V_{OUT} = 7.7\text{ V}$; $I_{OUT} = 15.4\text{ mA}$
 1 or 2 SSR (3kΩ) $V_{OUT} = 9.9\text{ V}$; $I_{OUT} = 3.3\text{ mA}$

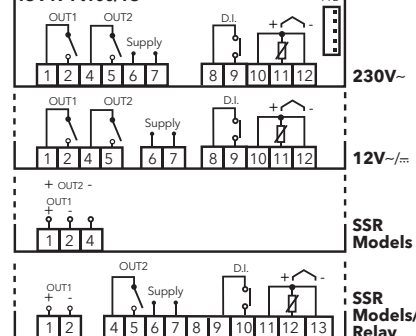
Version LV 12V~

1 or 2 SSR (500Ω) $V_{OUT} = 10.7\text{ V}$; $I_{OUT} = 21.4\text{ mA}$
 1 or 2 SSR (3kΩ) $V_{OUT} = 13.9\text{ V}$; $I_{OUT} = 4.6\text{ mA}$

IC 917 NTC-PTC

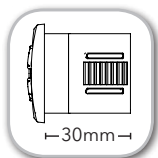


IC 917 Pt100/TC



EM300 LX

Temperature, humidity, pressure indicators



Codes	Description	Probe*	Power supply
TM10D00X0D700	EM300 LX	NTC/PTC	230V~
TM10Z00X0M700	EM300 LX	Pt100/TC	230V~
TM10I00X0M700	EM300 LX I	4...20mA/0...20mA	230V~
TM10Z00X0M400	EM300 LX	Pt100/TC	12...24V~/12...36V~
TM10D00X0D300	EM300 LX	NTC/PTC	12V~
TM10I00X0M300	EM300 LX I	4...20mA	12V~

*selectable by parameter

Applications

The EM300 LX is a device for measuring temperature, humidity and pressure in commercial refrigeration and industrial applications.

Common features

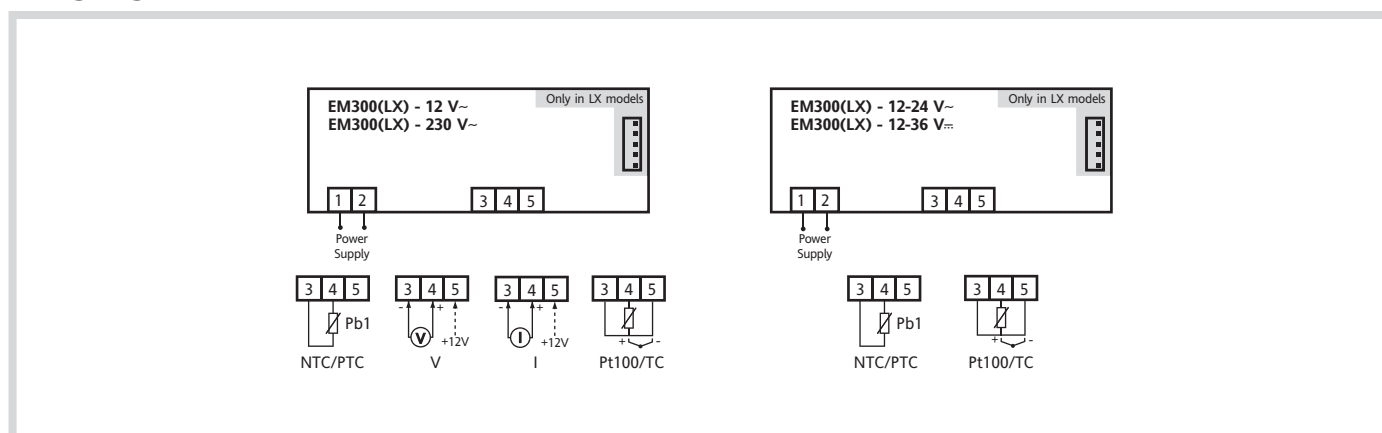
Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Installation	panel mounting with 71x29mm drilling template (+0.2/-0.1mm)
Dimensions	front panel 32x74mm, depth 30mm (no terminals); 'switching' models: depth 59mm	Operating temperature	-5...55°C
		Storage temperature	-30...85°C
		Ambient humidity for use and storage	10...90% RH (non-condensing)

Technical data

	EM300 LX PTC/NTC	EM300 LX V/I	EM300 LX Pt100/TCJ/TCK
Display range:	- NTC probe: -50.0... 110.0°C - PTC probe: -55.0... 140.0°C	-99... 100 * -99.9... 100.0 * 999... 1000 *	- Pt100 probe: -200...800 °C - TCJ probe: -40...760 °C - TCK probe: -40...1350 °C
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 (0-1V, 0-5V, 0-10V) 1 current input (0-20mA, 4-20mA)	
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
Resolution:	1 or 0.1°C	1 or 0.1°C	Pt100: 0.1°C up to 199.9, 1°C TCJ and TCK: 1 °C
Power consumption:	230V~ model: 1.8 W max 12V~model: 0.5 W max 12...24V~model: 3 W max	230V~ model: 1.8 W max 12V~model: 0.5 W max	230V~ model: 1.8 W max 12V~model: 0.5 W max 12...24V~model: 3 W max
Power supply:	230V~ ±10% 50/60 Hz 12V~ ±10% 50/60 Hz 12...24V~/~ ±10% 50/60 Hz	230V~ ±10% 50/60 Hz 12V~/~ ±10% 50/60 Hz	230V~ ±10% 50/60 Hz 12V~ ±10% 50/60 Hz 12...24V~/12...36V~ ±10% 50/60Hz
Connections:	TTL port for connection to Copy Card and Televis System	TTL port for connection to Copy Card and Televis System **	TTL port for connection to Copy Card and Televis System **

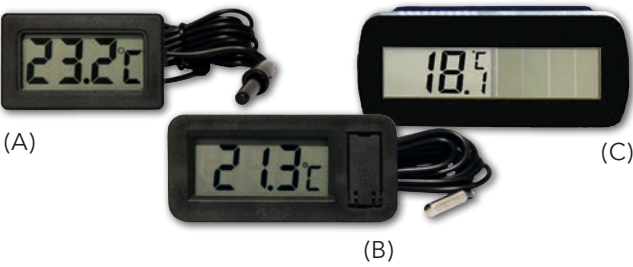
* selectable by parameter ** use BusAdapter 150

Wiring diagrams



EWTL 300 - EWTL 310 - DST-30

LCD thermometers



Codes	Description	Probe cable length
T1M1BT0107	(A) EWTL 300	1,5m
T1M1BT0109	(B) EWTL 310	1,5m
T1M1BT0105	(C) DST-30	1m
AT111120	EWTL300 32x64 Adapter	

Applications

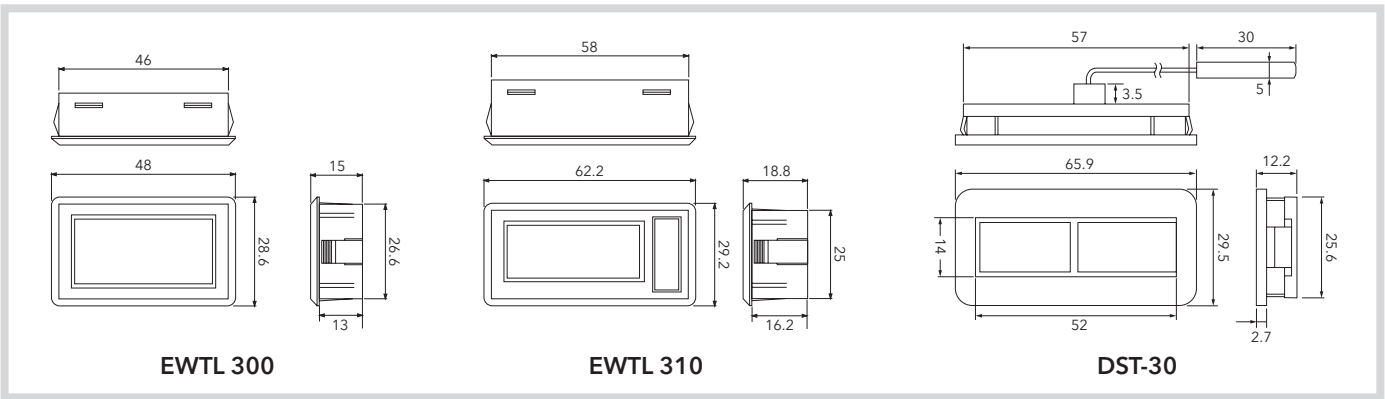
The EWTL 300/310 is a range of LCD digital temperature gauges with temperature probes connected to the instrument via a cable of length 1.5, 2 or 3 metres. An adapter that allows to replace 32x64 mm front tools (with 24.5x58 template hole mm) with the EWTL 300 thermometer is available. DST-30 is a solar-cell thermometer specifically designed for refrigerated counters and display units.

Common features

Installation	panel-mounted
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Technical data	EWTL 300	EWTL 310	DST-30
Display:	LCD with 2 and 1/2 digits	LCD with 2 and 1/2 digits	24x14mm LCD
Resolution:	0.1 °C	0,1 °C (1°C <20°C)	0.1°C
Accuracy:	±1°C	±1°C	±1°C
Probe:	connected to instrument, cable length 1.5m	connected to instrument, cable length 0.5 m, 1 m, 2 m or 3 m	connected to instrument, cable length 1m
Display refresh:	10 seconds	12 seconds	
Display range:	-50...70°C (-58...158 °F)	-50...70°C (-58...158 °F)	-20...80°C
Dimensions:	front panel 48x28.6 mm depth 13 mm	front panel 62.2x29.2 mm depth 16.2 mm	front panel 66x30 mm depth 11.6 mm
Mounting:	46x26.6 mm	58x25 mm	57x25.6 mm
Power supply:	two 1.5V LR 44 batteries or equivalent - duration 12 months	one 1.5V LR 44 battery or equivalent - duration 12 months	integrated solar cells
Protection rating:			IP68

Dimensions



EWDR 981- EWDR 984

DIN controllers for refrigeration



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

*selectable by parameter

Applications

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

Common features

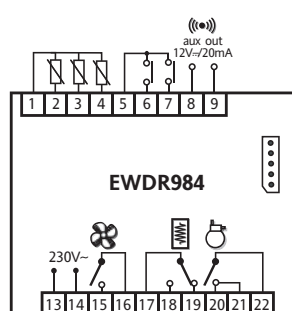
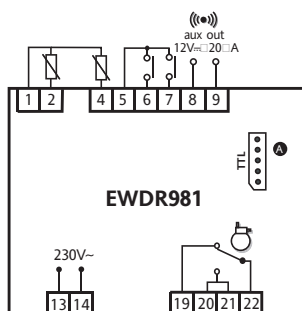
Container	plastic casing with 4 DIN modules	Ambient humidity for operation and storage	10...90% RH (non-condensing)
Dimensions	front panel 70x85mm, depth 61mm	Connections	on screw-on terminal block for $\leq 2.5\text{mm}^2$ wires (just one wire per terminal for power connections)
Installation	on DIN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

Technical data

	EWDR 981	EWDR 984
Display range:	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *	3 PTC or NTC *
Digital inputs:	2 voltage-free inputs *	2 voltage-free inputs *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 15A 1hp 250V~	1 SPDT 8(3)A 250V~ 1 SPST 15A 1hp 250V~ 1 SPST 8(3)A 250V~
Analogue outputs:	12V~/24mA output *	12V~/24mA 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:	5VA max	5VA max
Power supply:	230V~ $\pm 10\%$ 50/60Hz	230V~ $\pm 10\%$ 50/60Hz

* selectable by parameter

Wiring diagrams



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

DIN controllers for remote counters



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

*selectable by parameter

Applications

The EWDR range of products, available in a 4 DIN module size (70x85mm), is designed for applications requiring controllers installed on DIN rails Omega, such as electrical panels for cold rooms or applications with centralised electrical panels.
The EWDR 983 LX and EWDR 985 LX devices are equipped with an internal clock (RTC) for the management of the defrostings and the RS-485 serial port for the connection to Televis**System**.

Common features

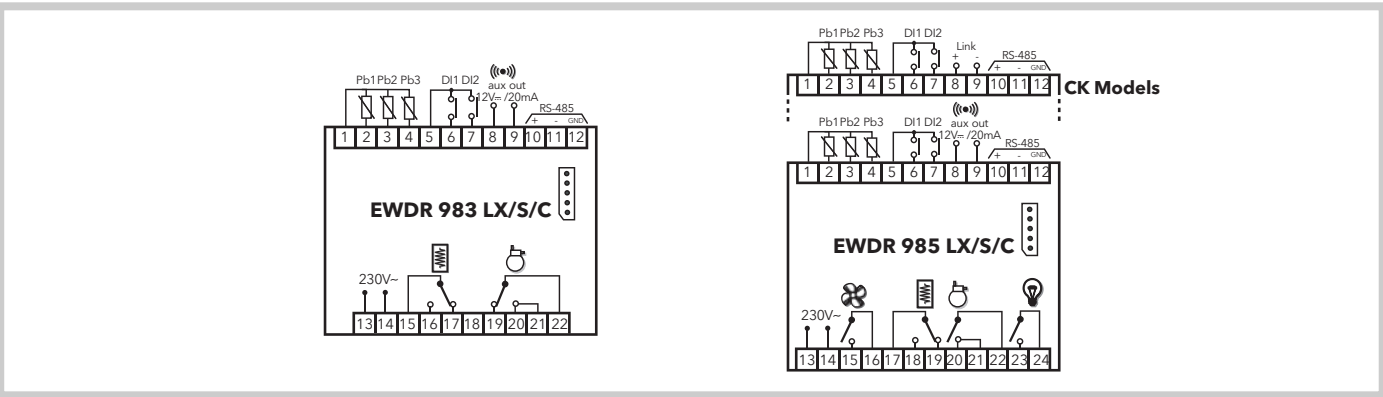
Container	plastic casing with 4 DIN modules	Ambient humidity for operation and storage	10...90% RH (non-condensing)
Dimensions	front panel 70x85mm, depth 61mm	Connections	on screw-on terminal block for ≤ 2.5mm ² wires (just one wire per terminal for power connections)
Installation	on DIN rail (Omega)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

Technical data

	EWDR 983 LX/S	EWDR 985 LX/S/C/K
Display range:	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C
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 System	TTL port for connection to Copy Card RS 485 for connection to Televis System
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPDT 15A 1hp 250V~	1 SPST 8(3)A 1/2hp 250V~ 1 SPDT 8(3)A 1/2hp 250V~ 1 SPST 15A 1hp 250V~ 1 SPST 8(3)A 1/2hp 250V~
Analogue outputs:	12V~/24mA output *	12V~/24mA 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:	5VA max	5VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Link:	not available	available
Clock:	available	available

* selectable by parameter

Wiring diagrams



DR4020

Universal DIN controllers



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

* selectable by parameter

Applications

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

Common features

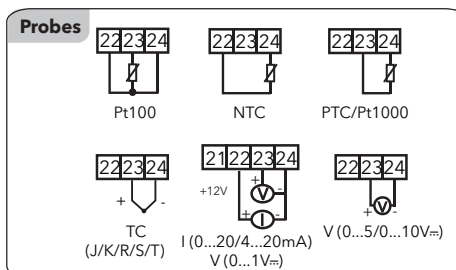
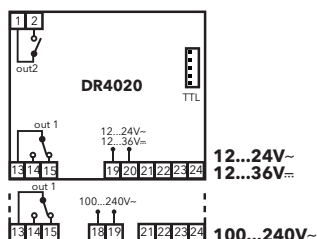
Container	plastic casing with 4 DIN modules	Operating temperature	-5...55°C
Dimensions	front panel 70x85mm, depth 61mm	Storage temperature	-20...85°C
Installation	on DIN rail (Omega) or panel mounting, with 70x45mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation and storage	10...90% RH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

Technical data

DR4020	
Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes diagram on Wiring Diagram)
Digital inputs:	not available
Connections:	TTL port for connection to Copy Card and Unicard
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	not available
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	4W max
Power supply:	• 12...24V~/12...36V= ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz

*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/PTC/Pt1000	100...240V~
E4D12AASBD710	DR4022	TC	100...240V~
E4D12IASBN710	DR4022	V/I/Pt100	100...240V~
E4D12VASBN410	DR4022	V/I/Pt100	12...24V~/=

*selectable by parameter

Applications

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

Common features

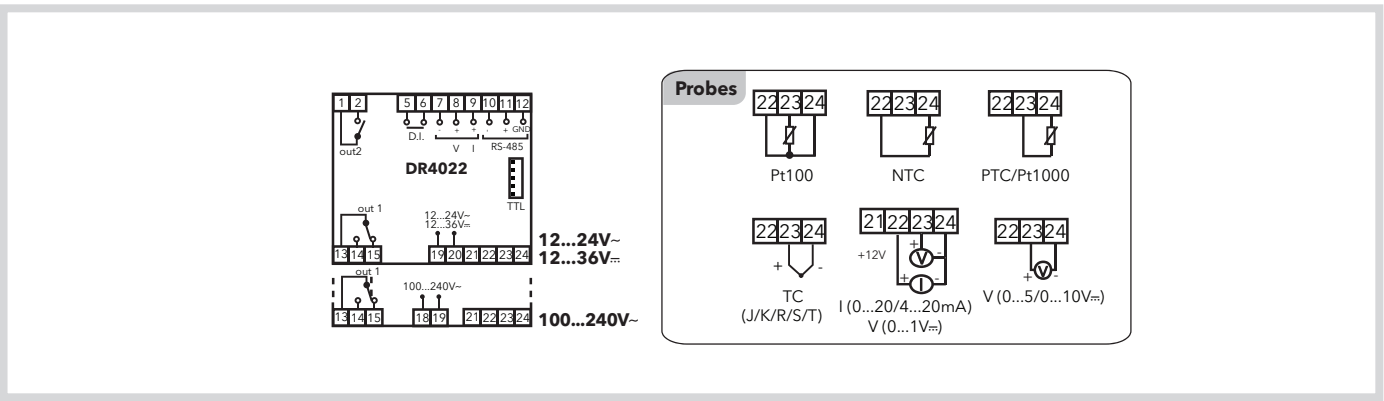
Container	plastic casing with 4 DIN modules	Operating temperature	-5...55°C
Dimensions	front panel 70x85mm, depth 61mm	Storage temperature	-20...85°C
Installation	on DIN rail (Omega) or panel mounting, with 70x45mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation and storage	10...90% RH (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, Televis System and ModBus protocol systems
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	4W max
Power supply:	• 12...24V~/12...36V= ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



EW 4820 (SSR)

Universal 48x48 controllers



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

* selectable by parameter

Applications

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

Common features

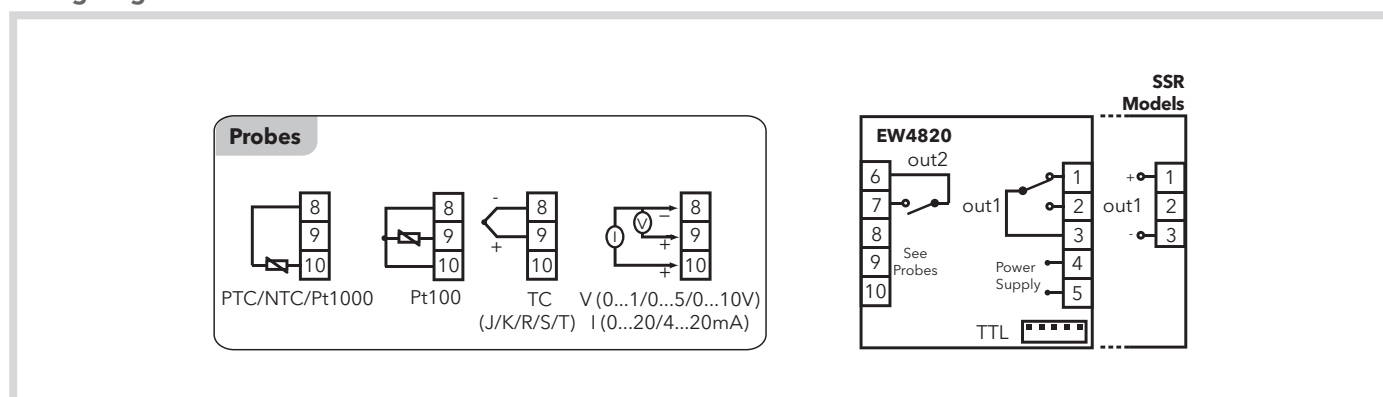
Container	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	Operating temperature	-5...55°C
Dimensions	front panel 48x48mm, depth 113mm	Storage temperature	-20...85°C
Installation	panel-mounting, with 45x45mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation and storage	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 250V~ 1 SPST 2A 250V~
Digital outputs - SSR models:	Vout = 0...12V~/ Imax = 0...15mA / Vmin = 7,5V 1 SPST 2A 250V~
Analogue output:	not available
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	• 2.45W for 12...24V~/12...36V= model • 2.40W for 100...240V~model
Power supply:	• 12...24V~/12...36V= ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



EW 4822 (SSR)

Universal 48x48 controllers with serial port



Codes	Description	Probe*	Power supply
E481BIISBH700	EW4822 AO 4...20mA	V/I/Pt100	100...240V~
E481BPIQMH700	EW4822 AO 0...20mA	Pt1000/Pt100/NTC/PTC/TC	100...240V~
E481BPVQMH700	EW4822 AO 0/10V	Pt1000/Pt100/NTC/PTC/TC	100...240V~
E481SPIQMH700	EW4822 AO 0...20mA SSR Output	Pt1000/Pt100/NTC/PTC/TC	100...240V~
E481BPIQMH400	EW4822 AO 0...20mA	Pt1000/Pt100/NTC/PTC/TC	12...24V~/±
E481SPIQMH400	EW4822 AO 0...20mA SSR Output	Pt1000/Pt100/NTC/PTC/TC	12...24V~/±

*selectable by parameter

Applications

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

Common features

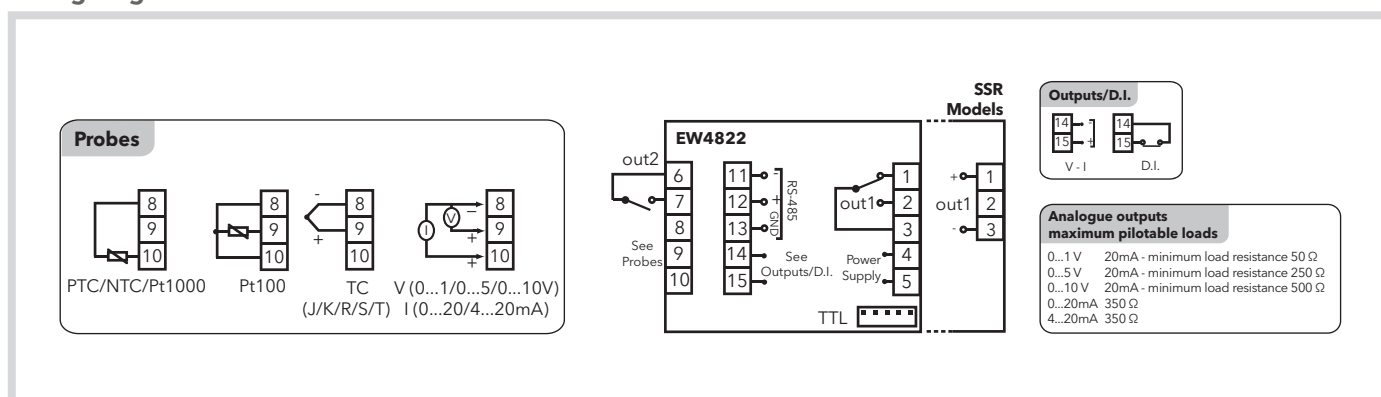
Container	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	Operating temperature	-5...55°C
Dimensions	front panel 48x48mm, depth 113mm	Storage temperature	-20...85°C
Installation	panel-mounting, with 45x45mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation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

Technical data

EW 4822 (SSR)	
Display:	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)
Digital inputs:	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card or Televis System + internal RS-485 for connection to systems with ModBus protocol
Digital outputs:	1 SPDT 3A 250V~ 1 SPST 2A 250V~
Digital outputs - SSR models:	Vout = 0...12V~/ I _{max} = 0...15mA / V _{min} = 7,5V 1 SPST 2A 250V~
Analogue output:	V: 0...1V, 0...5V, 0...10V or I: 0...20mA, 4...20mA maximum pilotable loads: please see wiring diagrams
Measurement range:	according to probe used
Accuracy:	according to probe used
Resolution:	according to probe used
Power consumption:	• 2.80W for 12...24V~/12...36V~/model • 2.60 W for 100...240V~/model
Power supply:	• 12...24V~/12...36V~/ ±10% 50/60Hz • 100...240V~/ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



EW7210 - EW7220

Universal 72x72 controllers



Codes	Descr.	Probe*	Power supply
E7211A0XHD700	EW7210	TC	100...240V~
E7211E0XHD700	EW7210	Pt100	100...240V~
E7211N0XHD700	EW7210	NTC/PTC/Pt1000	100...240V~
E7211A0XHD400	EW7210	TC	12...24V~/~
E7211E0XHD400	EW7210	Pt100	12...24V~/~
E7211N0XHD400	EW7210	NTC/PTC/Pt1000	12...24V~/~
E7212E0XBH700	EW 7220	Pt100	100...240V~
E7212A0XBD700	EW 7220	TC	100...240V~
E7212I0XBH700	EW 7220	V/I/Pt100	100...240V~
E7212N0XBD700	EW 7220	NTC/PTC/Pt1000	100...240V~
E7212E0XBH400	EW 7220	Pt100	12...24V~/~
E7212A0XBD400	EW 7220	TC	12...24V~/~
E7212I0XBH400	EW 7220	V/I/Pt100	12...24V~/~
E7212N0XBD400	EW 7220	NTC/PTC/Pt1000	12...24V~/~

*selectable by parameter

Applications

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

Common features

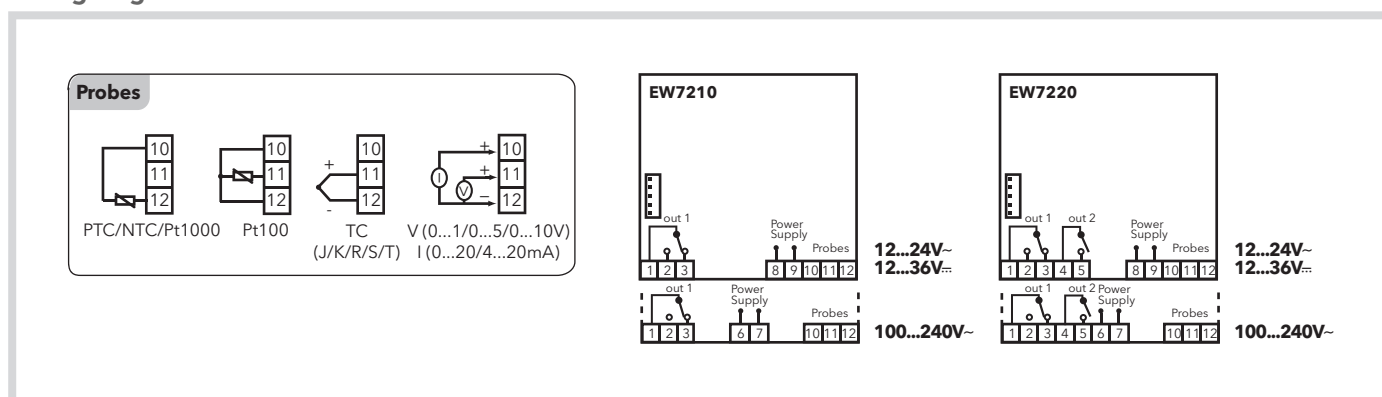
Container	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	Operating temperature	-5...55°C
Dimensions	front panel 72x72mm, depth 80mm	Storage temperature	-20...85°C
Installation	panel mounting with 67x67mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation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

Technical data

	EW7210	EW 7220
Display:	no decimal point * 2 4-digit displays + sign	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Probes table)	1 input* (see Probes table)
Digital inputs:	not available	not available
Connectivity:	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~
Analogue output:	not available	not available
Measurement range:	according to probe used	according to probe used
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power consumption:	4W max	4W max
Power supply:	12...24V~/12...36V~ ±10% 50/60Hz 100...240V~ ±10% 50/60Hz	12...24V~/12...36V~ ±10% 50/60Hz 100...240V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



EW7221 - EW7222

Universal 72x72 controllers with serial port



Codes	Descr.	Probe*	Power supply
E7213PAXBH700	Univ. EW7221	Pt100/Pt1000/NTC/PTC/TC	100...240V~
E7213IAXBH700	EW7221	V/I/Pt100	100...240V~
E7213PAXBD700	Univ. EW7221 - RS485	Pt100/Pt1000/NTC/PTC/TC	100...240V~
E7213PAXBH400	Univ. EW7221	Pt100	12...24V~/~
E7213PASBH700	Univ. EW7222 -RS485	Pt100/Pt1000/NTC/PTC/TC	100...240V~
E7213IASBH700	EW 7222	V/I/Pt100	100...240V~
E7213PASBH400	Univ. EW7222 -RS485	Pt100/Pt1000/NTC/PTC/TC	12...24V~/~

*selectable by parameter

Applications

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

Common features

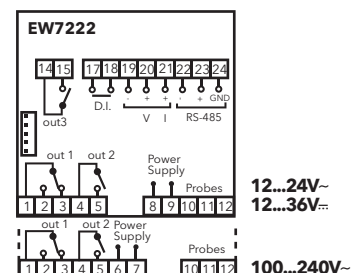
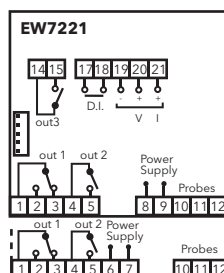
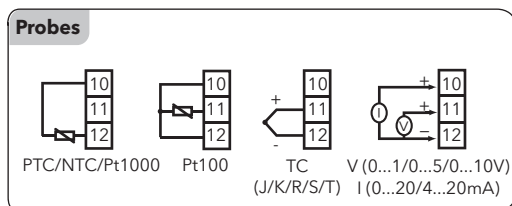
Container	PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film	Operating temperature	-5...55°C
Dimensions	front panel 72x72mm, depth 80mm	Storage temperature	-20...85°C
Installation	panel mounting with 67x67mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation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

Technical data

	EW7221	EW 7222
Display:	no decimal point * 2 4-digit displays + sign	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input* (see Analogue Inputs table)	1 input* (see Probes table)
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage
Connectivity:	TTL port for connection to Copy Card, Televis System or systems with ModBus protocol	TTL and RS-485 port for connection to Copy Card, Televis System or to systems based on ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~ 1 SPST 5A 250V~	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~ 1 SPST 5A 250V~
Analogue output:	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA	V-I: 0...1V, 0...5V, 0...10V / 0...20mA, 4...20mA
Measurement range:	according to probe used	according to probe used
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power consumption:	4W max	4W max
Power supply:	• 12...24V~/12...36V~ ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz	• 12...24V~/12...36V~ ±10% 50/60Hz • 100...240V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



12...24V~
12...36V~

12...24V~
12...36V~

100...240V~

100...240V~

EWTS 950 LX - EWTS 990 LX

32x74 timers and counters



Codes	Description	Power supply
ET010I0XTT700	EWTS 950 LX	230V~
ET020I0XTT700	EWTS 990 LX	230V~

Applications

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

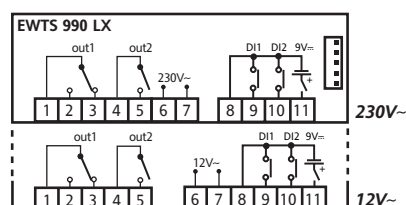
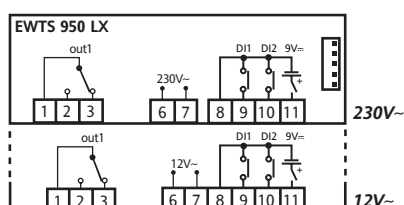
Common features

Container	PC+ABS UL94 V-0 plastic resin casing, polycarbonate display window, thermoplastic resin buttons	Operating temperature	-5...55°C
Dimensions	front panel 32x74mm, depth 59mm	Storage temperature	-30...85°C
Installation	panel mounting with 71x29mm (+0.2/-0.1mm) drilling template	Ambient humidity for operation and storage	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 System	TTL port for connection to Copy Card and Televis System
Digital outputs:	1 SPDT 8(3)A 1/2hp 250V~	1 SPDT 8(3)A 1/2hp 250V~
Accuracy:	3.6 sec/h	3.6 sec/h
Power consumption:	3VA max	3V~ max
Power supply:	12V~/= or 230V~ ±10% 50/60Hz	12V~/= or 230V~ ±10% 50/60Hz
External battery:	- power supply 9V= - battery duration: based on model, with 9V=/10mA/h battery duration 1h - instrument absorption with power supply from 10mA battery	- power supply 9V= - battery duration: based on model, with 9Vc/10mA/h battery duration 1h - instrument absorption with power supply from 10mA battery

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 up to 2 hp for on-board installation.

The EWRC 300 LX and EWRC 500 LX have 3 and 5 outputs respectively on configurable relays for controlling all the room's accessory users.

Common features

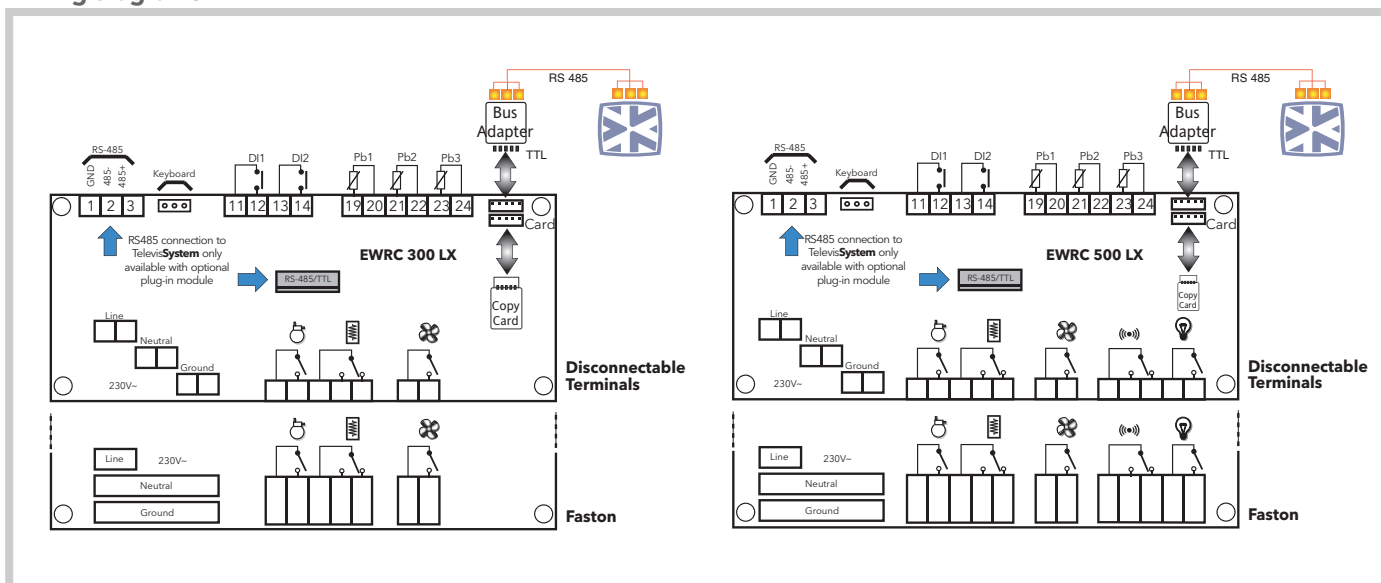
Front panel protection rating	IP54	Operating temperature	-5...50°C
Container	Bayblend FR110	Storage temperature	-20...85°C
Dimensions	front panel 210x245mm, depth 90mm	Ambient operation and storage humidity	10...90% RH (non-condensing)
Installation	wall-mounted		

Technical data

	EWRC 300 LX	EWRC 500 LX
Display range:	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...150.0 °C	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...150.0 °C
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 250V~ 1 SPDT 1Hp 8(8)A 250V~ 1 SPST ½Hp 8(4)A 250V~	1 SPST 2Hp 12(12)A 250V~ 1 SPDT 1Hp 8(8)A 250V~ 1 SPST 250V~ 1 SPDT ½Hp 8(4)A 250V~ 1 SPST 1hp 8(8)A 250V~
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:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Power consumption:	14W max	14W max
Power terminals:	removable terminals / 6.3mm faston upon request	removable terminals / 6.3mm faston upon request
HACCP:	optional	optional
Clock:	optional	optional
Power switch:	optional	optional

* (selectable by parameter)

Wiring diagrams



EWCM 4120 - 4150 - 4180

32x74 controllers for compressor racks



Codes	Description	Power supply
EM6A12001EL10	EWCM4120 /C	12V~
EM6A12001EL11	EWCM4120 /C with wires	12V~
EM6A22105EL10	EWCM4150 /C	12V~
EM6A22105EL11	EWCM4150 /C with wires	12V~
EM6A22101EL10	EWCM4180 /C	12V~
EM6A22101EL11	EWCM4180 /C with wires	12V~
EM6A12001EL16	KIT EWCM 4120/C	see kit table
EM6A22101EL16	KIT EWCM 4180/C	see kit table

Applications

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

Common features

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

Technical data

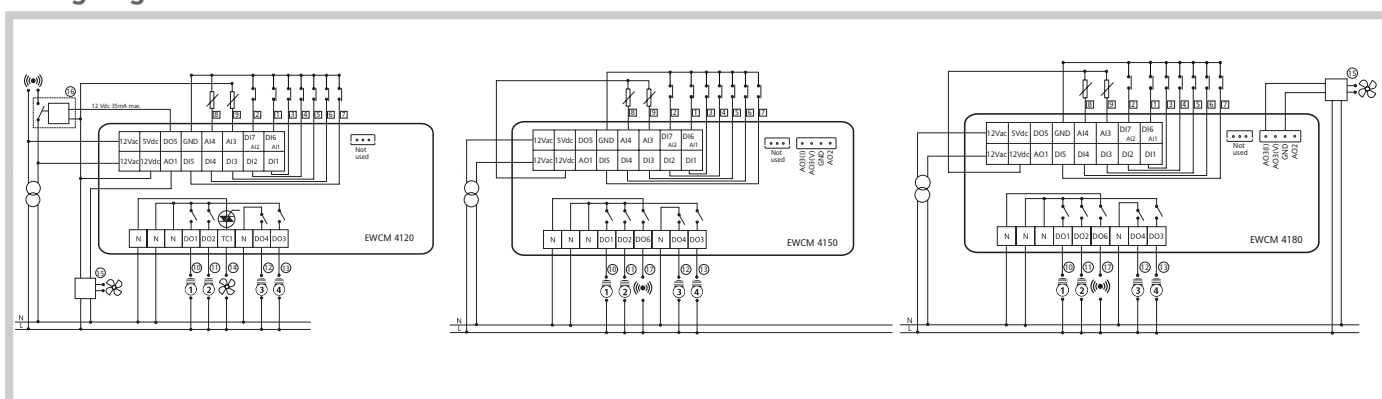
	EWCM 4120	EWCM 4150	EWCM 4180
Analogue inputs:	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*
Digital inputs:	7 SELV contacts	7 SELV contacts	7 SELV contacts
Analogue outputs:	• TRIAC • PWM - Open Collector	• 2 PWM - Open Collector • 0...10V / 4...20mA / 0...20mA*	• 2 PWM - Open Collector • 0...10V / 4...20mA / 0...20mA*
Digital outputs:	4 SPST 2A 250V~ + Open Collector	5 SPST 2A 250V~ + Open Collector	5 SPST 2A 250V~ + Open Collector
Connections:	TTL port for connection to Copy Card and TelevisSystem via optional module	TTL port for connection to Copy Card and TelevisSystem via optional module	TTL port for connection to Copy Card and TelevisSystem via optional module
Clock:	present	present	present
Power consumption:	5VA max	5VA max	5VA max
Power supply:	12V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz

* (selectable by parameter)

KIT

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

Wiring diagrams



EWCM 8900 - 9100 EO

DIN controllers for compressor racks



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

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

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

Applications

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

- Sub-critical CO₂ management, glycol, R290 and R427 rooms
- Rooms managed in cascade by plug&play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of www.eliwell.com.

Common features

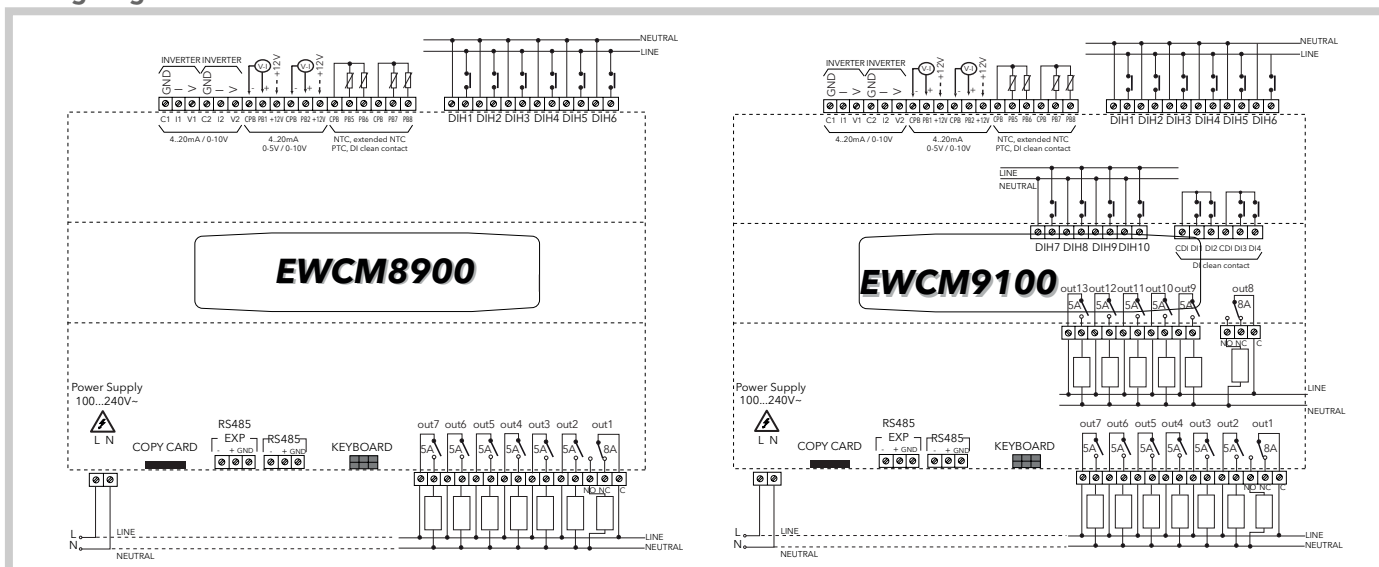
Insulation Class	2
Operating temperature	-5...55°C
Storage Temperature	-30...85°C
Ambient humidity of use and storage	10...90% RH (non-condensing)

Connector for base-keyboard connection	rapid 6-way connector
Compatible refrigerants	R22, R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO ₂), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23

Technical data

	EWCM 8900	EWCM 9100
Container	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60mm)	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60mm)
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...20mA / 0...5V / 0...10V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs	6 voltage (100...240V~)	10 voltage (100...240V~) + 4 configurable voltage-free
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	2 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ + 1 SPDT 8(3)A 250V~	11 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	• 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 discharge	inverter control both in suction and discharge
Clock:	present	present
Power consumption:	20W	20W
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

Wiring diagrams



EWCM 9900 EO

DIN controllers for compressor racks



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

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

- Sub-critical CO₂ management, glycol, R290 and R427 rooms
- Rooms managed in cascade by plug&play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of www.eliwell.com.

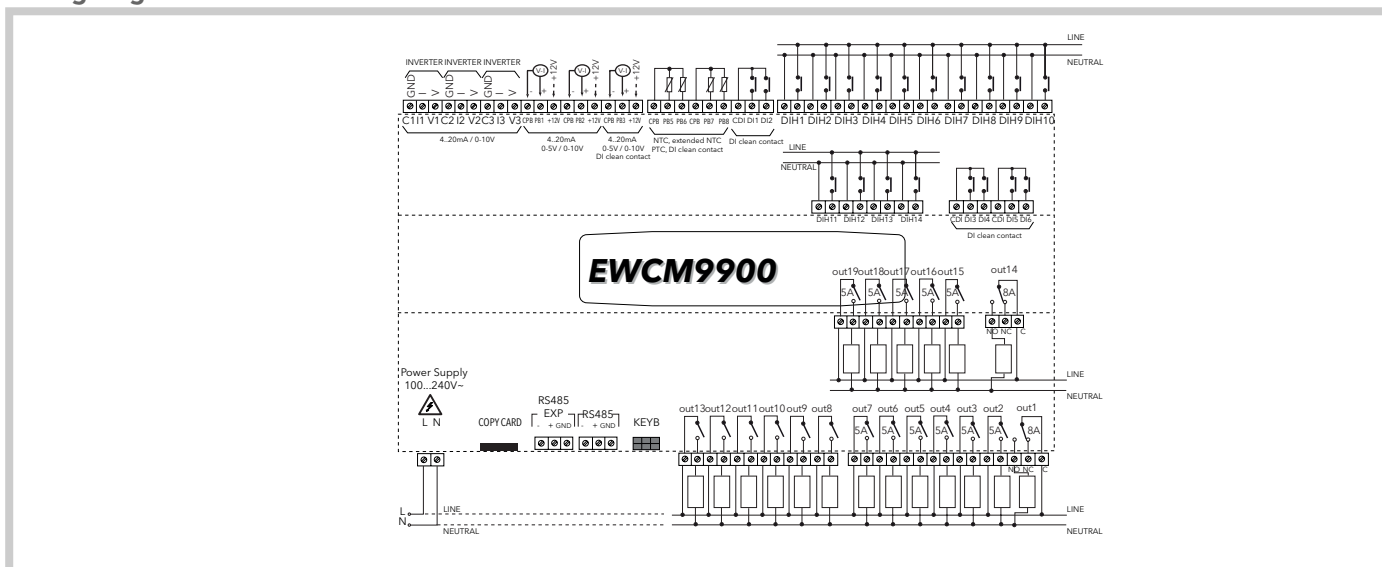
Common features

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

Technical data

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

Wiring diagrams



FASEC 33 - FASEC 43 (C) - FASEC 53

Speed controllers for single-phase fans



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

* probe not included

Applications

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

The FASEC 53 is a manual fan regulator suitable for application onto refrigeration units.

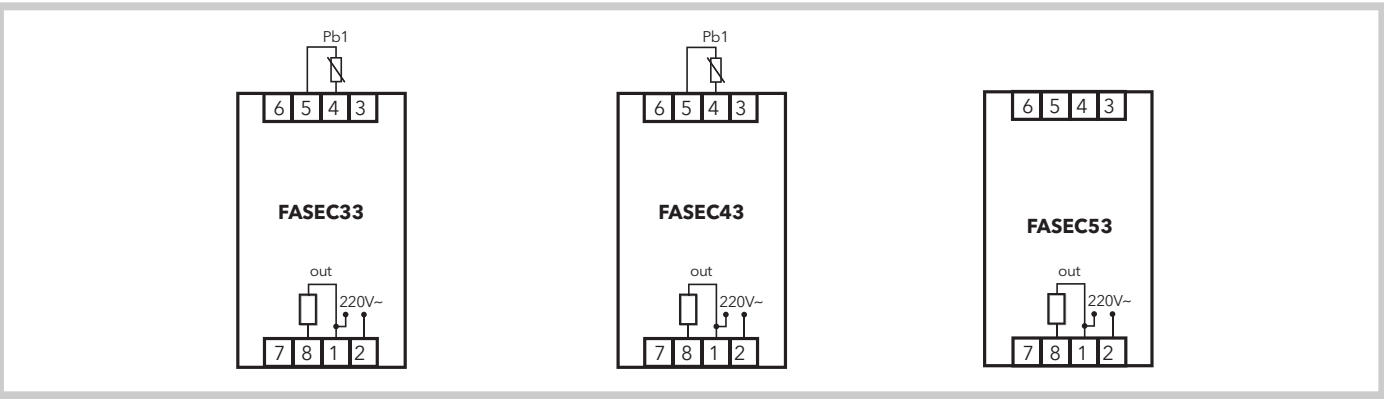
Common features

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

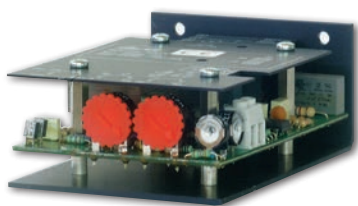
Technical data

	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	• FASEC 43: -40...30 °C • FASEC 43C: 0...60 °C	
External filter (for version 7A):	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt	load power supply max current 7A; cylinder diameter 38mm, height 28mm; M8 fixing bolt
Type of setting:	proportional to phase capacity step	proportional to phase capacity step	manual phase capacity step
Type of function:	for condensation	for evaporation	manual
Power supply:	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz

Wiring diagrams



Speed controllers for single-phase fans

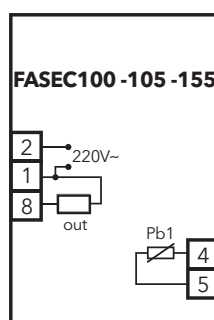


* probe not included

FASEC 100 units are automatic fan regulators suitable for application onto refrigeration units for both evaporation and condensation.

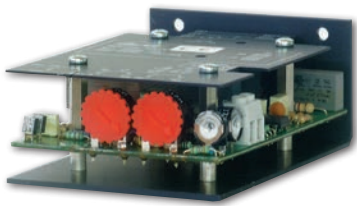
Installation	panel-mounted or on panel back (FASEC 100), wall-mounted (FASEC 105, 155)	Operating temperature	-5...60°C
		Storage temperature	-30...75°C

Wiring diagrams



FASEC 500 - FASEC 505 - FASEC 555

Speed controllers for single-phase fans



Codes	Description	Power supply
FA500780	FASEC 500	220V~
FA505780	FASEC 505	220V~
FA555700	FASEC 555	220V~

* probe not included

Applications

FASEC 500 units are automatic fan regulators suitable for application onto refrigeration units for both evaporation and condensation.

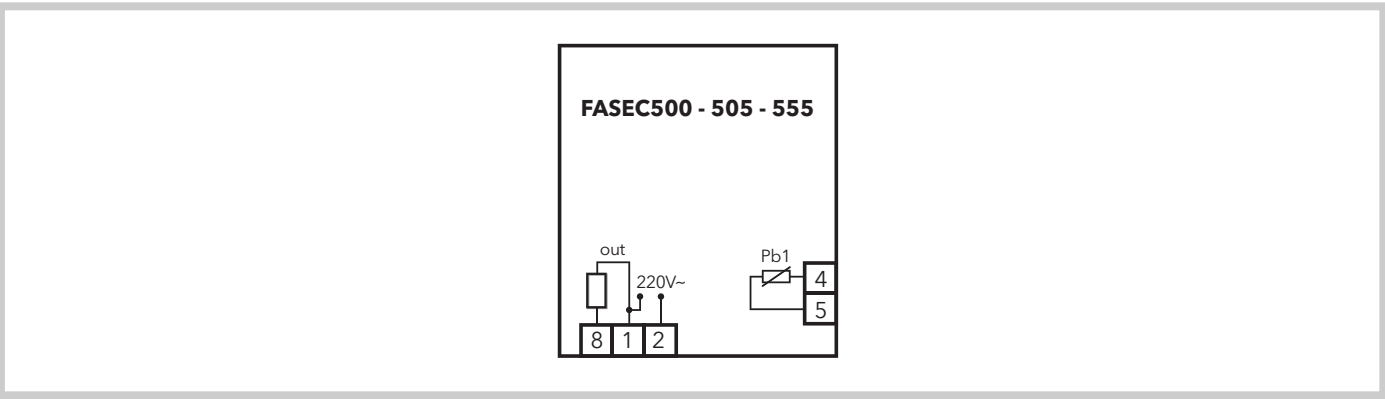
Common features

Installation	panel-mounted or on panel back (FASEC 500), wall-mounted (FASEC 505, 555)	Operating temperature	-5...60°C
		Storage temperature	-30...75°C

Technical data

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

Wiring diagrams



WM 253

Speed controllers for single-phase wall fans



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

Applications

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

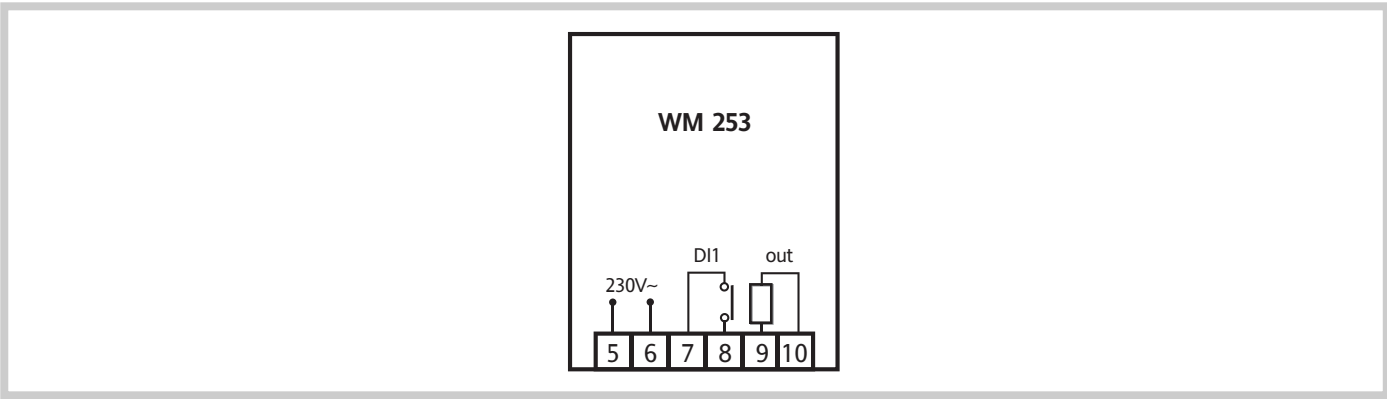
Common features

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

Technical data

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

Wiring diagrams



DRM300 - RGM300

Speed controllers for three-phase fans



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

Applications

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

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

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

Common features

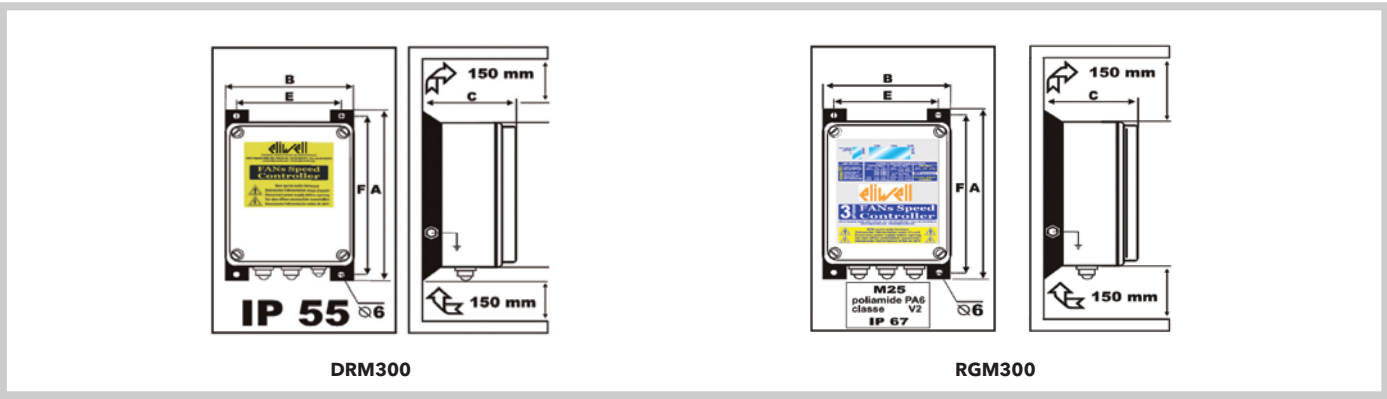
Flexible and can be used straight away	Signals in mA - V _~ - PWM
Includes Quick Start mode, with all regulation parameters preset	The software supervises regulator and fan operations

Technical data

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

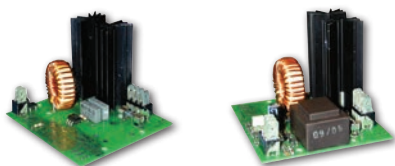
*for temperatures < -10°C use **Start/Stop** **for temperatures < -10°C use **S2**

Dimensions



CFS02- CFS04 - CFS06 - CFS08

Power modules to control fan speed



Codes	Description
CF10x11011000	CFS0x
CF10x21011000	CFS0x /V
CF10x31011000	CFS0x /I

x=2,4,6,8

Applications

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

Features

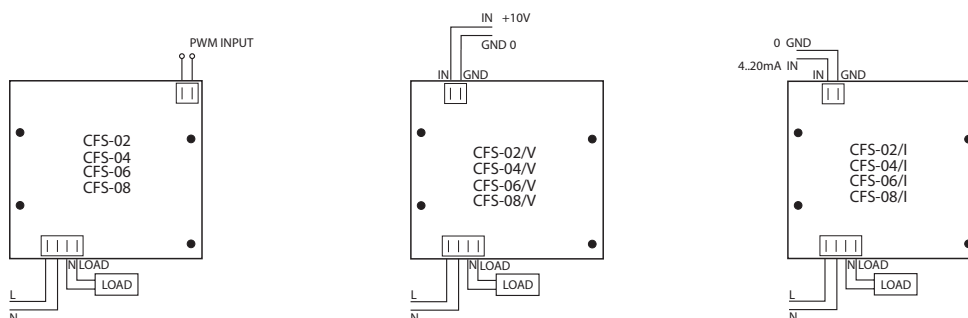
CFS regulators come in an "open board" format and are available in various models (see table).

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

Technical data

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

Wiring diagrams



SOLUTIONS FOR SUPERMARKETS

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

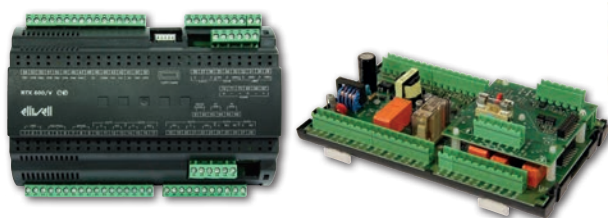
Energy saving solutions must also satisfy the sector's basic requirements, with special attention for food quality as provided by HACCP regulations and European standards (EN13845-EN12830) governing fresh and frozen food products.

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



RTX600/V - RTD600/V - KDEPlus - ECPlus

DIN controllers for remote EEV systems



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

Applications

RTX600/V and **RTD600/V** (Environmentally Optimised) are electronic devices used to control remote cabinets, with electronic expansion valve, used singly or together in islands or can be remote. 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.

Specifications

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 remote and island cabinets with **Link²** plug-n-play

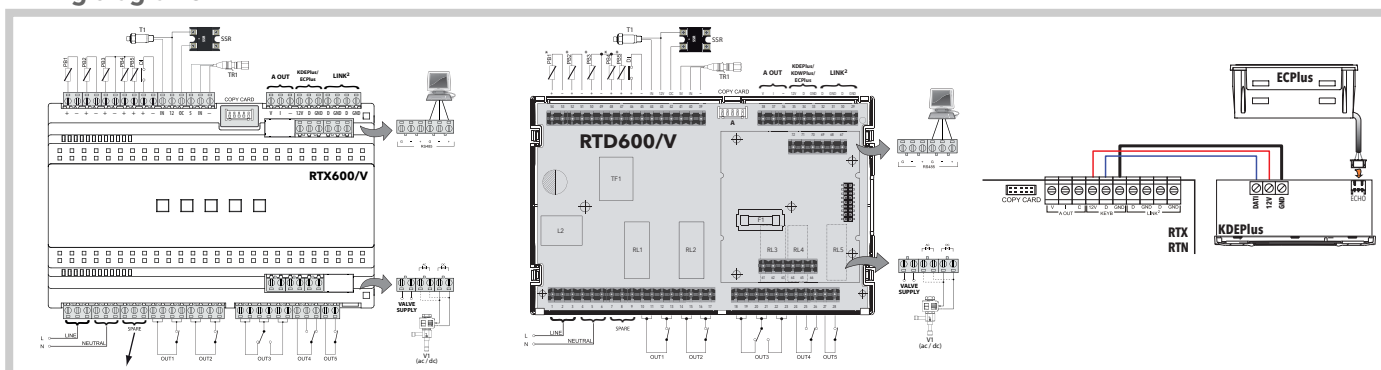
Compatible with NTC, Pt1000, PTC probes

Technical data

	RTX600/V - RTD600/V	KDEPlus	ECPlus
Casing:	PC+ABS resin casing, UL94 V-0 RTX600/V : with box RTD600/V : 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 71x29mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	-	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:	-	see power board	see power board
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 1 4...20mA/D.I.* 1 ratiometric/D.I.* + 1 D.I. voltage free	-	-
Connections:	• 1 voltage serial for keypad • 1 voltage serial for LAN • 1 RS-485 for connection to TelevisSystem or ModBus monitoring system • 1 TTL port for connection to Unicard and DeviceManager (via DMI)	• screw terminals for connection to power board • JST for connection to ECPlus display	• JST for connection to KDEPlus user terminal
Digital outputs:	2 SPST 16(8)A max 250V~ 2 SPDT 16(8)A + 8(4)A max 250V~ 1 SPST 8(4)A max 250V~ 1 O.C. multifunction: 12V= 20mA 1 SSR 100...240V~/~; I _{max} =300mA	-	-
Analogue outputs:	1 D.A.C. multifunction: 0...10V/4...20mA	-	-
Accuracy:	better by 1.0%	-	-
Resolution:	1 or 0.1°C	-	-
Power supply:	SMPS 100...240V~ ±10% 50/60 Hz	from power board	from power board
Power consumption:	7.5W max	-	-
Ambient operating temperature:	-5...+55°C	-5...+55°C	-5...+55°C
Ambient storage temperature:	-30...+85°C	-30...+85°C	-30...+85°C
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

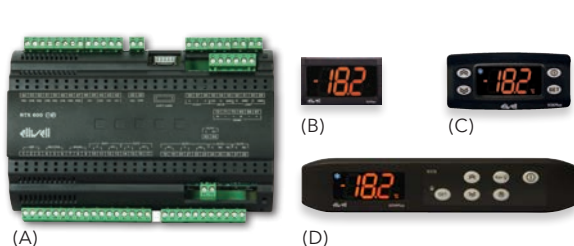
* selectable by parameter ° selectable by parameter (from power base)

Wiring diagrams



RTX600 - KDEPlus - KDWPlus - ECPlus

DIN controllers for cabinets and cold rooms



Codes	Description
RTX5HBM0S2H00	(A) RTX600
KDE400E004000	(C) KDEPlus
KDW6004004080	(D) KDWPlus
EH000050V4000	(B) ECPlus

Applications

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

Features

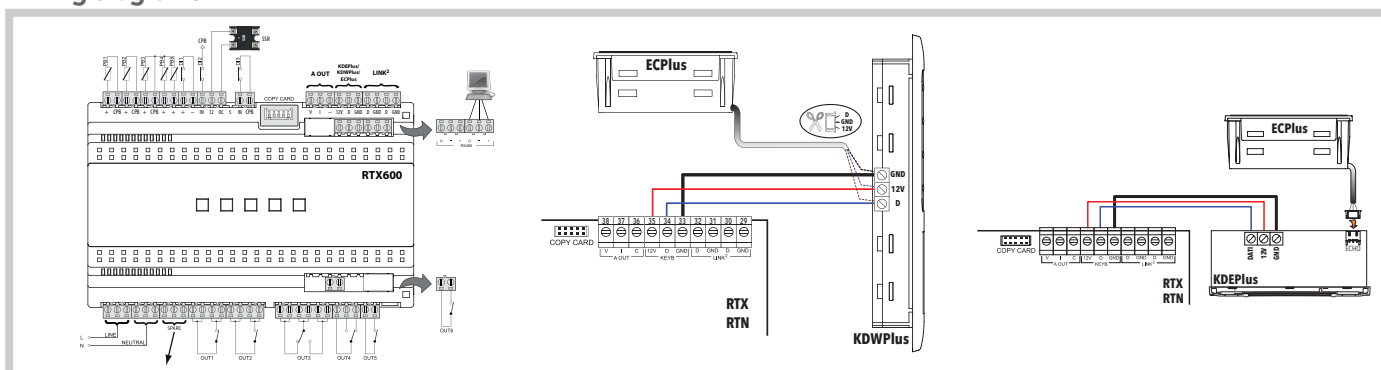
Relay of up to 2HP for direct control of loads.	Control of heating elements of frames / anti-mist resistances
Removable terminals and customised quick connections	Rapid synchronisation of remote and island cabinets with Link² plug-n-play
Intelligent defrosting (with clock) to save energy and preserve 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 23mm	front panel 48x28.6 mm, depth 15mm
Mounting:	on DIN Omega bar support	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel mounting with 150x31mm (+0.2/-0.1mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	-	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign	with decimal point ° 3 digits + sign
Display range:	• NTC: -50.0°C...+110°C; • PTC: -55.0°C...+150°C; • Pt1000: -60°C...+150°C	see power board	see power board	see power board
Analogue/digital inputs:	5 NTC/PTC/Pt1000/D.I.* 3 D.I.* voltage-free	-	-	-
Connections:	• 1 voltage serial for keypad • 1 voltage serial for LAN • 1 RS-485 for connection to TelevisSystem or Modbus • 1 TTL for connection to Unicar/DeviceManager (via DMI)	• screw terminals for connection to power board • JST for connection to ECPlus display	• screw terminals for connection to power board • JST for connection to ECPlus display	• JST for connection to KDWPlus user terminal or KDEPlus
Digital outputs:	1 SPST 2HP max 240V~ 1 SPST + 1 SPDT 1HP max 250V~ 1 SPDT 8(4)A max 250V~ 2 SPST 8(4)A max 250V~ 1 O.C. 12V= 20mA	-	-	-
Analogue outputs:	1 D.A.C. 0...10V/4...20mA	-	-	-
Accuracy:	better by 1.0%	-	-	-
Resolution:	1 or 0.1°C	-	-	-
Power supply:	SMPS 100...240V~ ±10% 50/60 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 Pulse SYSTEM

EEV system for retrofit



Codes	Description	Details
EVD2A43BSC000	V800/P1	see model table
EVD2A53BSC000	V800/P3	see model table
ID34DR45CDH00	ID985 /V	see model table
WK1400100N000	IWK /V	see model table
EVK2A43BXC010	Standard kit	see kit table
EVK2A43BXC020	Starter kit	see kit table
DMI100x002000	Device Manage Interface	see accessories table

Applications

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

Features

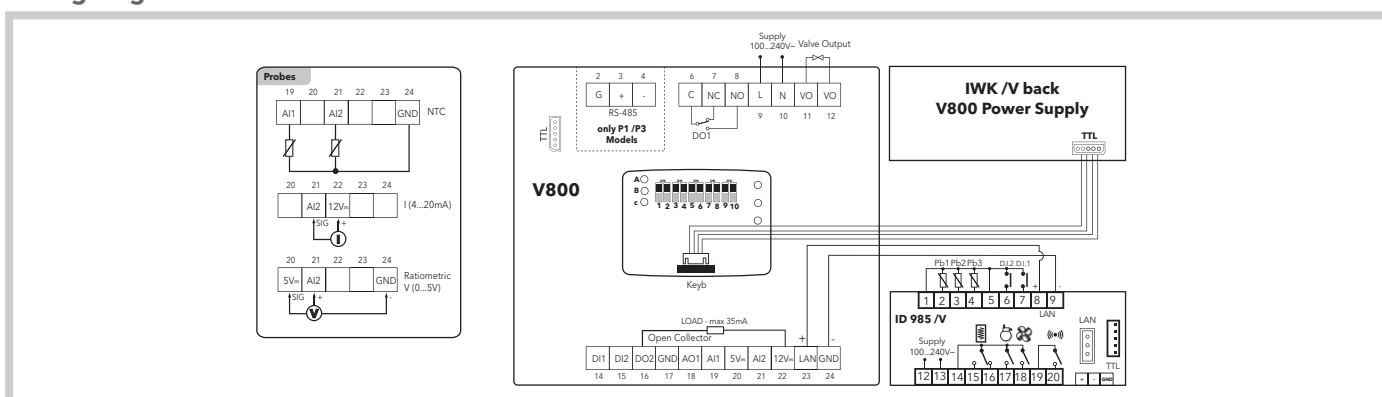
Container	PC+ABS UL94 V-0 plastic resin casing	Ambient operation and storage humidity	10...90% RH (non-condensing)
Operating temperature	-5...55°C		
Storage temperature	-20...85°C		

Technical data

	V 800	ID 985/V	IWK/V
Dimensions:	front panel 70.2x87mm, depth 61.6mm	front panel 74x32mm, depth 60mm	front panel 74x32mm, depth 30mm
Mounting:	on DIN Omega bar support	panel mounting with 71x29mm drilling template	panel mounting with 71x29mm drilling template
Display:	-	no decimal point * 3 and a half digits + sign	no decimal point * 4 and a half digits + sign
Display range:	-	-55...140°C	-55...140°C
Analogue inputs:	1 NTC/4-20mA/0-5V* 1 NTC/4-20mA*	3 NTC/PTC*	-
Digital inputs:	2 voltage free	2 voltage free	-
Connections:	• TTL port for connection to CopyCard and TelevisSystem • TTL port for connection to USB Copy Card and IWK/V • LAN port for connection to ID 985/V • RS-485 serial port: Models/P1/P3	• TTL port for connection to CopyCard and TelevisSystem - • LAN port for connection to V800 • RS-485 serial port	- - • TTL port for connection to V800 - - -
Digital outputs:	1 SPDT N.O. 5A 250V~, N.C. 2A 250V~ 1 open collector max current 35mA	1 SPDT 5(2)A 1/4 HP 250V~ 3 SPST 3A 250V~	-
Analogue outputs:	1 0...10V max current 20mA	-	-
Accuracy:	better than 0.5% of end of scale +1 digit	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	1 or 0.1°C
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	from V800
Power consumption:	3W max	2.5W max	<1W
User interface:	10-way DipSwitch	LED display	LED display

*(selectable by parameter)

Wiring diagrams



EEV Pulse SYSTEM

EEV system for retrofit



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

Applications

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

Model

Code	Description	Details
EVD2A43BSC000	V800/P1	230V~ valve control. on-board RS485
EVD2A53BSC000	V800/P3	230V = valve control. on-board RS485
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.

Kit

Code	Description	Details
EVK2A43BXC010	Standard Kit	Includes: • 1 x ID 985 /V • 1 x V800/P2 • 1 x 'FAST' NTC probe (SN8P0X3002): • 1 x ratiometric probe (TD420030)
EVK2A43BXC020	Starter Kit	Includes: • 1 x ID 985 /V • 1 x V800/P2 • 1 x 'FAST' NTC probe (SN8P0X3002): • 1 x ratiometric probe (TD420030) • 1 x USB Copy Card (CCA0BUI02N000) • 1 x Device Manager CD (DMP1000002000) • 1 x Device Manager Interface - DMI

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 (CO₂) - R507A - R717 (NH₃)

PULSE* valve compatibility

Model	Brand
PXV	Eliwell manufactured by Castel
AKV10	Danfoss
AKV15	Danfoss
AKV20	Danfoss
AKVA (NH ₃)	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 systems, especially refrigerated counter displays of the kind used in supermarkets.

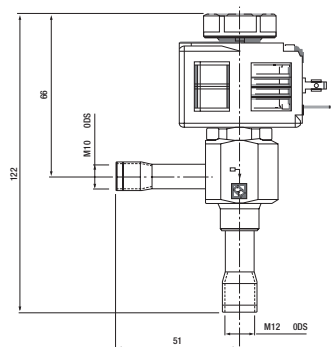
Technical data

	PXV
Voltage tolerance (V~):	+6/-10%
IEC Enclosure rating:	IP65; IP68
Operating principle:	Pulse Width Modulation
Maximum operating time:	6 seconds
Minimum operating time:	1 second
Capacity (R404A):	15 kW
Adjustment range (capacity range):	10...100%
Braze welded connections:	3/8" - 1 / 2", 10mm - 12mm, 1 / 2" - 5/8", 12mm - 16mm
TS temperature:	- 40°C - 100°C
Ambient temperature:	- 40°C - 50°C
Leakage from valve seat:	<1cc/min <0.003 of kv value
Minimum open pressure differential 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

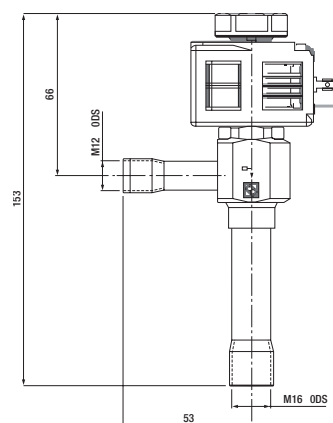
Coils

Type of Coil	Eliwell part number	Voltage (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)		
						(50Hz)	(50Hz)					
PXV	PXVB0ARA20000	24	+10 / -10	50/60	8	1490	700	F	110	50	connector DIN 43650 code 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 ₂	PXVE0ARA60000	220 / 230	+6 / -10	50/60	22	190	110	F	110	50		

Dimensions



Orifices 1 to 6



Orifices 7 to 9

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 refer to: Evaporating temp. T_{evap} = +5°C • Condensing temp. T_{cond} = +32°C • Temp. of valve input liquid T_{liq} = +28°C

PXV valves orifice kits

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

Coils and connectors

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

Dimensions and specifications

Orifices Kits

Coils and connectors

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

PXV

Electronic pulse expansion valve



General specifications and cooling capacities of CO₂ valves (R744)

Code	Type of orifice	Orifice hole (mm)	ODS connections				Flow factor Kv (m3/h)	Cooling capacity (kW)
			(inches)		(mm)			Refrigerant
			IN	OUT	IN	OUT		R744 (CO ₂)
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: Evaporating temp. T_{evap} = -35°C • Condensing temp. T_{cond} = 0°C • Temp. of valve input liquid T_{liq} = -31°C

PXV valves orifice kits

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

Coils and connectors

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

Dimensions and specifications

Orifices Kits

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

Coils and connectors

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

PXV

Electronic pulse expansion valve



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

Code	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
PXVVM10S010000			-	-	10	12		
PXVV03S020000	2	0.7	3/8"	1/2"	-	-	0.017	1.4
PXVVM10S020000			-	-	10	12		
PXVV03S030000	3	0.8	3/8"	1/2"	-	-	0.023	1.9
PXVVM10S030000			-	-	10	12		
PXVV03S040000	4	1.1	3/8"	1/2"	-	-	0.043	2.9
PXVVM10S040000			-	-	10	12		
PXVV03S050000	5	1.3	3/8"	1/2"	-	-	0.065	5.0
PXVVM10S050000			-	-	10	12		
PXVV03S060000	6	1.7	3/8"	1/2"	-	-	0.113	7.9
PXVVM10S060000			-	-	10	12		
PXVV04S070000	7	2.3	1/2"	5/8"	-	-	0.200	14.3
PXVVM12S070000			-	-	12	16		
PXVV04S080000	8	2.5	1/2"	5/8"	-	-	0.230	16.4
PXVVM12S080000			-	-	12	16		
PXVV04S090000	9	2.7	1/2"	5/8"	-	-	0.250	17.9
PXVVM12S090000			-	-	12	16		

Rated cooling capacities refer to: Evaporating temp. T_{evap} = +5°C • Condensing temp. T_{cond} = +32°C • Temp. of valve input liquid T_{liq} = +28°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 220/230V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0ARA20000	EEV Coil 24V~	R290, R22, R134a, R404A, R407C, R410A, R507
PXVB0AR020000	IP65 connector for EEV coil	All

Dimensions and specifications

Orifices Kits

Coils and connectors

EEV Stepper system

EEV stepper system



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

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

Applications

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

Specifications

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

Technical data

	XVD 420H 485	SKP10
Dimensions:	front panel 70.2x87 mm, depth 61.6 mm	front panel 74x32mm, depth 60mm
Mounting:	on DIN Omega bar support	panel mounting (71x29mm drilling template)
Display:	-	3 and a half digits + sign
Display range:	-	-55...140°C
Analogue inputs:	2x NTC/Pt1000/4...20mA/0-5V~/0-10V~*	-
	2x NTC/Pt1000	-
Digital inputs:	2 voltage free	-
Connections:	- TTL (Keyb) for connection to Unicard/MFK/DMI - TTL for Televis/Modbus connection - RS485 for connection Televis/Modbus	Lan port for connection to XVD
Digital outputs:	1 SPST: N.O. 5A 250V~ 1 Open Collector 12V~ max 100mA	-
Accuracy:	better than 0.5% of end of scale	better than 0.5% of end of scale
Resolution:	0.1°C	1 or 0.1°C
Power supply:	24V~/±10% 50/60 Hz	100...240V~ ±10% 50/60Hz
Power consumption:	30VA / 25W	<1W
Interface:	-	LED display

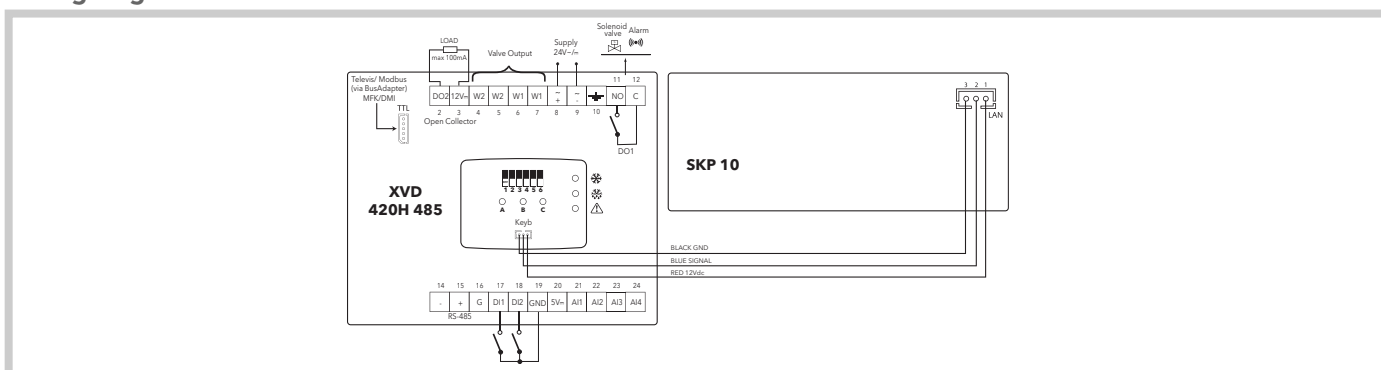
* (selectable by parameter)

STEPPER valve compatibility*

Model	Brand
SXVB 24V Bipolar	Eliwell - manufactured by Castel
ETS50 12V Bipolar, ETS100 12V Bipolar	Danfoss
EX5 24V Bipolar, EX6 24V Bipolar, EX7 24V Bipolar, EX8 24V Bipolar	Alco
E2V, E3V, E4V, E5V, E6V, E7V 12V Bipolar	Carel
SER(I) G, J, K, B, C, D 12V Bipolar	Sporlan
SER 1.5 TO 20 12V Bipolar	Sporlan
SEI-30 12V Bipolar, SEI-50 12V Bipolar	Sporlan
SEH 12V Only bipolar model	Sporlan
DPF(Q)/DPF(T01) 12V Unipolar	Sanhua
EXM246/EXL246 12V Unipolar	Alco

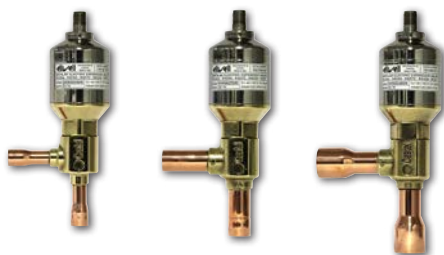
*if using other valves, contact Eliwell Technical Support

Wiring diagrams



SXVB

Bipolar 'stepper' expansion valve



Applications

The bipolar expansion valve series SXVB regulates the flow of refrigerant to the evaporator by proportionally modulating its opening and closing, allowing a wide range of power variation.

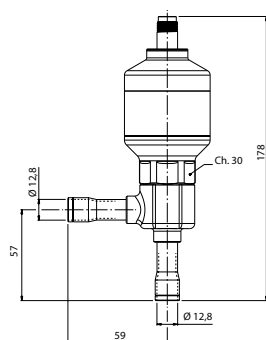
Highly precise and reliable control of refrigerant flow increases the efficiency of the entire system.

There are two valve bodies and five orifices to meet power ratings ranging from 28kW (R404) to 121 kW (R410).

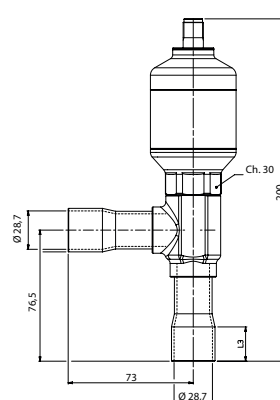
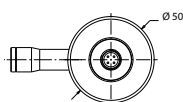
Technical data

SXVB	
Type of actuator:	Bipolar stepper motor with permanent magnet
Type of Control:	Full Step (advised)
Stroke / Steps for complete closing:	8.5mm / 195 Step
Rated power:	from 28.5 kW to 121 kW depending on the refrigerant and flow direction
Rated power operating conditions:	evapoating temperature = +5°C condensing temperature = +32°C sub-cooling = +4°C overheating = +7°C
Adjustment range:	10...95%
Refrigerant:	R22, R407c, R404a, R134a, R410A (R744 and hydrocarbons on request)
MOPD:	see cooling capacity table
Maximum operating pressure:	45 bar
TS temperature:	-40 / +105°C
Protection:	IP 67
Driver:	Eliwell XVD, Eliwell V910
Connections and geometry:	brazed welded tube, angled
Operation:	Bidirectional
Sight glass:	not available
Certifications:	CE
Possible operating angles	360°
Motor:	removable and replaceable
Step angle:	15°± 15%
Step:	0.042mm
Rated speed:	0-20 mm/s (500 step/s max) advisable 0.8 mm/s (20 step/s)
Contact current	100% Duty Cycle
Steps between 10% and 95% of effective stroke	>500 million steps
N° of cycles tested between 10% and 95% of effective stroke	~5 million cycles
Maximum overstroke steps	150.000 cycles of 190 steps each
Rated voltage	24 V
Rated phase current	200 mA
Connector	4-way - M12 4G 3mt (available from 1.5 to 15m, standard 3m)

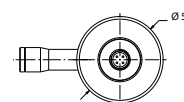
Valve body dimensions



Body 2 - example model 262270040

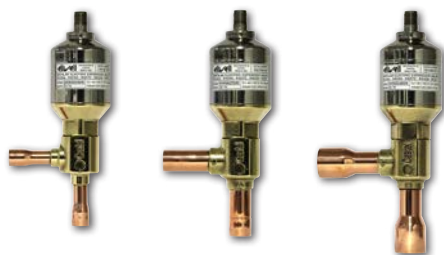


Body 3 - example model 263440090



SXVB

Bipolar 'stepper' expansion valve



General specifications and cooling capacities of valves

Code	Body	Orifice hole (mm)	ODS connections	MOPD (bar)	Inlet	Refrigerant cooling capacity (kW)*			
						R410A	R407C	R404A	R134a
SXVB262270040	2	2.7	1/2"	40	side	47.6	41.3	28.5	29.1
				40	under	46	40.6	28.5	28.6
SXVB262270050			5/8"	40	side	47.6	41.3	28.5	29.1
				40	under	46	40.6	28.5	28.6
SXVB262270070			7/8"	40	side	47.6	41.3	28.5	29.1
				40	under	46	40.6	28.5	28.6
SXVB26227M120			12mm	40	side	47.6	41.3	28.5	29.1
				40	under	46	40.6	28.5	28.6
SXVB262320040	2	3.2	1/2"	40	side	59	51.2	35.3	36
				40	under	54	47.6	32.8	35.6
SXVB262320050			5/8"	40	side	59	51.2	35.3	36
				40	under	54	47.6	32.8	35.6
SXVB262320070			7/8"	40	side	59	51.2	35.3	36
				40	under	54	47.6	32.8	35.6
SXVB26232M120			12mm	40	side	59	51.2	35.3	36
				40	under	54	47.6	32.8	35.6
SXVB263360070	3	3.6	7/8"	40	side	85.1	73.9	51	52
				40	under	78.1	68	47.5	51.4
SXVB263360090			1 1/8"	40	side	85.1	73.9	51	52
				40	under	78.1	68	47.5	51.4
SXVB263400070	3	4.0	7/8"	40	side	85.1	73.9	51	52
				30	under	78.1	68	47.5	51.4
SXVB263400090			1 1/8"	40	side	85.1	73.9	51	52
				30	under	78.1	68	47.5	51.4
SXVB263440070	3	4.4	7/8"	35	side	121	105	73	74
				23	under	111	98	67	73
SXVB263440090			1 1/8"	35	side	121	105	73	74
				23	under	111	98	67	73

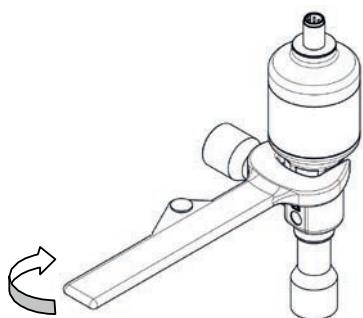
*Rated cooling capacities refer to:

Evaporation temp. $T_{evap} = +5^{\circ}\text{C}$ • Condensation temp. $T_{cond} = +32^{\circ}\text{C}$ • Sub-cooling 4°C • Overheating 7°C

Cable

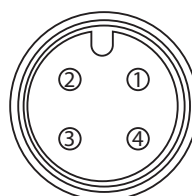
Code	Description
SXVB2624VC300	3m cable

Tightening torque - Connector

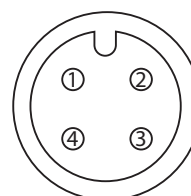


→ Min = 31,5 Nm

→ Max = 35 Nm



Connector valve



Connector Cable

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

EWCM 8900 - 9100 EO

DIN controllers for compressor racks



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

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

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

Applications

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

- Sub-critical CO₂ management, glycol, R290 and R427 rooms
- Rooms managed in cascade by plug&play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of www.eliwel.com.

Common features

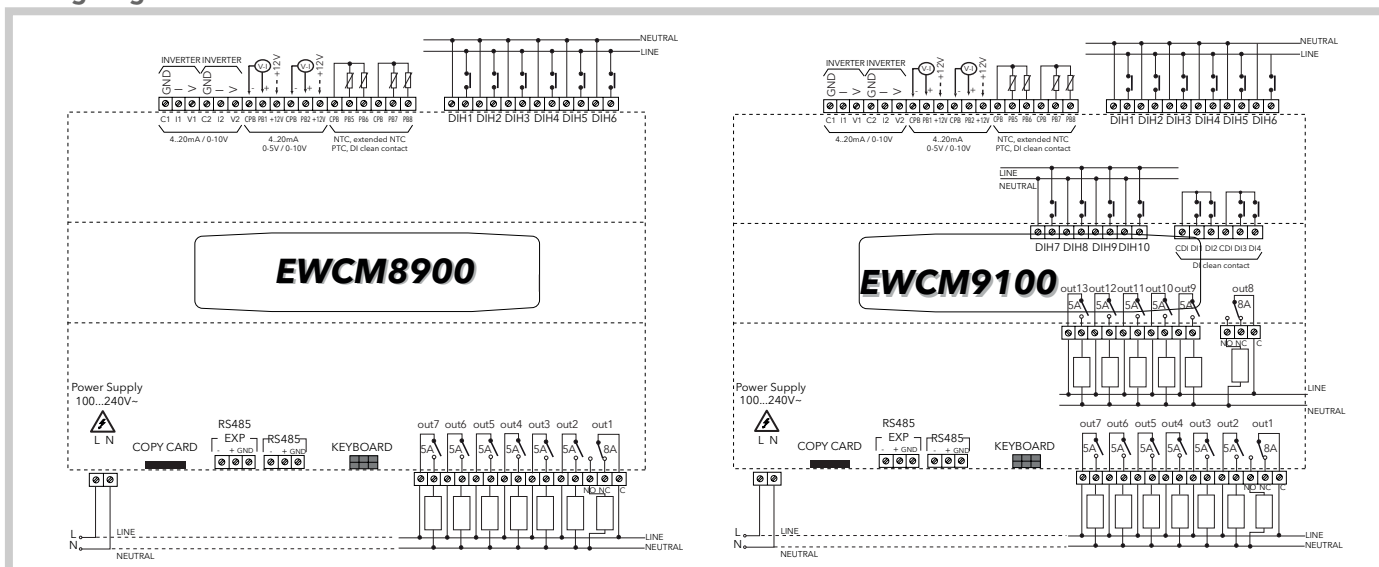
Insulation Class	2
Operating temperature	-5...55°C
Storage Temperature	-30...85°C
Ambient humidity of use and storage	10...90% RH (non-condensing)

Connector for base-keyboard connection	rapid 6-way connector
Compatible refrigerants	R22, R134a, R502, R404A, R407C, R507, R717 (Ammonia), R410A, R417a, R744 (CO ₂), R407A, 407F, R290 (Propane), R427, R600A (Isobutane), R23

Technical data

	EWCM 8900	EWCM 9100
Container	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60mm)	PC+ABS UL94 plastic resin casing V-0 13 DIN modules (227.5x110x60mm)
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...20mA / 0...5V / 0...10V)	4 NTC/NTC extended/PTC/D.I.+ 2 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs	6 voltage (100...240V~)	10 voltage (100...240V~) + 4 configurable voltage-free.
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	2 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ + 1 SPDT 8(3)A 250V~	11 SPST 5(2)A 250V~ + 2 SPDT 8(3)A 250V~
Connections:	• 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...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

Wiring diagrams



EWCM 9900 EO

DIN controllers for compressor racks



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

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

in A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; O: RUS/ENG

Keyboard included.

Applications

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

- Sub-critical CO₂ management, glycol, R290 and R427 rooms
- Rooms managed in cascade by plug&play V910 module
- Advanced management of rooms with inverter
- Rapid configuration tool for PC DeviceManager

Updates for glossaries, applications, and the always updated list of compatible refrigerants are available in the reserved area of www.eliwell.com.

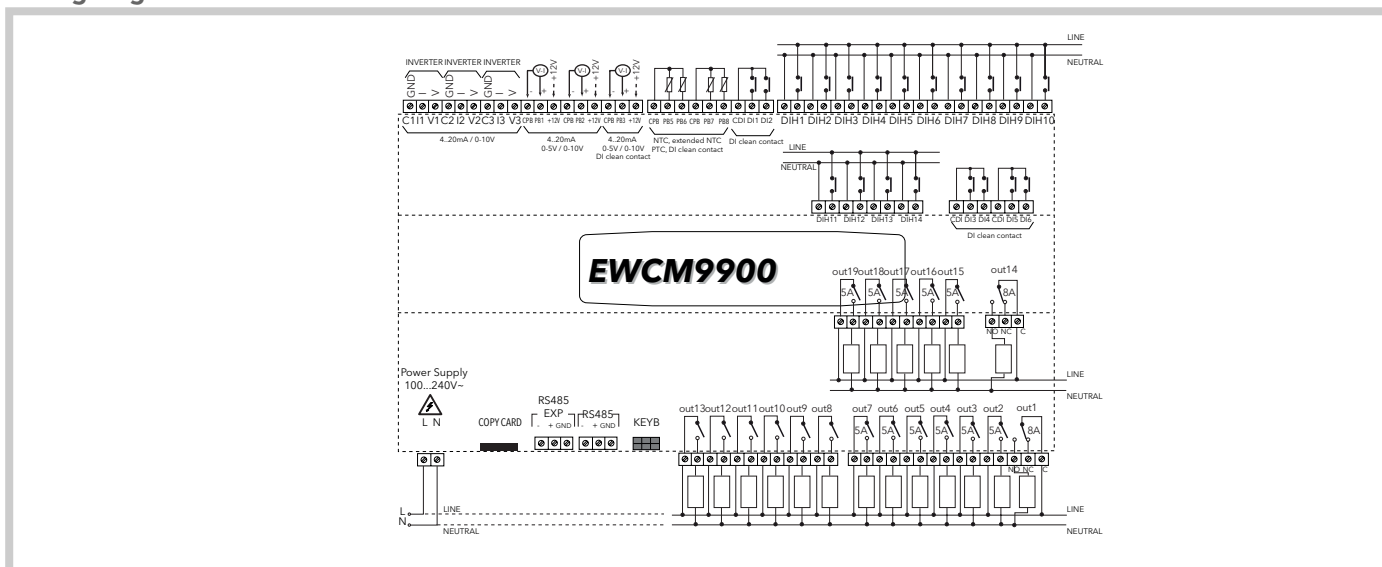
Common features

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

Technical data

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

Wiring diagrams



Subcritical CO₂ cascade system

Motorised electronic valve control

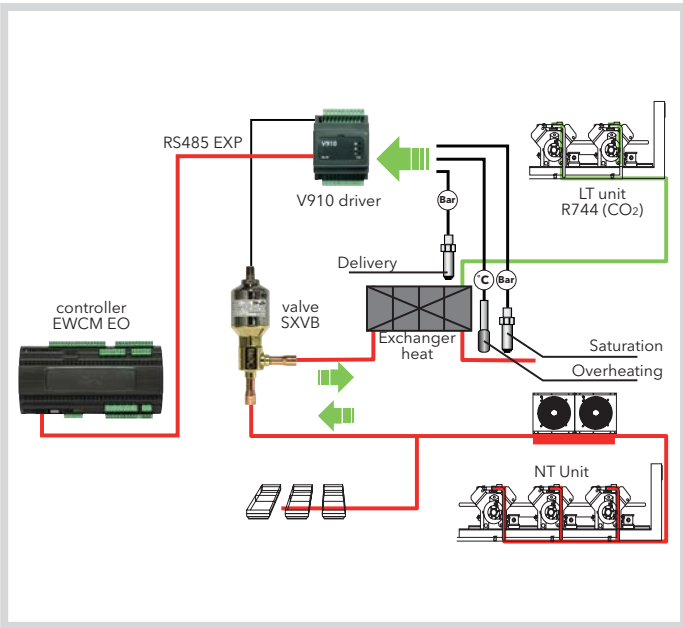


Codes	Description	Details
EVD4A31BSH100	V910 EEVD step valve 24V~ RS485	EEV driver module with dual PID controller
SKP1000000000	SKP10 - Configuration keyboard	Keyboard for configuration
DMI100x002000*	Device Manager Interface	

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

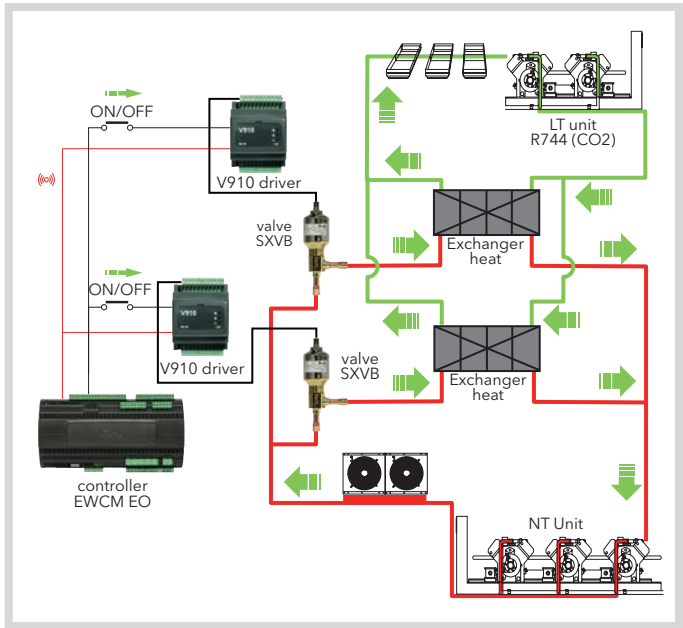
Applications

The V910 driver for the control of motorised valves is designed for the optimised control of the heat exchanger in CO₂ sub-critical cascade systems. Thanks to its flexibility it also finds application in the control of hot gas bypass systems, compressor delivery temperatures / pressure limitation and liquid sub-cooling.



Solution integrated with EWCM 8/9000 EO

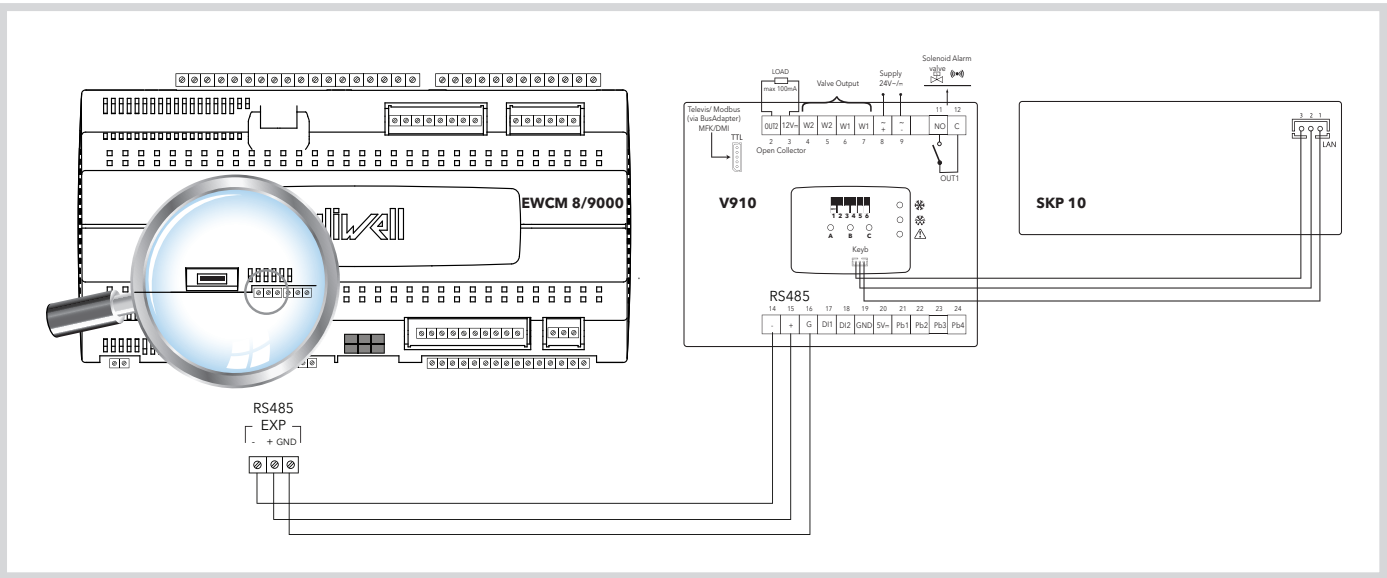
The high-precision PID control of the V910 module is integrated with the EWCM 8/9000 EO series controllers through the serial port dedicated to share real-time configuration and the heat exchanger control status, also through the Televis supervision system.



Solution for dual heat exchanger

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

Wiring diagram



TelevisGo

Monitoring and maintenance systems via web



Codes	Description	Applications
TGOAXE101E00K	KIT TelevisGo 10*	up to 10 controllers
TGOAXE301E00K	KIT TelevisGo 30*	up to 30 controllers
TGOAXE601E00K	KIT TelevisGo 60*	up to 60 controllers
TGOAXE2H1E00K	KIT TelevisGo 224*	up to 224 controllers

*contains No.1 SerialAdapter + 1.5m serial cable

Codes	Description	Applications
TGOAXE101ER0K	KIT TelevisGo 10*	up to 10 controllers
TGOAXE301ER0K	KIT TelevisGo 30*	up to 30 controllers
TGOAXE601ER0K	KIT TelevisGo 60*	up to 60 controllers

LE versions do not include the Algorithms function

*contains No.1 SerialAdapter + 1.5m serial cable

Applications

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

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 standard peripherals available on the market.

TelevisGo is the monitoring system recommended for systems with 30 or more controllers, up to a maximum of 224.



Data recording and alarm management

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



Energy reports

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



Graphic display of the system

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



Web connectivity

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



Activity automation

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



Algorithms and Expandability with IEC 61131*

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

*functions not available in LE versions

TelevisGo

Monitoring and maintenance systems via web



Specifications

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

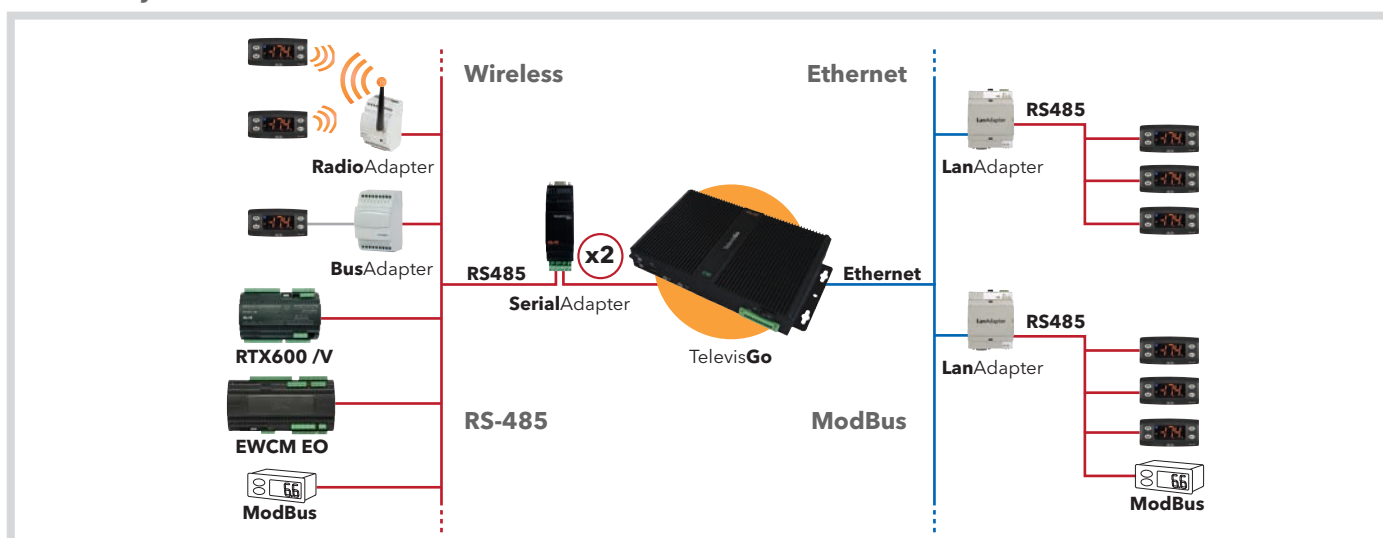
For chains and system integrators

- solution can be scaled to suit the size of the installation
- instruments for off line configuration, plant cloning and configuration modification in series
- compatibility with third-party Modbus devices: 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
 - execution of commands / modification of controller parameters in remote mode
 - SOCKS protocol integrated for routing of TCP and UDP communications

Technical Data

TelevisGo 10 / 30 / 60 / 224	
User interface:	from web browser
Browsers supported:	• Internet Explorer 7 or later • Mozilla Firefox 3.5 or later • Google Chrome 16.0.x or later
User language interfaces pre-loaded:	IT - EN - FR - DE - ES - PT - PL - NL - RU - CN
Operating System:	MS Windows XP Embedded
Power supply:	12V= 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 SerialAdapter) 1 Ethernet port (LANRJ45) VGA monitor connection PS2 keyboard connector

Connectivity



TelevisIn / TelevisOut

Data acquisition modules and actuators



Codes	Description	Power supply
TAMID152RS700	TelevisIn	100...240V~
TAMOD602RS700	TelevisOut	100...240V~

Applications

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

Common features

Compatible with third-party and ModBus systems

Up to 8 configurations for fast installation

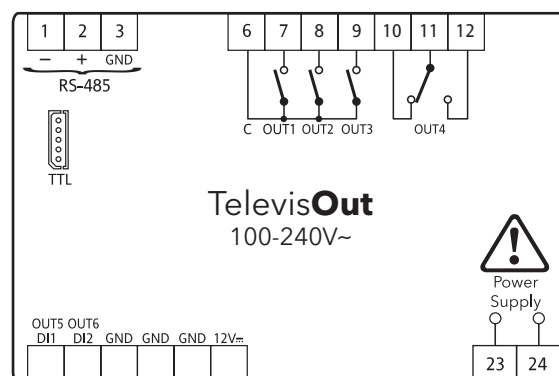
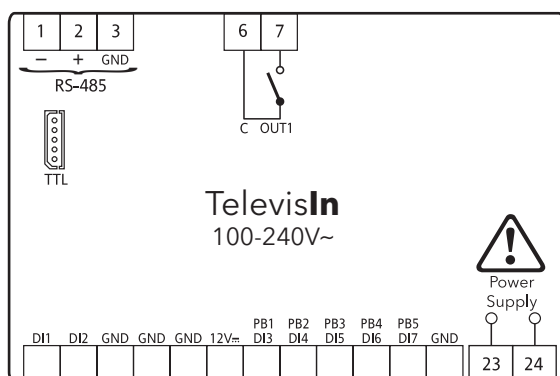
Two models to cover all applications

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:	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C • Pt1000 probe: -55.0...400.0 °C • Vin probe: 0-1V, 0-5V and 0-10V • Ain probe: 0...20mA and 4...20mA	• NTC probe: -50.0...110.0 °C • PTC probe: -55.0...140.0 °C • Pt1000 probe: -55.0...400.0 °C • Vin probe: 0-1V, 0-5V and 0-10V • Ain probe: 0...20V and 4...20mA
Analogue inputs:	3 NTC/PTC/Pt1000/DI inputs +1 V (0-1V / 0-5V / 0-10V) input + 1 I (0...20mA / 4...20mA) input	-
Digital inputs:	2 digital inputs (DI1 / DI2)	2 clean contact digital inputs (DI1 / DI2) also configurable as analogue outputs with no dangerous voltage
Digital outputs:	1 SPST 2A 250V~	2 (SELV) Open Collector: PWM 3 SPST 2A 250V~ 1 SPDT 2A 250V~
Connectivity:	• 1 RS-485 for connection to TelevisSystem monitoring and systems based on ModBus protocol • 1 TTL to connect to Eliwell Unicard USB, Copycard and DMI interface for DeviceManager	• 1 RS-485 for connection to TelevisSystem monitoring and systems based on ModBus protocol • 1 TTL to connect to Eliwell Unicard USB, Copycard and DMI interface for DeviceManager
Connectors:	Removable screw terminals	Removable screw terminals
Applications:	AP1 =Temperature; AP2 =Analogue Inputs; AP3 =Digital Inputs; AP4 =Dew Point; AP5...8 =Free	AP1 =Alarm signalling; AP2...8 =Free
Power consumption:	5W	5W
Power supply:	SMPS 100...240V~ ±10% 50/60Hz	SMPS 100...240V~ ±10% 50/60Hz

Wiring diagrams



LKD

Detection and indication of refrigerant leaks



Codes	Description	Power supply
LKD41CO2XR400	LKD 110 CO ₂	12/24V
LKD41xxxxR400	LKD 100	12/24V
LKD66CO2XR400	LKD 210 CO ₂	12/24V
LKD66xxxxR400	LKD 200	12/24V
LKDSG00000000	LKD Splash Guard	-

xxxx = R134 / R404 / NH3X / R290 / R507 / R600
according to the type of compatible refrigerant.

Applications

The state-of-the-art **LKD** series gas sensors can detect a wide range of gases and refrigerants according to the model: R134a, R404a, NH3, R290, R507a, R600a, CO₂. The gas sensors of LKD series can be used alone to control a buzzer, siren, etc., or integrated with Eliwell or third party remote management systems, thanks to a RS485 ModBus on board.

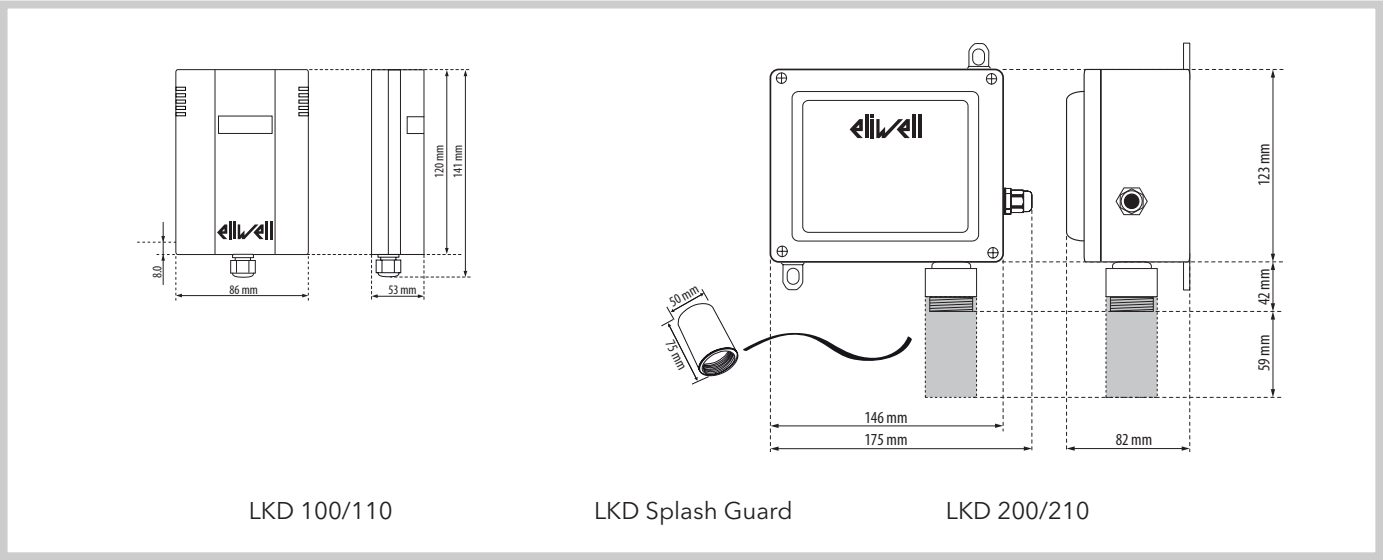
The main applications are: LT or NT cold rooms, refrigerated cabinets, compressor racks.

Common features

Compatible with Televis and third-party systems.	Suitable for refrigerants: R134a, R404a, NH3, R290, R507a, R600a, CO ₂
Available versions SC (semiconductor) and IR (infrared)	

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

Dimensions



Memory 1000

Temperature recording and printing



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

* models with printer

Applications

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

Common features

Powerful and easy to use thanks to:

- 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

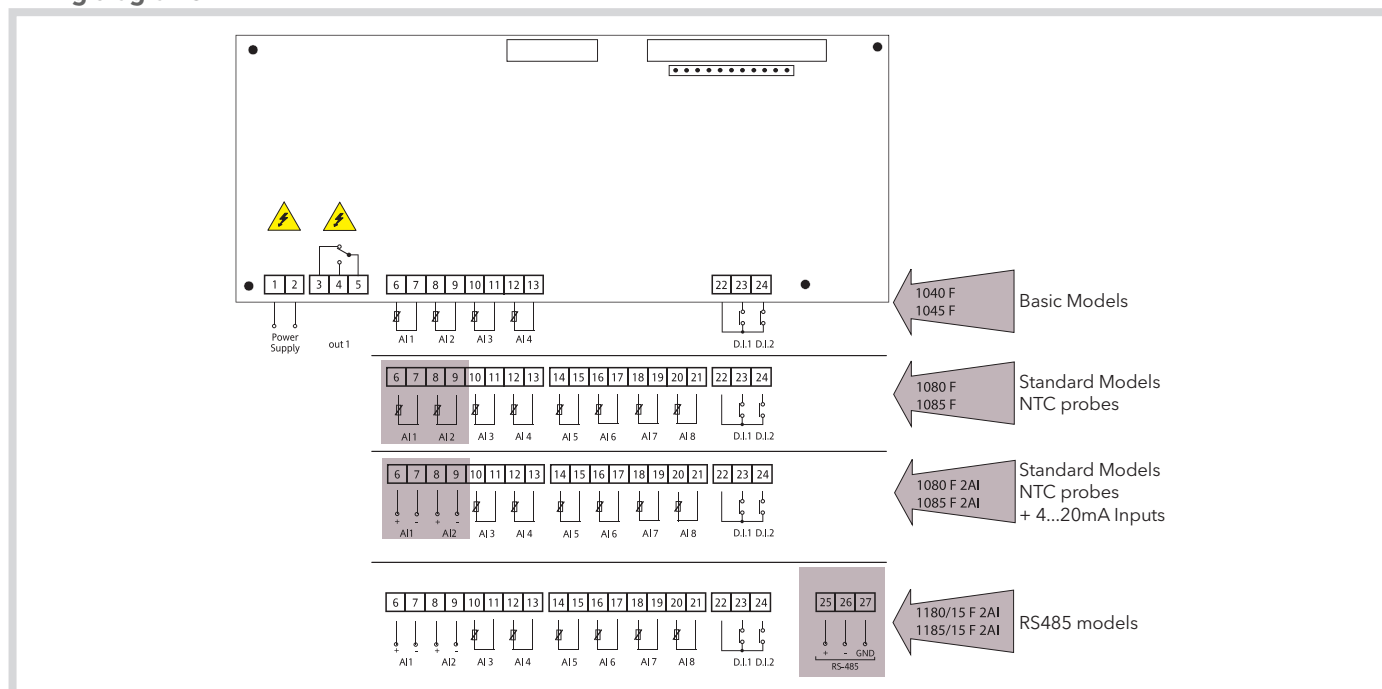
Technical data

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

Accessories

Codes	Description
RC444444	Thermal paper roll

Wiring diagrams



SerialAdapter - LanAdapter Ethernet - LanAdapter WiFi

Connectivity modules for monitoring systems



Codes	Description
SAT1AMM100000	SerialAdapter 232
LA0ET00X700	LanAdapter Ethernet
LA0WF00X700	LanAdapter WiFi

Applications

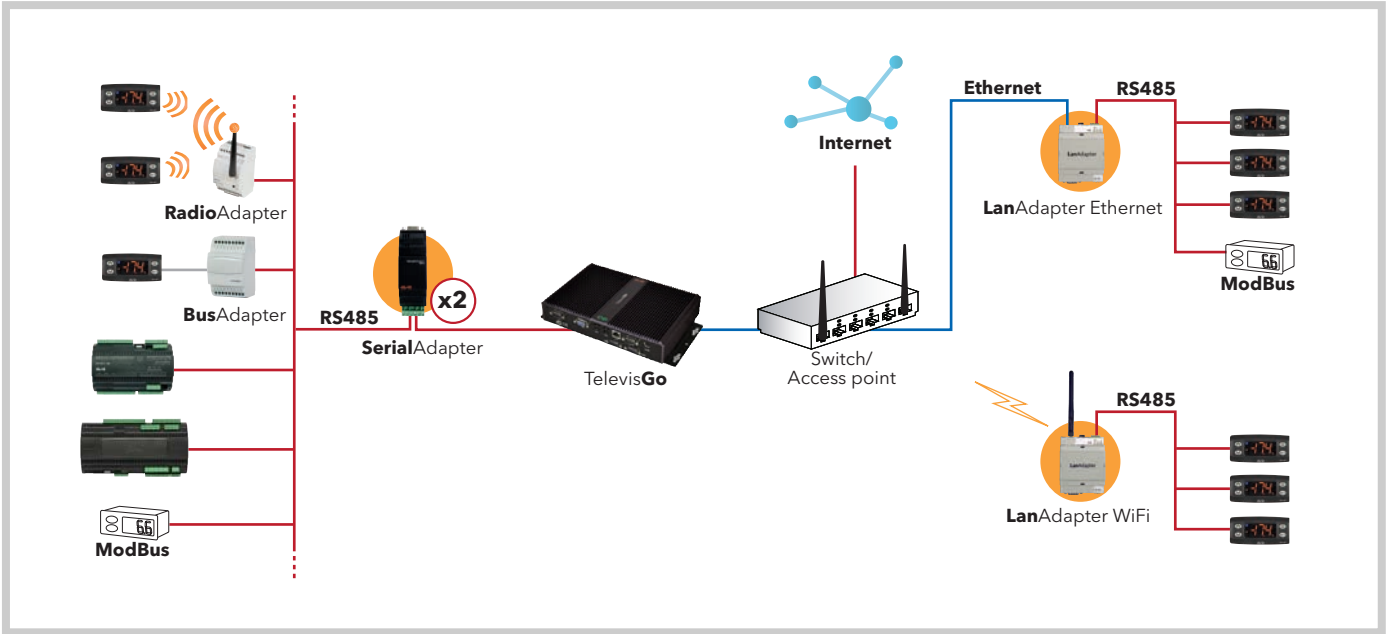
SerialAdapter is a galvanically isolated RS-232/RS-485 adapter to be used on networks with TelevisGo. **LanAdapter** is an Ethernet/RS-485 (or TTL) interface module enabling communication between a LAN and a network of instruments compatible with the Televis protocol. In this way, the LAN network monitoring system can manage data, alarms and connected instrument network functions. The **LanAdapter** can be configured via web pages accessible from any PC belonging to the LAN the **LanAdapter** is connected to.

Specifications

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	LanAdapter Ethernet	LanAdapter WiFi
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:	12V= through TelevisGo serial port	100-240V~ ±10% 50/60Hz	100-240V~ ±10% 50/60Hz
Power consumption:	-	4W max	4W max
Insulation class:	-	II	II
Ambient operating temperature:	-5...+55°C	0...+55 °C	0...+55 °C
Storage ambient temperature:	-30...+75°C	-20...+85 °C	-20...+85 °C
Ambient 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 mm² (one connector per terminal).	screw terminal to connect electric cables with a section of max. 2.5 mm² (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 mm² (one wire per terminal). Antenna (external)
Connectivity:	RS-485 port for connection to TelevisSystem	- RS-485 port for connection to TelevisSystem - TTL port for connection to instruments - LAN 10/100 Mbps	- RS-485 port for connection to TelevisSystem - TTL port for connection to instruments - Standard: IEEE 802.11b - Frequency band: ISM 2,400 GHz...2,485 GHz (<100mW e.i.r.p.) - Selection of channel: manual/automatic

Connectivity



Wireless connectivity modules



x = based on setting of ModBus RTU serial:

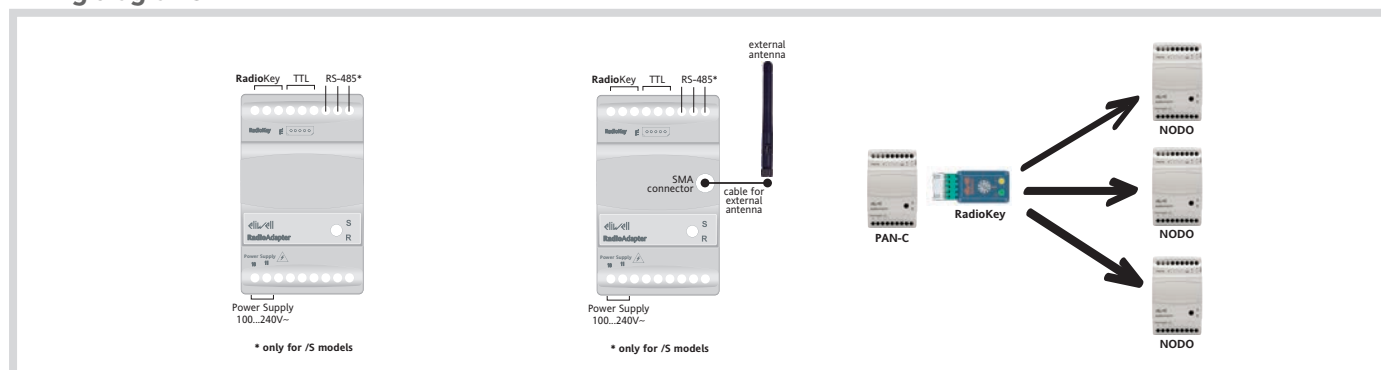
0: 9600, 8, N, 1 - **1:** 9600, 8, O, 1 - **2:** 9600, 8, E, 1 - **3:** 19200, 8, N, 1
4: 19200, 8, O, 1 - **5:** 19200, 8, E, 1

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.

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

Wiring diagrams



BusAdapter 130 - 150

RS-485 opto isolator connectivity modules



Codes	Description	Details
BA11250N3700	BusAdapter 130	1.5 m cable
BA10000R3700	BusAdapter 150	1.5 m cable

Applications

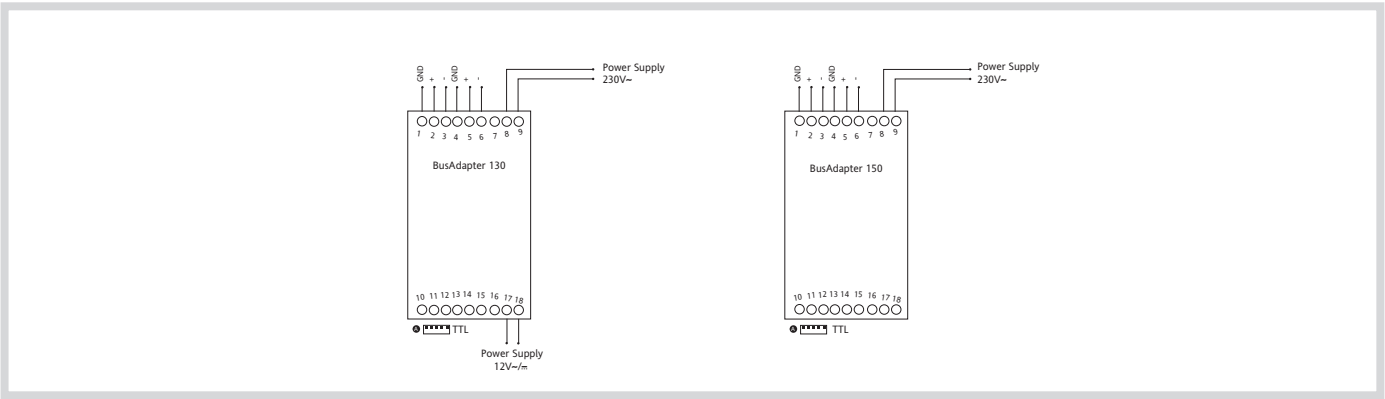
BusAdapter 130 and 150 is a family of devices used to connect Eliwell controllers to wired supervision and monitoring networks in RS-485 mode.

Specifications

130 models have an auxiliary 12V (5 VA) output to power the instrument.
150 models are equipped with reinforced electric insulation

General technical specifications	BusAdapter 130	BusAdapter 150
Casing:	3 DIN modules	3 DIN modules
Mounting:	on DIN Omega bar support	on DIN Omega bar support
Power supply:	230V~ / 115V~ ±10% 50/60Hz	230V~ / 115V~ ±10% 50/60Hz
Power consumption:	6W	1.5W
Insulation class:	II	II
Ambient operating temperature:	-5...+55 °C	-5...+60 °C
Storage ambient temperature:	-30...+75 °C	-30...+75 °C
Ambient humidity operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Terminals:	screw terminal to connect electric cables of 2.5 mm ² maximum cross-section (one wire per terminal in the case of power connections)	screw terminal to connect electric cables of 2.5 mm ² maximum cross-section (one wire per terminal in the case of power connections)
Connectivity:	• double RS-485 port for connection to TelevisSystem • TTL port for connection to instruments	• double RS-485 port for connection to TelevisSystem • TTL port for connection to instruments
Baud rate:	2400...9600 Baud	2400...9600 Baud
Auxiliary output:	12V~ / C ±10% 50/60Hz	/

Wiring diagrams



Modem GSM/GPRS

Modems



Codes

SAMGPRS35AL00

Description

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

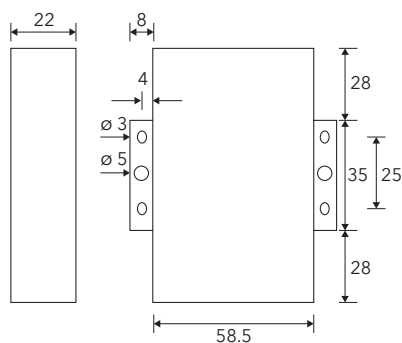
Applications

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

Technical Data

	Modem GSM/GPRS
Case:	Metal
Dimensions:	91x58.5x22 mm (BxHxD)
Weight:	195g
Frequency bands:	EGSM900/GSM1800MHz, GSM850/900/1800
GSM standard:	GSM phase 2/2+
GPRS standard:	class 10 - 85.6Kbps
Transmission power:	GSM850/900: <33dBm; GSM1800: <30dBm
Reception sensitivity:	<-107dBm
Connections:	• DB9 port RS-232 serial port, with 15KV ESD protection • SMA 50 Ohm antenna connection, female connector • connector powering 3-pole jack with protection for overvoltages and inverted polarity • SIM/USIM 3V/1.8V slot with 15KV ESD protection
Power supply:	5...35V $\overline{\text{=}}$ 12V
Power consumption:	<200mA (12V)
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



Unit of Measure: mm

ELECTROMECHANICAL ACCESSORIES AND COMPONENTS

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

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

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



DeviceManager

Controller configuration software



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

Applications

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

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

Specifications

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

Minimum system requirements

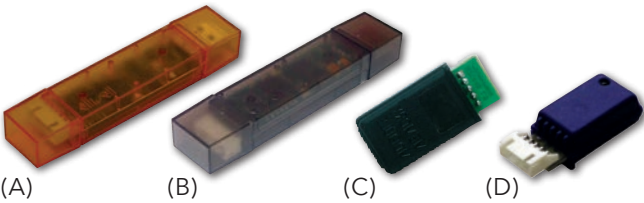
Operating system:	• Windows XP Pro SP2, Italian and English. • Windows XP Home SP2, Italian and English. • Windows 2000 Professional SP4, Italian and English. • Windows 7 Premium, Windows 7 Professional, Windows 7 Ultimate, versions 32bit, Italian-English
Software components required besides operating system:	• .NET Framework 2.0
Minimum hardware:	• graphics resolution 1024x768 • 700MHz CPU • 256MB RAM • HD 1GB • Mouse or equivalent navigation system
Space required on disk:	Approx. 500 MB for normal installation (2 languages, 50 models)

Accessories

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

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

Memory stick for fast configuration and updating of controllers



Codes	Description
CCA0BHT00UU00	(A) UNICARD USB/TTL
CCA0BUI02N000	(B) USB Copy Card
COLV000016200	Extension lead for USB Copy Card
CC0S00A00M000	(C) Standard Copy Card
MKF100T000000	(D) Multi Function Key 100

Applications

The new USB/TTL Unicard is a memory device for rapid parameter configuration/duplication, specifically designed for controllers in the IDPlus family. By downloading the **DeviceManager** software from the www.eliwell.com website, maps for instruments in the ID and IDPlus families can be read and written on the Unicard device without having to use other interfaces/licences.

Copy Card and USB Copy Card are memory devices for rapid Eliwell controller parameter configuration/duplication. Multi Function Key is used with **DeviceManager** to transfer maps, parameters and controller firmware 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 firmware/applications
	Downloading parameter values from the instrument
	Downloading alarm log from the instrument

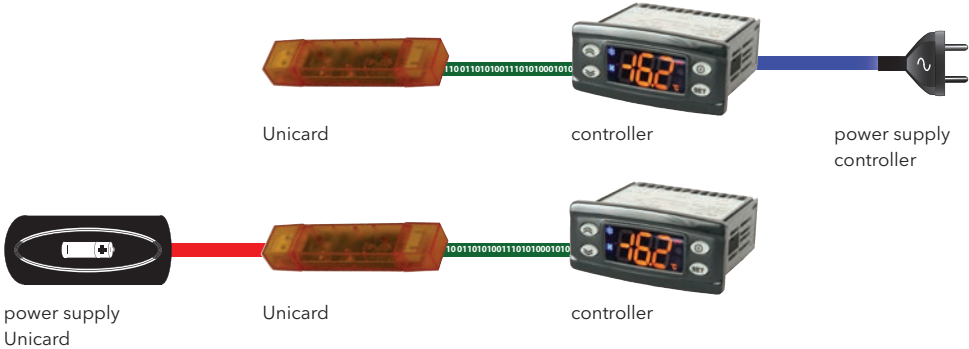
Use	Copy Card	Multi Function key	Unicard	USB Copy Card
IDPlus series	•	-	•	-
EW - EWPlus (EO LVD) series	•	-	•	-
IC series	•	-	-	-
ID series	•	-	-	-
EM300 Series	•	-	-	-
DR 4020 - DR4022	•	-	•	-
EW4820 - EW4822	•	-	-	-
EW 7220 - EW 7222	•	-	-	-
EWTS 950 LX - EWTS 990 LX	•	-	-	-
EWRC 300 - EWRC 500 series	•	-	•	-
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 probes

NTC semi-conductor temperature probes



NTC co-moulded with double insulation

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

NTC co-moulded with double insulated cable

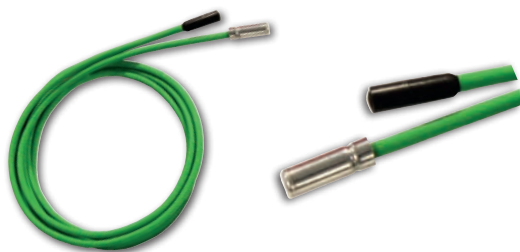
Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN8T6H0005	NTC co-moulded with double insulated cable	Thermoplastic rubber	5x20	Thermoplastic rubber shielded	IP68	2000V	-50...+110°C	10.0m
SN8T6H1505	NTC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

NTC special versions

Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN8DEB21502C0	NTC clamp-on	Thermoplastic rubber	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	1.5m
SN8DEB23002C0	NTC clamp-on	Thermoplastic rubber	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	3.0m
SN8DNB11502A0	NTC clamp-on probe IP67 Fast response	Copper	4x16	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	1500V	-50...+110°C	1.5m
SN8DAC11502AV	NTC probe Fast response	AISI 304	4x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000V	-50...+110°C	1.5m
SN8DAC13002AV	NTC probe Fast response	AISI 304	4x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP67	2000V	-50...+110°C	3.0m
SN8DEP15002C0	NTC Probe product simulation	Thermoplastic rubber	Ø 110	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110°C	5.0m

Pt100 - Pt1000 probes

Pt100 - Pt1000 thermo-resistive temperature probes



Pt100

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

Pt1000

Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN9S0A2500	Pt1000 with two wires	AISI 304	6x40	Silicone	IP67	2000V	-50...+200 °C	2.5m
SN9DAE11502C6	Pt1000 co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110 °C	1.5m
SN9DAE13002C6	Pt1000 co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110 °C	3.0m
SN9DED11502C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber -	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110 °C	1.5m
SN9DED13002C6	Pt1000 co-moulded with double insulated cable	Thermoplastic rubber -	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000V	-50...+110 °C	3.0m

PTC - TC probes

PTC semi-conductor temperature probes, TC thermocouples



Applications

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

Common features

Accuracy of temperature measurement: +/- 1%

PTC

Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN7T6A1502	PTC co-moulded with double insulated cable	AISI 304	6x40	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2.000	-50...+110°C	1.5m
SN7DAE11502C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5m
SN7DAE13002C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0m
SN7DED11502C0	PTC co-moulded with double insulated cable	Thermoplastic rubber -	5x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	1.5m
SN7DED13002C0	PTC co-moulded with double insulated cable	AISI 304	6x20	Thermoplastic rubber (Outer) Polypropylene (Inner)	IP68	2000	-50...+110°C	3.0m
SN6070000	PTC for ambient temperature	Plastic	15x70	-	IP54	-	-40...+120°C	-
SN603008	PTC for piercing, with PVC grip	AISI 316	3x150	Silicone	IP65	-	-20...+110°C	3.0m

TCK

Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN400000	Tck	AISI 304	6x100	TTS	IP45	-	0...400°C	3.0m
SN400004	Tck	Inconel 600	6x200	TTS	IP45	-	-40...1150°C	1.0m

TCJ

Codes	Description	Capsule Material	Dimensions of capsule mm (ØxL)	Cable type	Level of protection	Dielectric strength	Operating range	Length probe
SN300000	Tcj	AISI 316	6x100	Vetrotex	IP44	-	0...350°C	3.0m
SN300008	Tcj	AISI 316	6x100	Vetrotex	IP44	-	0...350 °C	1.5m
SN300042	Tcj	AISI 304	6x100	TTS	IP45	-	0...350 °C	3.0m

EWPA 007 - 030 - 050

Pressure transducers



Applications

EWPA pressure transducers are sensors with a current 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...32V	8...32V	8...32V	8...32V
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	2m cable, wired 2m cable with PACKARD connector mPm connector	2 m cable, wired 2m 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%) < 5ms	(0...99%) < 5ms	(0...99%) < 5ms	(0...99%) < 5ms
Material in contact with the environment	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Enclosure rating	Packard: IP67 Cable: IP54	Packard: IP67 Cable: IP54	Packard: IP67 Cable: IP54	Packard: IP67 Cable: IP54

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

EWPA 010 - 030 - 050

Ratiometric pressure transducers



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

Applications

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

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

EWHS 284 - 304 - 314

Humidity probes

EWHS284



EWHS304



EWHS314



Applications

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

Common features

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

Technical data	EWHS284	EWHS304	EWHS314
Enclosure rating	IP54	IP65	IP65
Installation	Use the clip supplied with the probe	via 2 external slots	via 2 external slots
Electrical connections	PVC two core cable	Screw terminals	Screw terminals
Dimensions	103x25mm	80x80x52mm	80x80x52mm
Power supply	9...28V _m	9...30V _m	15...40V _m or 12...28V ₋
Power consumption	20mA max	20mA max	<50mA max
Ambient temperature	-10...60°C	-40...60°C	-40...60 °C (-40...140 °F)
Humidity sensor	resistive	HygroMer* IN-1	HygroMer* IN-1
Humidity measurement range	15...90% RH	0...100% RH	0...100% RH
Output current of the humidity measurement	4 (0%)...20mA (100%)	4 (0%)...20mA (100%)	4 (0%)...20mA (100%)
Response time to constant conditions (63%) to 23°C	60 sec	typically 10 sec	typically 10 sec
Recovery time from saturation	360 sec	depending on air flow rate	depending on air flow rate
Temperature for storage	-20...70°C	-50...70°C	-50...70°C
Measurement accuracy of moisture (at 23°C)	±5% RH (in the range 15...90% RH)	±2% RH (in the range 10...95% RH) ±3% RH (for values <10% or >95% RH)	±2% RH
Number of wires per connection	2 (blue: power; brown: output)	2	4
Air filter	metal wire mesh	polyethylene	polyethylene
Temperature sensor	-	-	Pt100B
Temperature range	-	-	-40...60°C (-40...140°F)
Output current of the temperature measurement	-	-	4 (-30 °C)...20mA (70 °C)
Accuracy of temperature measurement (at 0 °C and 23 °C)	-	-	±0.3K
Compensation for temperature	-	with NTC	with Pt100B
Connection cable	1m or 3m	-	-
Maximum load	250 Ohm	0 Ohm at 6V _m and 5V _~ 500Ohm at 15V _m and 12V _~	0 Ohm at 6V _m and 5V _~ 500Ohm at 15V _m and 12V _~
Code	EWHS284 - 1m cable: SN5PPN116I3M0 EWHS284-3 3m cable: SN5PPN131I3M0	EWHS304: SN5NPM1A6I4M0	EWHS314: SN0NPM1A6I4M0

Drip protection - Plexiglass protection

Protections for 32x74 controllers



Applications

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

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

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

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

EW BOX - INOX BOX

EW BOX - INOX BOX



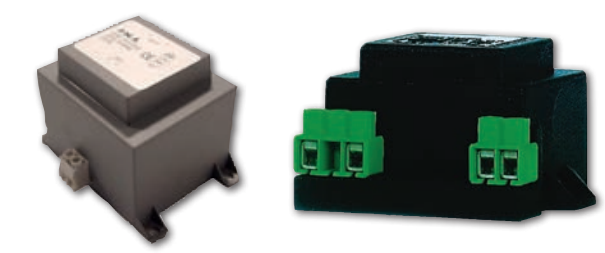
Applications

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

Code	Description
SM000000	EW box without front panel
SM000005	Front panel without holes in ABS for EW box
SM000010	Front panel in ABS for EW vertical box with one hole for standard instrument 32x74 and two holes for switch
SM000013	Front panel in ABS for EW horizontal box with one hole for standard instrument 32x74 and one hole for switch
SM000020	Front panel in ABS for EW vertical box with two holes for standard instrument 32x74 and two holes for switch
SM000030	Front panel in ABS for EW horizontal box with two holes for standard instrument 32x74 and two holes for switch
SM111111	INOX Box with one hole for standard instrument 32x74
SM111112	INOX Box with two holes for standard instruments 32x74

TF Transformers

Transformers



Applications

TF transformers are resin-coated in plastic containers, equipped with fixing tabs and screw terminals for wires ≤ 2.5mm². Models with different power supply voltages are available.

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

OEM PRODUCTS

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

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

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

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

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



nEW series

Solutions for refrigerated counters with compressor on board



- Easy installation with quick connectors
- Front panel and connections protected from water

Applications

The **nEW** series is the standard Eliwell solution for large production volumes. Thanks to the flexibility of the platform and the library of available functions, **nEW** is the best solution for manufacturers who are looking for an innovative solution with the advantages of electronic control and at the same time easy to install and use.

Common features

Direct control of loads up to 2 HP	Use of faston/screw connectors for quick, versatile hookup
Universal power supply switching from 100 to 240Vac 50/60Hz in a single model	Copy cards which can be used for quick programming

Model	Application	Notes
nEW 961	Static units	2Hp power relay for compressor piloting
nEW 971	Ventilated units	2Hp relay, 1 defrost output

EWPlus series

Solutions with icon display



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

Applications

The **EWPlus** series includes flexible, modern design controllers for plug-in refrigerated counters. Thanks to platform versatility and a library of available functions, Eliwell is the best answer for manufacturers seeking custom solutions for energy saving requirements and simplification of production processes.

Common features

Direct load management up to 2Hp and power supply of 230V~ or 115V~	Unicard USB for customizing even small lots
Use of removable/faston/screw connectors for quick, versatile hookup	Industrial packaging 60 pieces

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

EWPlus EO series

High energy saving solutions



- Advanced control algorithms contribute to **energy saving up to 39%*** with no modification of counter structure needed
- Adaptive Energy Saving functions depending on the conditions of use of the cooler
- Compressor **voltage protection** assured, increasing duration
- The product is **compatible with the new ecological refrigerants R290, R600**, in compliance with IEC 60079-15-2005
- Optimized temperature management when switching from night to day mode
- No supplementary sensors needed thanks to the **virtual door switch**
- 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, easily applicable also if replacing prior series controllers.

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

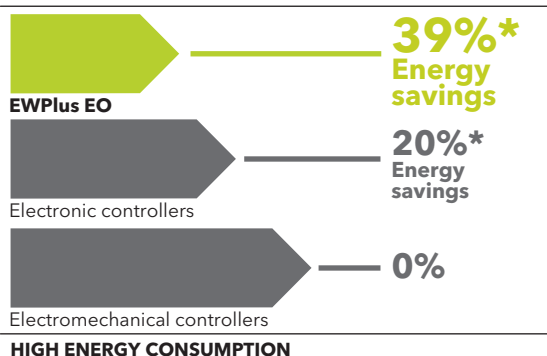
Common features

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

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

Model	Application	Notes
EWPlus 961 EO	Static units	2Hp power relay
EWPlus 971 EO	Ventilated units	2Hp relays, 1 configurable output (defrost/fans/lights/alarm/stand-by)
EWPlus 974 EO	Ventilated units	2Hp relays, 2 configurable outputs (defrost/fans/lights/alarm/stand-by)

LOW ENERGY CONSUMPTION



Longer-lasting components

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



EWPlus EO

EWPlus 961 - 971 EO Dispenser

Solutions for refrigerated dispensers / beer taps



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

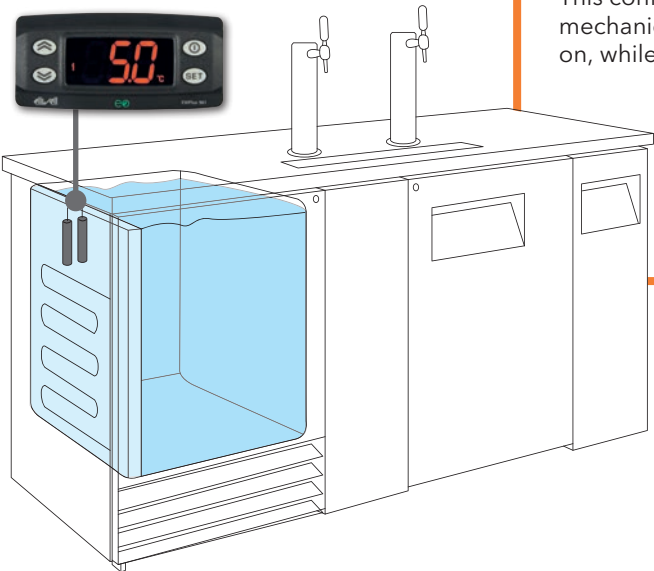
Applications

EWPlus 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 parameterized from the keyboard to adapt to the various application configurations easily.

Common features

Configurable inputs for temperature and single or double ice level sensor	Unicard USB for customizing even small lots
230V~ power supply	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, easily applicable also if replacing prior series controllers.

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

Common features

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

12V power supply

Unicard USB for customizing even small lots

Model	Application	Notes
EWPlus 978	Combined counters Mono-blocks	Single or double compressor Single or double evaporator



Application examples

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

- delayed ignition
- ignition based on differentiated temperature threshold and delay

In this case, the controller can manage the set sequence or rotation between two compressors.

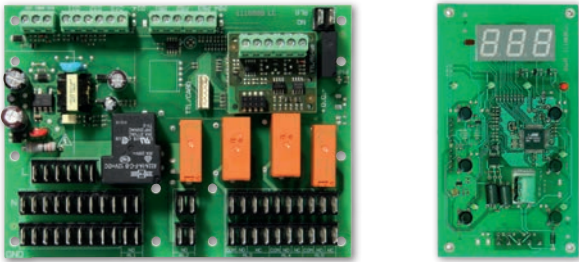
It can also manage double defrosting:

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

EWPlus 978

IWP 750

Solutions for mono-blocks



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

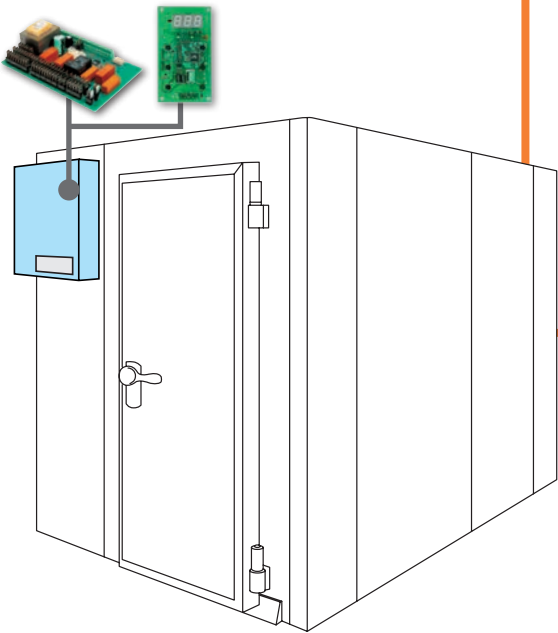
Applications

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

Common features

Power boards and bare keyboard, for panel mounting	Compressor control up to 2Hp
3 temperature probes and 3 configurable digital inputs	SMPS 100...240V~ power supply
5 configurable relay outputs	

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



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Environmental sustainability

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

Easy to use

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

IWP 750 - IWK

IWC 700 series

Controllers for professional applications / catering



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

Applications

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

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

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

Common features

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

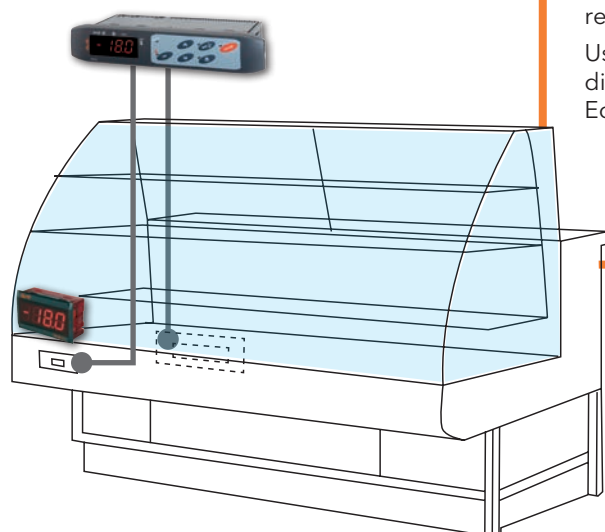
Model	Application	Notes
IWC 720	ventilated refrigeration unit (medium or low temperature)	2 configurable relays
IWC 730	ventilated refrigeration unit (medium or low temperature)	3 configurable relays
IWC 730/E TWIN	catering applications	3 configurable relays can be connected to Echo display
IWC 740	ventilated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

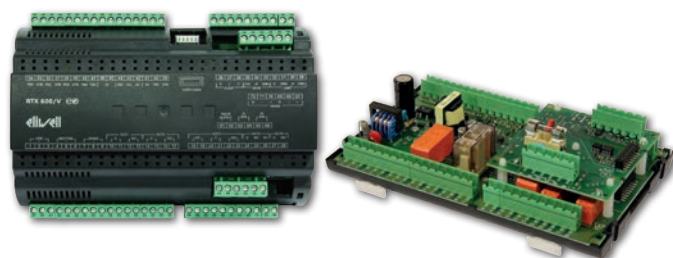
Using the **IWC 730/E TWIN** model, temperatures can also be displayed on the front of the refrigeration counter, thanks to the remote Echo display.



IWC 700 series

RTX600/V - RTD600/V series

Controllers for supermarket cabinets



- Specific solutions for high efficiency remote cabinets
- Integrated control of all refrigeration counter functions
- Energy savings with electronic valve control
- Plug-n-play LINK² synchronisation for island and remote cabinets

Applications

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

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

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

Specifications

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

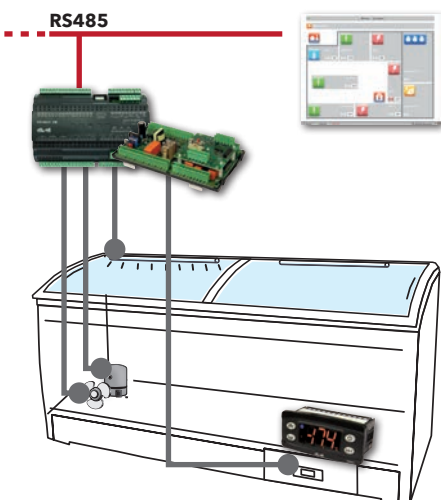
3 temperature probes and 3 configurable digital inputs

6 configurable relay outputs

AC and DC pulse electronic valve control

SMPS 100...240V~ power supply

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



Application examples

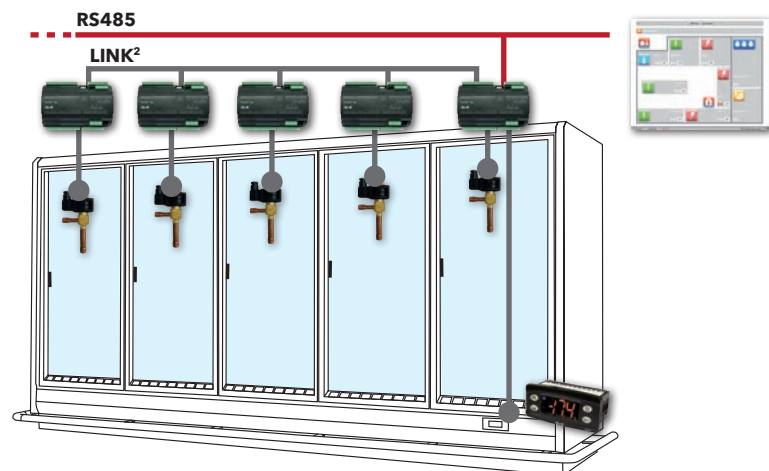
RTX600/V and RTD600/V can be used for different applications.

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

In a **remote cabinet**, RTX600/V or RTD600/V can be used for high efficiency control of the electronic pulse expansion valve; several instruments connected via LINK² network for efficient synchronisation of defrosting and lights.

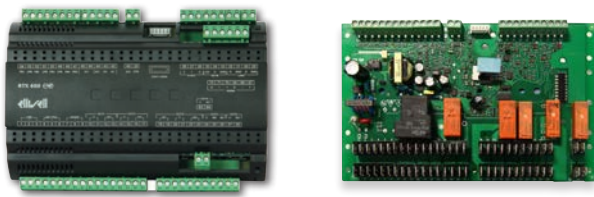
The system can be monitored via RS-485 network.

RTX600/V - RTD600/V



RTX600 - RTN600 series

Controllers for supermarket cabinets



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

Applications

Electronic controllers **RTX600** and **RTN600** have energy-saving functions for use in supermarkets and commercial food distribution and storage applications. RTX600 and RTN600 combine optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room set point modulation, with automatic identification of open/closed operational time bands.

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

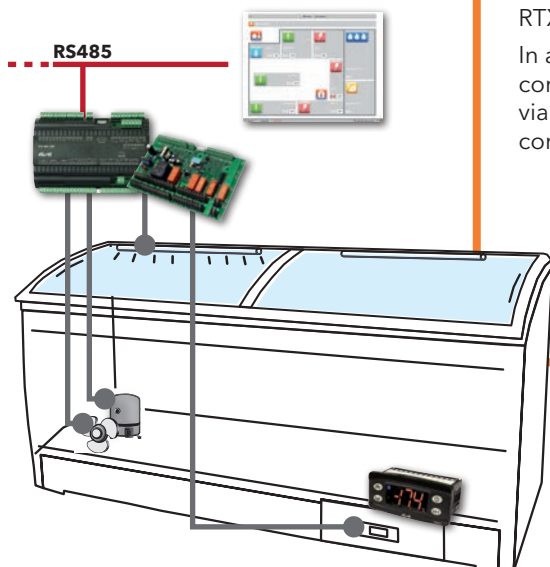
The remote **ECPlus** display can be used to view displayed data from up to 100m away, differentiating it from the data displayed on KDEPlus and KDWPlus terminals.

Specifications

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 100...240V~ power supply

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



Application examples

RTX600 and RTN600 can be used for different applications.

In a **plug-in cabinets**, 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 cabinets



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

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

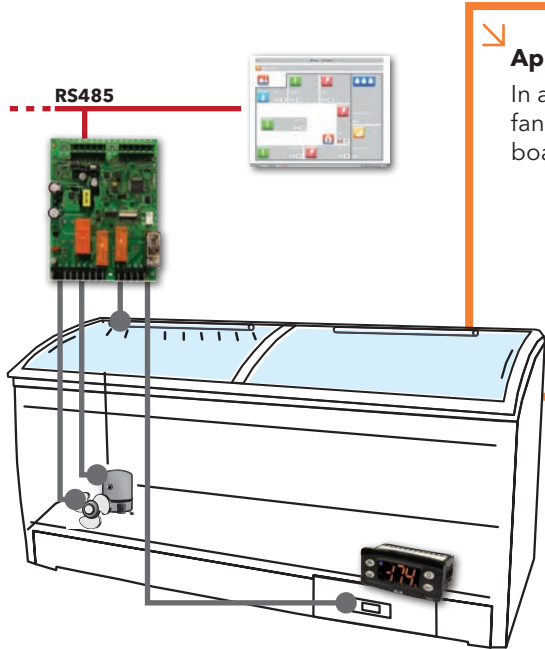
RTN400 for energy saving in supermarkets and in commercial food distribution and preservation applications. It combines optimised defrost cycle management, dewpoint-based heating and anti-condensation element modulation and cold room Set point modulation, with automatic identification of open/closed operational time bands.

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

Specifications

Power boards in compact bare box (121x92mm)	4 configurable output relays with direct control of loads up to 2HP
5 temperature probes and 1 configurable digital input	SMPS 100...240V~ power supply

Model	Application	Notes
RTN400	Supermarket counters	Bare board with fast power connections, faston type



Application examples

In a **plug-in cabinet**, 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

KD - ECPlus series user interfaces

User interfaces for RT family



- **ECPlus, KDEPlus, KDWPlus:** compatible with controllers in the RT series (RTX, RTD, RTN)
- **KDT:** keyboard with touch technology, compatible with controllers in the RT series (RTX, RTD, RTN) and IWP750
- **KDT:** customisable for OEM solutions

Applications

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

Each power board can be connected to a single KDWPlus keyboard and if required to an ECPlus module for remote display by means of the special connector.

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

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

Technical data

	KDT	KDEPlus	KDWPlus	ECPlus
Casing:	Polymethylmethacrylate (PMMA) front panel	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	PC+ABS UL94 V-0 resin casing, polycarbonate window, thermoplastic resin keys	Body and window in polycarbonate
Dimensions:	front panel 87x135mm, depth 1.5mm	front panel 74x32 mm, depth 30 mm	front panel 180x37 mm, depth 23mm	front panel 48x28.6 mm, depth 15mm
Mounting:	panel mounting, can be set for a distance of up to 100m, with 67x120mm drilling template	panel-mounting, with 71x29mm (+0.2/-0.1 mm) drilling template	panel mounting with 150x31mm (+0.2/-0.1mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display:	3 digits + sign, 8 coloured icons optional colour: amber/red/blue/white 6 capacitive touch keys	with decimal point° 3 digits + sign	with decimal point° 3 digits + sign	with decimal point° 3 digits + sign
Display range:		see power board	see power board	see power board
Connectivity:		• screw terminals for connection to power board • JST for connection to ECPlus display	• screw terminals for connection to power board • JST for connection to ECPlus display	• JST for connection to KDWPlus user terminal or KDEPlus
Power supply:		from power board	from power board	from power board
Power consumption:		-	-	-
Ambient operating temperature:		-5...+55°C	-5...+55°C	-5...+55°C
Ambient storage temperature:		-30...+85 °C	-30...+85 °C	-30...+85 °C
Ambient operation and storage humidity:		10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

* selectable by parameter

° selectable by parameter (from power board)

FREE Way

Programmable platform



Applications

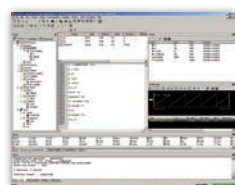
FREE Way: the new approach to programmability, giving customers the tools to find their own faster and more effective solutions.

FREE Way is the new range of programmable controllers which consists of the software Suite **FREE Studio**, of **FREE Smart**, **FREE Panel** and **FREE Evolution**.

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

FREE Studio

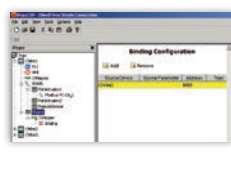
Programmable platform



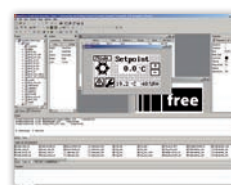
Application



Device



Connection



User Interface



Simulation

Applications

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

Each project can be made up of several programmes.

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

Each new programme can be chosen from the 5 programming languages, 2 text and 3 graphic:



Structured Text



Ladder



Sequential Function Chart



Functional Block Diagram



Instruction List



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

Application

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

Device

Component specifically for less experienced users, allowing them to manage parameters, download applications, run field tests, etc.

Connection

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

User Interface

Component for developing and personalizing the graphic interface of the user terminal

Simulation

Component for simulating the application on a PC.

FREE Smart

Programmable platform

It is the smallest programmable controller on the market, combining high performance and efficiency in very compact dimensions. In the 32x74 mm dual format for panel mounting and DIN rail mount version, Smart allows easy programming, significant savings in wiring time and reduction of the cabinets dimensions up to 50%. Thanks to the complete autonomy and configurability of all inputs and outputs, Smart is perfectly adaptable to any system.



FREE Smart features

- User interface with configurable keys.
- Available in three formats
 - **FREE Smart SMP*** 32x74mm
 - **FREE Smart SMD*** 4 Din with LED display
 - **FREE Smart SMC*** 4 Din with no display
- * Electrical connections compatible with existing Eliwell product platforms (e.g. Energy Flex); available in versions 100...240V~
- Can be connected to RS-485, Modbus RTU Slave
- Can be connected to standard Eliwell peripherals and user interfaces.

FREE Panel

Programmable platform

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



FREE Panel features

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

Programmable platform

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



FREE Evolution features

- Fully customizable graphic user interface
- Available in two formats
 - **FREE Evolution EVD** 8 Din with backlit LCD graphic display
 - **FREE Evolution EVC** 8 Din with no display
- High connectivity: integrates into 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



Temperature Probe Tables

Appendices

NTC probe table

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

NTC probe table - Extended range

Ambient temperature	Resistance (KOhm)		
(°C)	Minimum	Standard	Maximum
-40	321.654	333.562	345.877
-35	233.032	241.072	249.364
-30	170.611	176.082	181.710
-25	126.176	129.925	133.773
-20	94.221	96.807	99454
-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	33260
5	24.962	25.391	25.824
10	19.601	19.902	20.205
15	15.504	15.713	15.924
20	12.348	12.493	12.639
25	9.900	10.000	10.100
30	7.962	8.055	8.150
35	6.444	6.530	6.616
40	5.247	5.325	5.403
45	4.296	4.367	4.438
50	3.537	3.601	3.665
55	2.928	2.985	3.042
60	2.436	2.487	2.538
65	2.037	2.082	2.127
70	1.711	1.751	1.792
75	1.444	1.480	1.516
80	1.224	1.256	1.288
85	1.042	1.070	1.099
90	0.890	0.916	0.941
95	0.764	0.786	0.810
100	0.658	0.678	0.699
105	0.569	0.587	0.605
110	0.493	0.510	0.526
115	0.429	0.444	0.459
120	0.375	0.388	0.402
125	0.328	0.340	0.353
130	0.289	0.299	0.310
135	0.254	0.264	0.274
140	0.224	0.234	0.243
145	0.199	0.207	0.215
150	0.177	0.184	0.192

PTC probe table

Ambient temperature		Temperature coefficient	KTY82-121			
(°C)	(°F)	(%/K)	Resistance (Ohm)			Error - temp.
			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	111.67	240	190.47	450	264.18	660	332.79
-180	27.10	40	115.54	250	194.10	460	267.56	670	335.93
-170	31.34	50	119.40	260	197.71	470	270.93	680	339.06
-160	35.54	60	123.24	270	201.31	480	274.29	690	342.18
-150	39.72	70	127.08	280	204.90	490	277.64	700	345.28
-140	43.88	80	130.90	290	208.48	500	280.98	710	348.38
-130	48.00	90	134.71	300	212.05	510	284.30	720	351.46
-120	52.11	100	138.51	310	215.61	520	287.62	730	354.53
-110	56.19	110	142.29	320	219.15	530	290.92	740	357.59
-100	60.26	120	146.07	330	222.68	540	294.21	750	360.64
-90	64.30	130	149.83	340	226.21	550	297.49	760	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
-200°C	-7.890	-8.095	-	-	-	-	-	-	-	-
-100°C	-4.633	-5.037	-5.426	-5.801	-6.159	-6.500	-6.821	-7.123	-7.403	-7.659
0°C	0.000	-0.501	-0.995	-1.482	-1.961	-2.431	-2.893	-3.344	-3.786	-4.215
	10°C	20°C	30°C	40°C	50°C	60°C	70°C	80°C	90°C	100°C
0°C	0.000	0.507	1.019	1.537	2.059	2.585	3.116	3.650	4.187	4.726
100°C	5.269	5.814	6.360	6.909	7.459	8.010	8.562	9.115	9.669	10.224
200°C	10.779	11.334	11.889	12.445	13.000	13.555	14.110	14.665	15.219	15.773
300°C	16.327	16.881	17.434	17.986	18.538	19.090	19.642	20.194	20.745	21.297
400°C	21.848	22.400	22.952	23.504	24.059	24.610	25.164	25.720	26.276	26.834
500°C	27.393	27.953	28.516	29.080	29.647	30.216	30.788	31.362	31.939	32.519
600°C	33.102	33.689	34.279	34.873	35.470	36.071	36.675	37.284	37.896	38.512
700°C	39.132	39.755	40.382	41.012	41.645	42.281	42.919	43.559	44.203	44.848
800°C	45.494	46.141	46.786	47.431	48.074	48.715	49.353	49.989	50.622	51.251
900°C	51.877	52.500	53.119	53.735	54.347	54.956	55.561	56.164	56.763	57.360
1000°C	57.953	58.545	59.134	59.721	60.307	60.890	61.473	62.054	62.634	63.214
1100°C	63.792	64.370	64.948	65.525	66.102	66.679	67.255	67.831	68.406	68.980
1200°C	69.553	-	-	-	-	-	-	-	-	-

TCK probe table

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

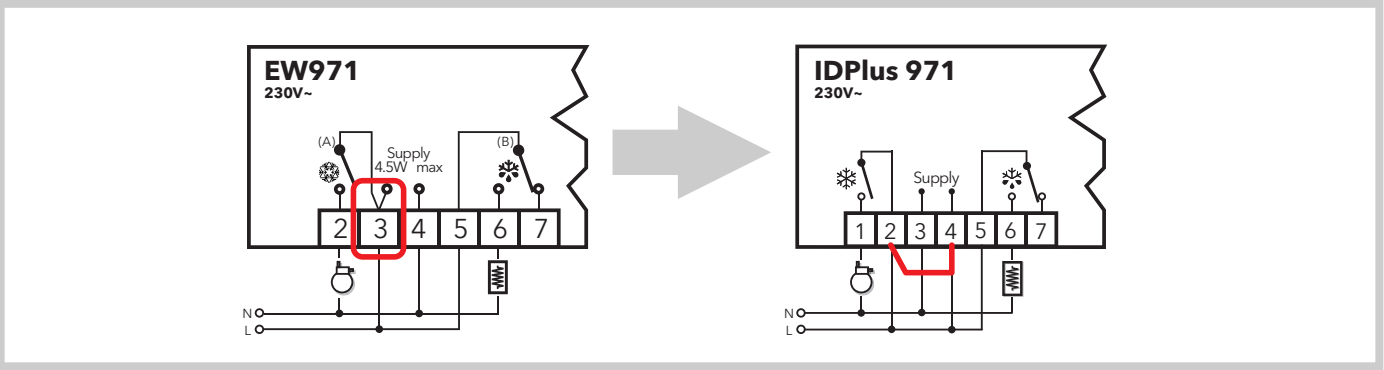
IDPlus vs EW and ID, ICPlus vs IC compatibility

Compatibility tables

IDPlus models	IC - ID	EWPC - EWTC - EWPX	EW - EWPlus*
IDPlus 902 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
IDPlus 961 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
IDPlus 971 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
IDPlus 974 Outputs: 2Hp + 8A + 5A	ID 974 ID 974 LX	EWPC 974 EWPX 174	EW 974 EWPlus 974
IDPlus 978 Outputs: 1.5Hp + 8A + 5A	ID 975LX ID 983 ID 985 ID 983LX (no C/K/S) ID 985LX (no C/K/S)	EWPX 174AR EWPX 174AX EWPX 185 EWPX 190	EWPlus 978

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

***NB** - Controllers in the series for OEM EW / EWPlus include a connection between power supply and loads that is not found in the IDPlus series. Thus a bridge is needed between controller load line and power supply, see example shown:



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



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