

Product Catalogue 2010/11

Electronic controls for refrigeration and automation



People



Products



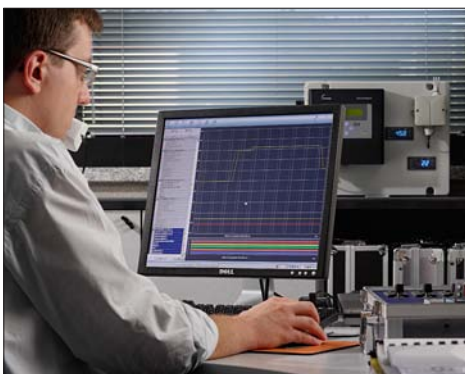
Performance

Refrigeration	Sect. A
Industrial refrigeration	Sect. B
Industrial processes	Sect. C
Electromechanical controllers	Sect. D
Systems	Sect. E
Accessories	Sect. F

High quality electronic controllers



An Invensys Controls Company



ELIWELL AND INVENSYS

Eliwell, a market leader in the refrigeration and air conditioning industry, is part of Invensys, a leading global provider of automation, control and rail transport technology solutions.

Eliwell has been developing and manufacturing controllers and control systems for refrigeration units in commercial and industrial applications since 1980; it also specialises in the production of air conditioning controllers, in collaboration with the major European manufacturers in this sector.

In addition to its high quality, highly reliable products in all applications, Eliwell is also renowned for the customer service it offers. Customised individual solutions and advice during the design and installation phase provide an indication of Eliwell's commitment to customer satisfaction.

ENVIRONMENTAL SUSTAINABILITY

For Eliwell, and for the entire Invensys group, environmental sustainability is not only a guideline in proposing safe and efficient solutions to the market, but also an incentive in research and development, ever more oriented to environmentally-friendly technologies.

Eliwell is committed to the sustainable use of resources throughout its manufacturing processes, and at all supplier premises.

Environmental sustainability translates into the development of products which are able to offer customers a high standard of energy savings and environmental sustainability at their own sites.

RESEARCH AND DEVELOPMENT

The Eliwell success story has lasted 30 years, during which time we have developed some of the most highly-regarded products in the industry.

With our R&D department, an excellence center for Invensys Controls, Eliwell is at the cutting edge of innovative solutions for air conditioning and refrigeration, as demonstrated by the unparalleled quality and reliability of our highly innovative products. The heart of the company is the Technical Engineering Department; a lot of resources are invested in Research and Development here, for the creation of new products and solutions in collaboration with leading Italian Universities and major international manufacturers and OEMs operating within the refrigeration and air conditioning industry.

TECHNICAL SUPPORT AND SCHEDULED TECHNICAL SUPPORT

Eliwell, through its own Technical Support and Scheduled Technical Support department, offers the services of technical personnel who have been professionally and qualitatively trained in order to guarantee precise, reliable results for its customers.

Our technicians are on hand every day, to respond - free of charge - to any technical requirements relating to the installation and operation of all Eliwell instruments.

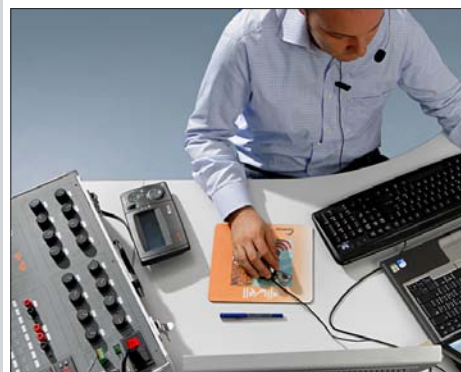
Furthermore, they also offer - via Service Selling - a customized and dedicated advice service for the development and installation of its own products, in order to guarantee maximum customer satisfaction.

THE ROLE OF THE WEB

Eliwell, with the aim of supplying customers and installers with all the information they need in a quick and precise fashion, has recently enabled the Secure Area of its site, which can only be accessed by authorised guests after they have entered a Username and Password.

This new technical capability gives them personalised, safe access to a vast selection of reserved content, which is constantly updated and easy to identify and download.

The Eliwell website also offers, through its search engine tool, up-to-date information relating to all the products in the catalogue.





MODBUS-RTU

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



RS-485

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



LINK

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



COPY CARD

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



TELEVISSYSTEM

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

**PRESSURE PROBES**

The EWPA series of probes are pressure reading devices; 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~ offers the installer the option of covering most areas of application, thus reducing the number of models that would be necessary if a transformer-type power supply was used.



Refrigeration

The Eliwell Digifrost™ product line is the ideal solution for controlling all applications in refrigeration and catering.

All the devices in the family have not only the control logic but also the power relays for the direct management of loads, at power levels of up to 2hp.

They are equipped with TTL communication ports for programming parameter mapping by means of the "Copy Card" accessory and, via an external converter, they can be connected to the Eliwell TelevisSystem, or else to a third party system, by means of the ModBus protocol. The /S versions include a RS-485 communication serial port for direct connection to monitoring networks.

The HACCP function is available as an optional extra, for meeting the most exacting demands of the market with regard to the temperature control of preserved food in compliance with the 93/43/EU Directives. Eliwell Digifrost™ is a top level range of electronic control devices specially designed for refrigeration systems, guaranteeing quality and safety in the preservation of fresh and frozen food and ensuring maximum refrigeration system efficiency in terms of energy saving. The vast range of sizes available makes Eliwell controllers suitable for all kinds of refrigeration system.



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EM300 (LX)



Applications

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

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 32x74mm, depth 30mm (no terminals); 'switching' models: depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

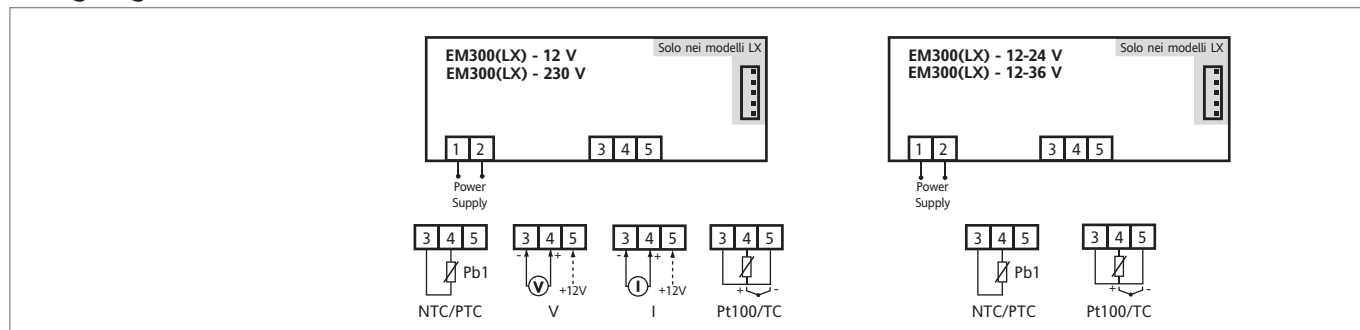
Storage temperature: -30...85°C

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

General features	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% 50/60Hz 12V~ ±10% 50/60Hz 12...24V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 12V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 12V~ ±10% 50/60Hz 12...24V~ ±10% 50/60Hz
LX models			
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 BusAdapter350

Wiring diagrams



Codes

p/n	descr.	Power supply	Probe	p/n	descr.	Power supply	Probe
TM10D0000D700	EM300	230V~	PTC/NTC	TM10I0000M700	EM300	230V~	current
TM10D00X0D700	EM300 LX	230V~	PTC/NTC	TM10V0000M700	EM300	230V~	voltage
TM10Z00X0M700	EM300 LX	230V~	Pt100/TC	TM10I00X0M700	EM300 LX	230V~	current
TM10Z00X0M400	EM 300 LX	12...24V~/~	Pt100/TC				



Applications

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

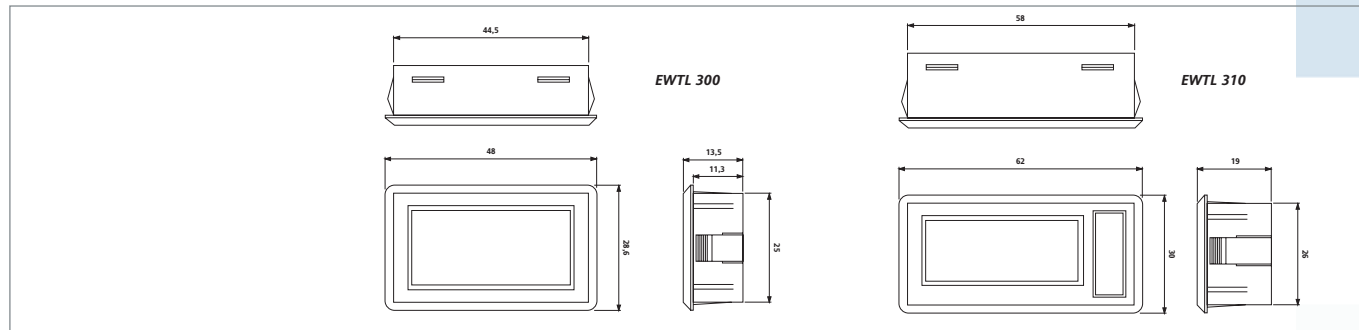
DST-30 is a solar-cell thermometer specifically designed for refrigerated counters and display units.

Common features

Installation: panel mounting

General features	EWTL300	EWTL310	DST-30
Display:	LCD with 2 and 1/2 digits	LCD with 2 and 1/2 digits	24x14mm LCD
Resolution:	1 or 0.1°C	1 or 0.1°C	0.1°C
Accuracy:	±1°C from 0 to 40°C	better than 0.5% of end of scale	1°C
Probe:	connected to instrument, cable length 1.5m	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:	-20...70°C	-20...70°C	-20...80°C
Dimensions:	front panel 48x28.6 mm depth 13.5 mm	front panel 62x30 mm depth 19 mm	front panel 66x30 mm depth 11.6 mm
Power supply:	one 1.5V LR 44 battery or equivalent - duration 12 months	one 1.5V LR 44 battery or equivalent - duration 12 months	integrated solar cells
Protection rating:			IP68

Dimensions



Codes

p/n	description	probe cable length	p/n	description	probe cable length
T1M1BT0100	EWTL300	1.5m	T1M1BT0105	DTS-30	1m
T1M1BT0101	EWTL310	1.5m			

ID400



Applications

The ID400 controller is suitable for any application on refrigeration units at normal temperature.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 32x74mm, depth 30mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

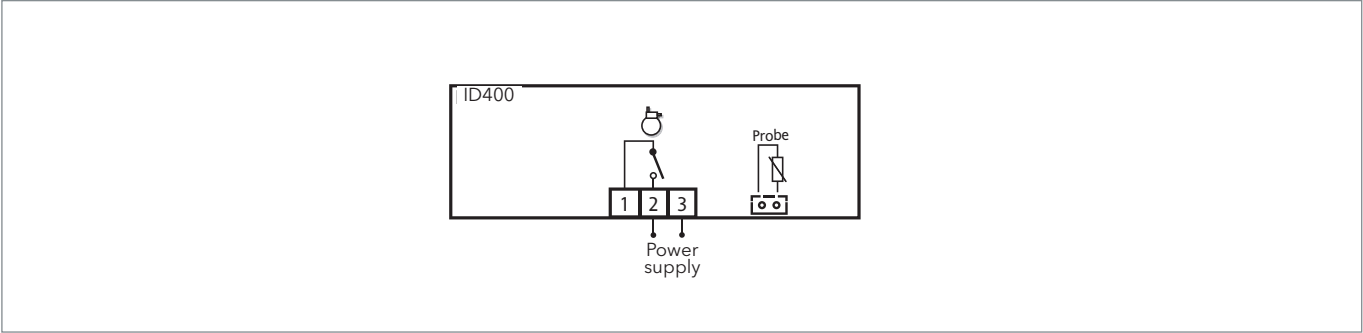
Storage temperature: -30...85°C

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

General features	ID400
Display range:	-5...99°C
Display:	no decimal point*, 2 digits+sign
Analogue inputs:	1 NTC (probe included)
Digital outputs:	1 output SPST 5(2)A 1/4Hp 250V~
Connections:	• 6.3 mm 3-way FASTON for relays and power supply • 2-way quick connector for NTC probe input
Power supply frequency:	50Hz/60Hz
Power supply voltage:	• 230V~ ±10% 50/60Hz model • 115V~ ±10% 50/60Hz model

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Power supply	Notes
ID1LY000CA701	ID400	230 V~	Industrial pack
ID1LY000CA701	ID400	115 V~	Industrial pack



Applications

ID 961 controllers are suitable for any application on refrigeration units at normal temperature.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 32x74mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

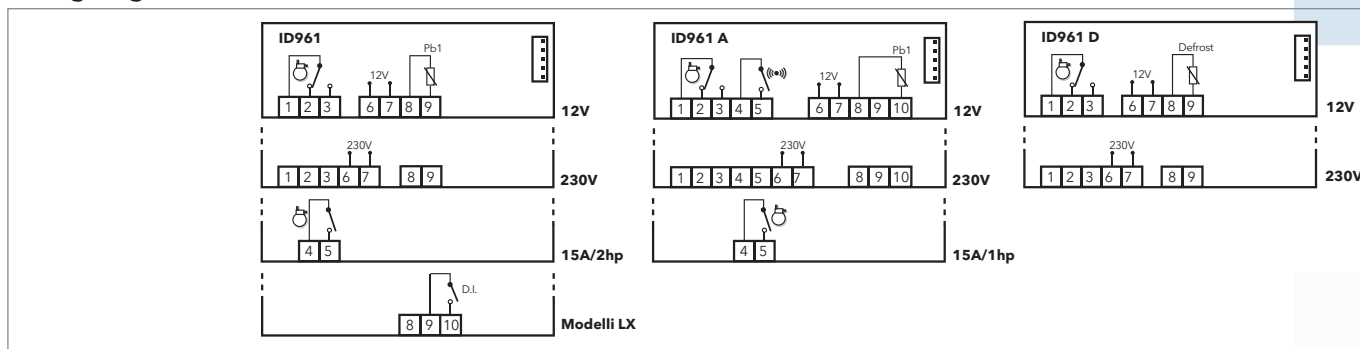
Storage temperature: -30...85°C

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

General features	ID961 (LX)	ID961/A	ID961/D
Display range:	- NTC probe: -50...99°C - PTC probe: -50...99°C	- NTC probe: -50...99°C - PTC probe: -50...99°C	- NTC probe: -50.0...110.0°C - PTC probe: -55.0...140.0°C
Display:	no decimal point * 2 digits + sign	no decimal point * 2 digits + sign	no decimal point* 3 and a half digits + sign
Analogue inputs:	1 PTC or NTC *	1 PTC or NTC *	1 PTC or NTC * (defrosting input)
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~, or SPDT 15A 250V~, or SPDT 2hp	1 SPDT 8(3)A 250V~ or 1 SPST 8(3)A or SPST 15A 1hp 250V~	1 SPDT 8(3)A 250V~ or SPST 15A 1hp 250V~
Measurement range:	from -50 to 99°C	from -55 to 99°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	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 consumption:	230V model: 3VA max 12V model: 1.5VA max	230V model: 3VA max 12V model: 1.5VA max	230V model: 3VA max 12V model: 1.5VA max
Power supply:	230V~ ±10% 50/60Hz 12V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 12V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 12V~/~ ±10% 50/60Hz
LX models			
Connections:	TTL port for connection to Copy Card and TelevisSystem	-	-
Digital inputs:	1 clean contact at low safety voltage	-	-
Display:	3 and a half digits + sign	-	-
HACCP:	optional	-	-

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID11D00TCA700	ID961	8A	230V~
ID16D00TCA700	ID961	15A	230V~
ID17D00TCA700	ID961	2hp	230V~
ID1AD00TCA700	ID961/A	8A	230V~

Codes

p/n	descr.	Relay	Power supply
ID16D00TEH700	ID961/D	15A	230V~
ID11DI0XCH700	ID961 LX	8A	230V~
ID16DI0XCH700	ID961 LX	15A	230V~

ID970 (LX)



Applications

ID970 controllers are suitable for any application on refrigeration units at normal or low temperature.

Common features

- Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 32x74mm, depth 59mm
- Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

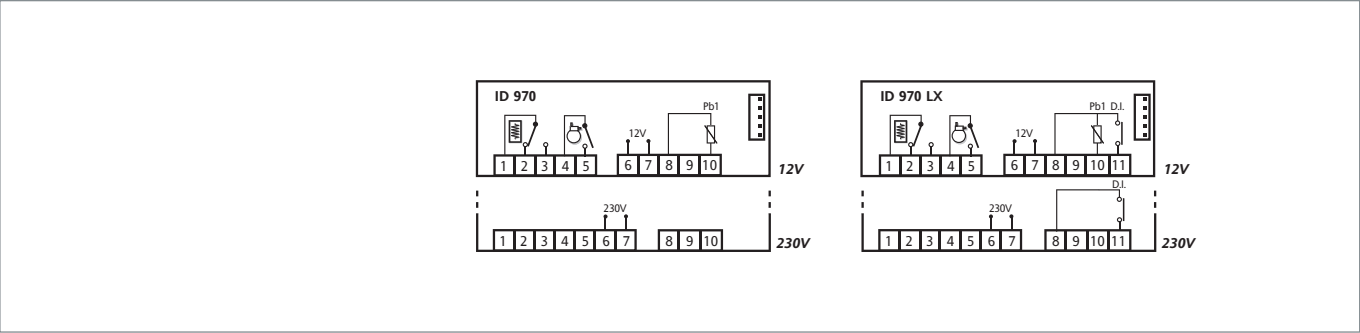
Operating temperature: -5...55°C

Storage temperature: -30...85°C

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

General features	ID970 (LX)
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C
Display:	no decimal point * 3 digits + sign
Analogue inputs:	1 PTC or NTC *
Connections:	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~, or SPDT 15A 250V~ + 1 SPDT 8(3)A 250V~
Measurement range:	from -55 to 140°C
Accuracy:	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C
Power consumption:	3VA max
Power supply:	• 230V~ ±10% 50/60Hz • 12V~/= ±10% 50/60Hz
LX models	
Connections:	TTL port for connection to Copy Card and TelevisSystem
Digital inputs:	1 clean contact at extra low safety voltage
*(selectable by parameter)	

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
ID12D00TCD700	ID970	8A/8A	230V~
ID18D00TCD700	ID970	15A/8A	230V~
ID12DI0XCH700	ID970 LX	8A/8A	230V~



Applications

ID971 controllers are suitable for any application on refrigeration units at normal temperature.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth according to model, see "General features" table

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

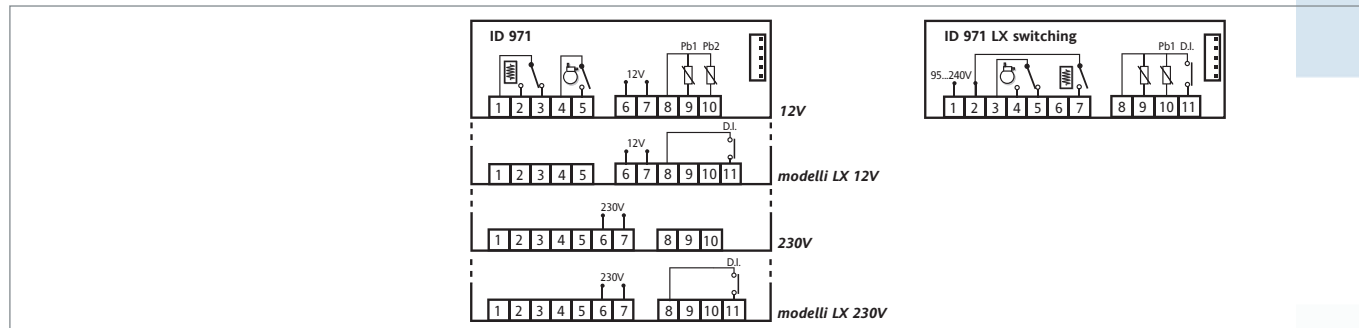
Storage temperature: -30...85°C

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

General features	ID971 (LX)	ID971 (LX) Switching
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 digits + sign	no decimal point* 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *	2 PTC or NTC *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~ or SPDT 15A 250V~ or SPDT 2hp + 1 SPST 8(3)A 250 V~	1 SPDT 8(3)A 1/2hp 250V~ + 1 SPST 11A 2hp 250V~
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:	230V model: 3W max 12V model: 1.5W max	3W max
Power supply:	230V~ ±10% 50/60Hz 12V~/± ±10% 50/60Hz	100...240V~ ±10% 50/60Hz
Buzzer:	optional	optional
Dimensions:	Depth 59 mm (terminals excluded)	Depth 68 mm (terminals excluded)
LX models		
Connections:	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID22D00TCD700	ID971	8A/8A	230V~
ID28D00TCD700	ID971	8A/15A	230V~
ID29DI0TCH700	ID971	8A/2hp	230V~
ID22DI0XCH700	ID971 LX	8A/8A	230V~

Codes

p/n	descr.	Relay	Power supply
ID29DI0XCH700	ID971 LX	8A/2hp	230V~
ID22DL0XCH300	ID971 LX buzzer	8A/8A	12V~
ID29DI0XCHH81	ID971 LX switching	8A/2hp	100...240V~

ID974 (LX)



Applications

The ID974 (LX) is a microprocessor-based refrigeration controller designed for the control of ventilated refrigeration units for high or normal temperatures.

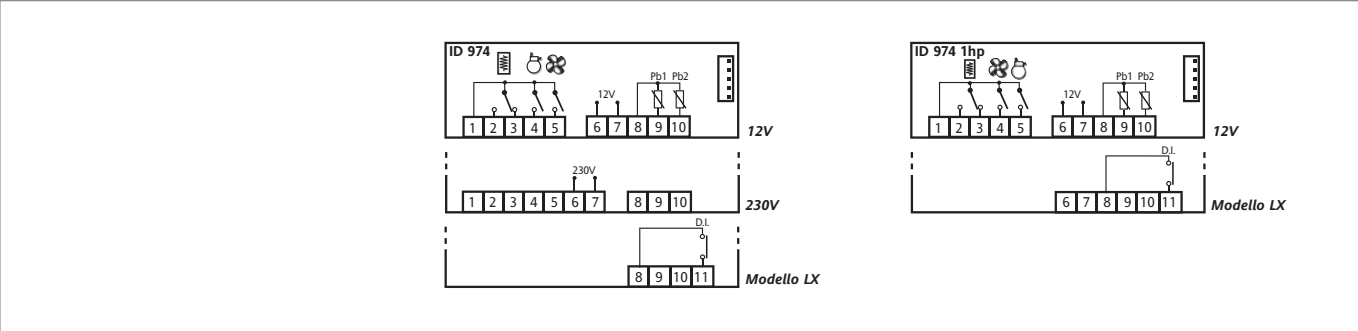
Common features

Front panel: IP65	(+0.2/-0.1mm)
Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys	Operating temperature: -5...55°C
Dimensions: front panel 74x32mm, depth 59mm	Storage temperature: -30...85°C
Installation: panel mounting with 71x29mm drilling template	Ambient humidity for operation and storage: 10...90% RH (non-condensing)

General features	ID974 (LX)	ID974 (LX) 1hp
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 digits + sign	no decimal point * 3 digits + sign
Analogue inputs:	2 PTC or NTC *	2 PTC or NTC *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~ 1SPST 5(2)A 250V~	1 SPDT 15A 1hp 250V~ + 1 SPST 8(3)A 250V~ 1SPST 8(3)A 250V~
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:	1.5VA max	1.5VA max
Power supply:	• 230V~ ±10% 50/60Hz • 12V~/± ±10% 50/60Hz	• 12V~/± ±10% 50/60Hz
HACCP:	available	available
LX models		
Connections:	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage

*(selectable by parameter)

Wiring diagram



Codes				Codes			
p/n	descr.	Relay	Power supply	p/n	descr.	Relay	Power supply
ID23DB0TCH700	ID974	8A/8A/5A	230V~	ID23DM0XCD700	ID974 LX HACCP	8A/8A/5A	230V~
ID2CDB0TCH300	ID974	8A/8/15A	12V~	ID23DL0XCH700	ID974 LX	8A/8A/5A	230V~



Applications

The range of ID974 controllers is further extended by the addition of the new ID974(LX) switching with universal power supply and the ID974(LX) DCC (deep cooling cycle) that combines blast chilling control with temperature control for "ventilated" units.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth according to model, see "General features" table

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

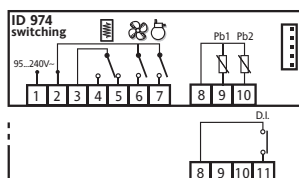
Storage temperature: -30...85°C

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

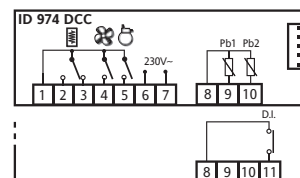
General features	ID974 (LX) Switching	ID974 (LX) DCC
Display range:	- NTC probe: -50.0...110.0°C - PTC probe: -55.0...140.0°C	- NTC probe: -50.0...110.0°C - PTC probe: -55.0...140.0°C
Display:	no decimal point* 3 and a half digits + sign	no decimal point* 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *	2 PTC or NTC *
Connections:	TTL port for connection to Copy Card systems based on ModBus protocol	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 11A 2hp 250V~ + 1 SPST 8(3)A 250V~ 1 SPST 8(3)A 250V~ or 1 SPST 5(2)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~ 1 SPST 5(2)A 250V~
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:	3W max	3W max
Power supply:	100...240V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Dimensions:	depth 68 mm	depth 59 mm
LX models		
Connections:	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage

*(selectable by parameter)

Wiring diagrams



Modello LX



Modello LX

Codes

p/n	descr.	Relay	Power supply
ID2EDB0TCHH00	ID974 Switching	2hp/8A/5A	100...240V~
ID2EDL0XCHH00	ID974 LX Switching	2hp/8A/5A	100...240V~

Codes

p/n	descr.	Relay	Power supply
ID23Y00TGD782	ID974 DCC	8A/8A/5A	230V~

ID PLUS902 - ID PLUS961



Applications

The controllers in the ID PLUS902 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).

Common features

New front panel design - Front panel: IP 65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

Storage temperature: -30...85°C

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

Simplified user interface

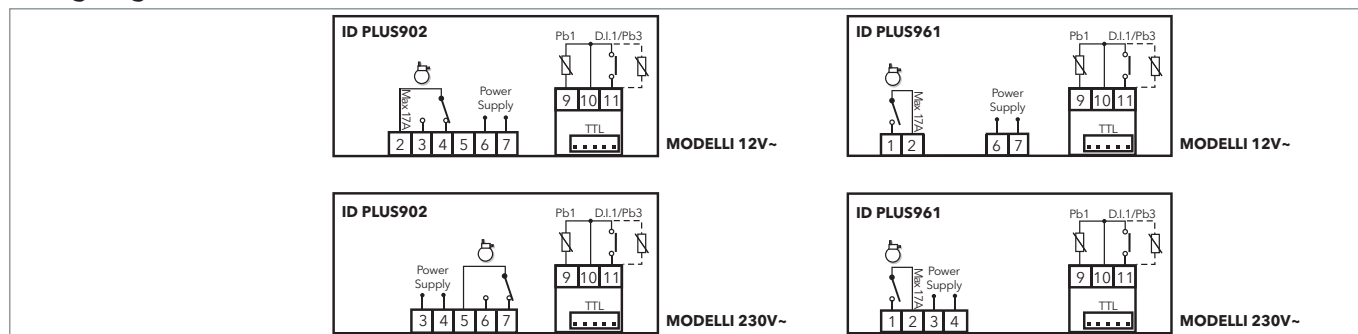
List of default parameters - can be selected and restored
HACCP function

Can be connected to Televis**System** and ModBus
New USB/TTL Unicard for uploading/downloading parameters

General features	ID PLUS902	ID PLUS961
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)*
Connections:	TTL port for connection to Unicard/Copy Card or Televis System /ModBus monitoring device*	TTL port for connection to Unicard/Copy Card or Televis System /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



Codes

p/n	descr.	Relay	Power supply
IDP11D0700000	ID PLUS902 NTC	8A	230V~
IDP11D0300000	ID PLUS902 NTC	8A	12V~/=

Codes

p/n	descr.	Relay	Power supply
IDP17D0700000	ID PLUS961 NTC	2hp	230V~
IDP17D0300000	ID PLUS961 NTC	2hp	12V~/=



Applications

Controllers in the ID PLUS971 range are new-generation devices suitable for static cold storage units at normal and low temperatures; controllers in the ID PLUS974 range are suitable for static and ventilated cold storage units at low temperatures.

Common features

New front panel design - Front panel: IP 65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

Storage temperature: -30...85°C

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

Simplified user interface

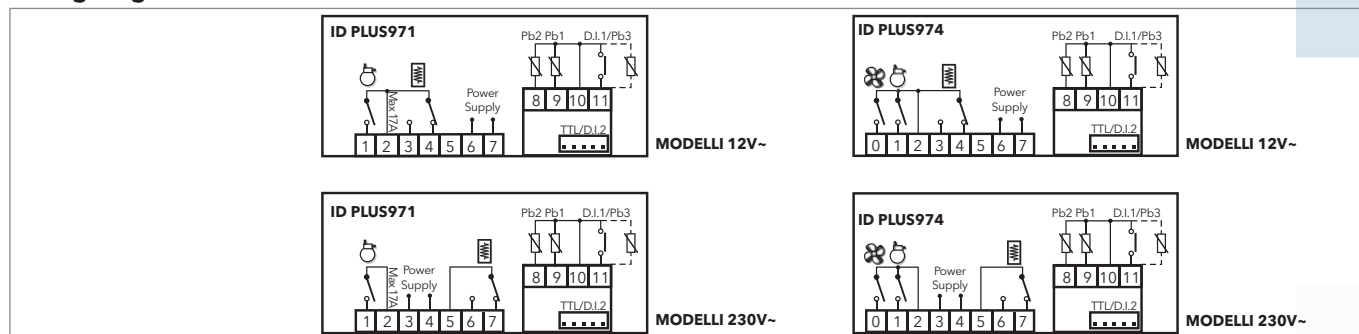
List of default parameters - can be selected and restored
HACCP function

Can be connected to Televis**System** and ModBus
New USB/TTL Unicard for uploading/downloading parameters

General features	ID-PLUS971	ID-PLUS974
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C • Pt1000 probe: -55.0...150.0°C	• NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C • Pt1000 probe: -55.0...150.0°C
Display:	with decimal point * 3 digits + sign	with decimal point * 3 digits + sign
Analogue inputs:	2 PTC / NTC / Pt1000 *	2 PTC / NTC / Pt1000 *
Configurable inputs:	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*	1 digital (SELV) / analogue (PTC/NTC/Pt1000)* 1 digital (SELV) / serial TTL*
Connections:	TTL port for connection to Unicard/Copy Card or Televis System /ModBus monitoring device*	TTL port for connection to Unicard/Copy Card or Televis System /ModBus monitoring device*
Digital outputs:	1 SPDT ½hp 8(4)A 250V~ 1 SPST 2hp 12(12)A 250V~	1 SPDT ½hp 8(4)A 250V~ 1 SPST 2hp 12(12)A 250V~ 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

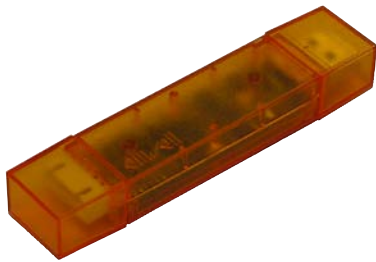


Codes

p/n	descr.	Relay	Power supply
IDP29DB700000	ID PLUS971 NTC	2hp/8A	230V~
IDP29DB300000	ID PLUS971 NTC	2hp/8A	12V~/=

Codes

p/n	descr.	Relay	Power supply
IDP2ED0700000	ID PLUS974 NTC	2hp/8A/5A	230V~
IDP2ED0300000	ID PLUS974 NTC	2hp/8A/5A	12V~/=



Applications

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

By downloading the DeviceManager software from the secure area of the www.eliwell.it to read and write maps on the Unicard device for instruments in the ID and ID PLUS families, without having to use other interfaces/licences.

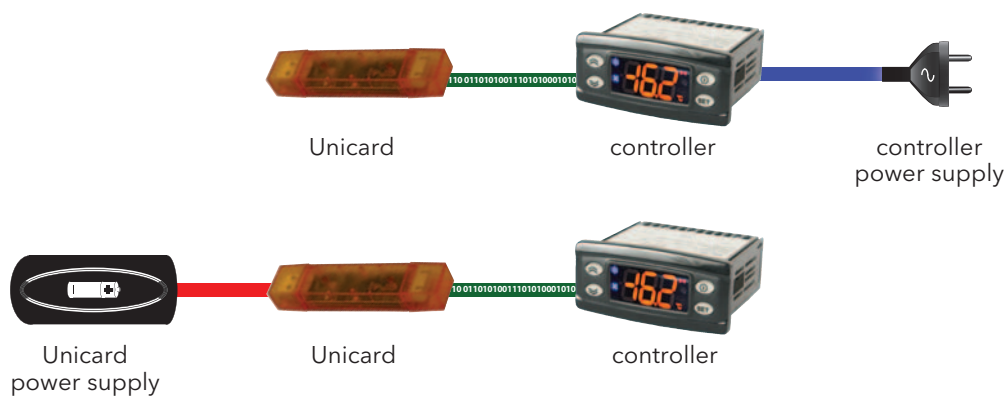
Specifications

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

Counter power supply example



Field power supply examples



Codes

p/n	descr.
CCA0BHT00UU00	USB/TTL UNICARD

eliwell

ID983 LX - ID985 /E/CK LX - Echo



Applications

ID983 - 985 (/E) LX units are compact electronic controllers specially designed for supermarket refrigeration systems. These controllers guarantee quality and safety in the preservation of fresh and frozen food and ensuring maximum refrigeration system efficiency in terms of energy saving.

The ID985 /E LX model can be connected to the Echo remote display. The ID985 /CK LX model is equipped with an RTC.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Operating temperature: -5...55°C

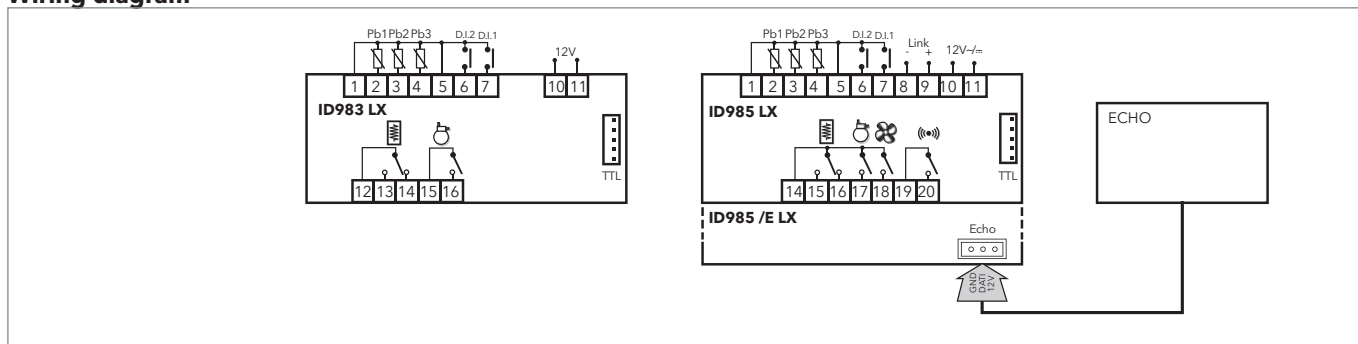
Storage temperature: -30...85°C

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

General features	ID983 LX	ID985 (/E) LX	Echo
Dimensions:	front panel 74x32mm, depth 66mm	front panel 74x32mm, depth 66mm	front panel 48x28.6 mm - depth 15 mm
Installation:	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
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	• 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	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 and Televis ^{System} or systems based on ModBus protocol	TTL port for connection to Copy Card and Televis ^{System} or systems based on ModBus protocol	3-way connection (GND, data, 12V) on quick-connection terminal block
Digital outputs:	1 SPDT 1/2hp 8(3)A 250V~ 1 SPST 1/2hp 8(3)A 1/2hp 250V~	1 SPDT 1/2hp 8(3)A 250V~ + 2 SPST 1/2hp 8(3)A 250V~ 1 SPST 1/4hp 5(2)A 250V~	-
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	1 or 0.1°C
Power consumption:	1.5VA max	3VA max	-
Power supply:	12V~/~ ±10% 50/60Hz	12V~/~ ±10% 50/60Hz	from the instrument to which it is connected
Clock:	available	present (/CK model)	-
Link:	not available	present (/CK model)	-
Output for Echo:	not available	only model ID985 /E LX	-

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Probe	Power supply
ID32DF1XCD300	ID983 LX	NTC	12V~/~

Codes

p/n	descr.	Probe	Power supply
ID34DF1XCD300	ID985 LX	NTC	12V~/~
ID34DF3XCD300	ID985 /E LX	NTC	12V~/~
EH000010VE000	Echo		



Applications

ID985 LX HotGas controllers are specially designed for supermarket refrigeration systems, with hot gas defrost management.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

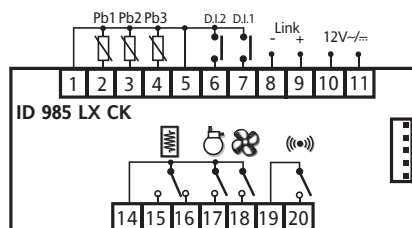
Storage temperature: -30...85°C

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

General features	ID985 LX HotGas	ID985 LX HACCP	ID985 LX HACCP Yearly Calendar
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	• 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	no decimal point * 3 and a half digits + sign
Analogue inputs:	3 PTC or NTC *	3 PTC or NTC *	3 PTC or NTC *
Digital inputs:	2 voltage-free inputs *	2 voltage-free inputs *	2 voltage-free inputs *
Connections:	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem	TTL port for connection to Copy Card and TelevisSystem
Digital outputs:	1 SPDT 8(3)A 250V~ + 2 SPST 8(3)A 250V~ + 1 SPST 5(2)A 250V~	1 SPDT 8(3)A 250V~ + 2 SPST 8(3)A 250V~ 1 SPST 5(2)A 250V~	1 SPDT 8(3)A 250V~ + 2 SPST 8(3)A 250V~ 1 SPST 5(2)A 250V~
Measurement range:	from -55 to 140°C	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	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 consumption:	3VA max	3VA max	1.5VA max
Power supply:	12V~/±10% 50/60Hz	12V~/±10% 50/60Hz	12V~/±10% 50/60Hz
HACCP:	not available	present	present
Yearly calendar:	not available	not available	present
Link:	present	not available	not available
Buzzer:	not available	present	present

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID34DF1XCD310	ID985 LX HotGas	8A/8A/8A/5A	12V
ID34DP0XCD390	ID985 LX HACCP	8A/8A/8A/5A	12V

Codes

p/n	descr.	Relay	Power supply
ID34DT0XCD380	ID985 LX Yearly Calendar	8A/8A/8A/5A	12V

ID985 /S/E/CK - Echo



Applications

ID985 controllers are suitable for any application on ventilated refrigeration units at normal or low temperature. The Echo is a remote signal repeater which can be connected to ID985/S/E/CK controllers.

ID985 /S/E/CK compact electronic controllers, specifically designed for supermarket refrigeration systems, are equipped with on-board integrated RS-485, remote display (Echo) and switching power supply; they guarantee quality and safety in the preservation of fresh and frozen foods and ensure the maximum efficiency of the refrigeration system in terms of energy saving.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Operating temperature: -5...55°C

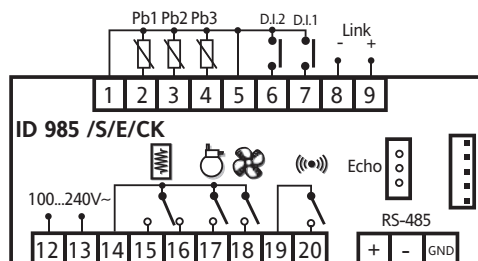
Storage temperature: -30...85°C

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

General features	ID985/S/E/CK	Echo
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -50.0...140.0°C	• NTC probe: -50.0...110.0°C • PTC probe: -50.0...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 *	-
Digital inputs:	2 voltage-free inputs	-
Connections:	TTL port for connection to Copy Card and TelevisSystem or systems based on ModBus protocol; internal RS-485 for connection to TelevisSystem or systems based on ModBus protocol	3-way connection (GND, data, 12V) on terminal block with quick connection
Digital outputs:	3 SPST 5(2)A 1/4hp 250V~ + 1 SPDT 8(3)A 250V~	-
Measurement range:	-55...140°C	-
Accuracy:	better than 0.5% of end of scale +1 digit	-
Resolution:	0.1°C	1 or 0.1°C
Power consumption:	2.5W max	-
Power supply:	100...240V~ ±10% 50/60Hz	from the instrument to which it is connected
Dimensions:	front panel 74x32mm, depth 66mm	front panel 48x28.6mm, depth 15mm
Installation:	panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template	panel mounting with 45.9x26.4mm (+0.2/-0.1mm) drilling template
Output for Echo:	present (/E model)	-
Link:	present (/CK model)	-
Clock:	present (/CK model)	-

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Plus	Power supply
ID34DR2SCDH00	ID985/S/E/CK	RTC+Link	100...240V~

Codes

p/n	descr.
EH000010VE000	Echo



Applications

IWC720 and IWC730 devices are suitable for applications on ventilated refrigeration units at normal or low temperature.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, switch keys with adhesive polycarbonate film

Dimensions: front panel 180x37mm, depth according to model

Installation: panel mounting with 150x31mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

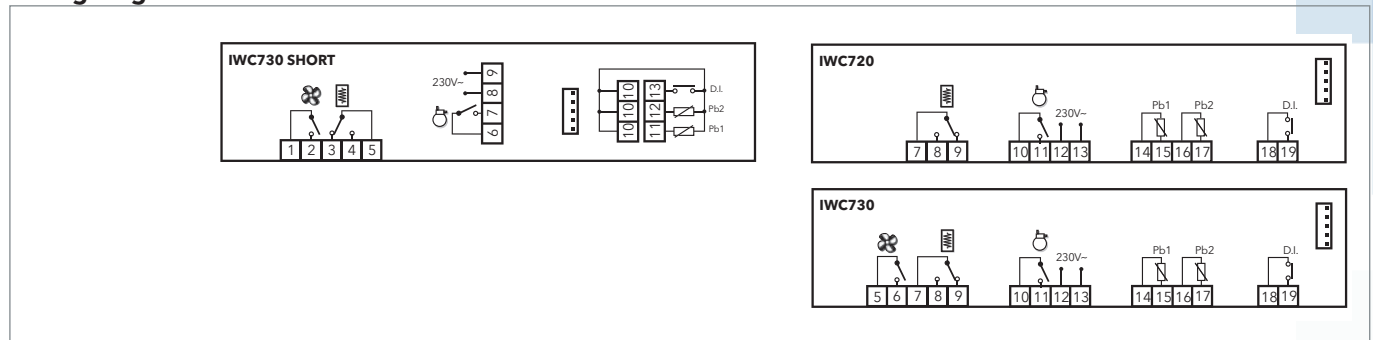
Storage temperature: -30...85°C

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

General features	IWC730 short	IWC720	IWC730
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	• 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	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *	2 PTC or NTC *	2 PTC or NTC *
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage	1 clean contact 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	TTL port for connection to Copy Card and Televis System
Digital outputs:	1 SPST 2hp 250V~ + 1 SPDT 15(3)A 1hp 250V~ + 1 SPST 8(3)A 1/2hp 250V~	1 SPST 2hp 250V~ + 1 SPDT 8(3)A 1/2hp 250V~	1 SPST 2hp 250V~ + 1 SPDT 8(3)A 1/2hp 250V~ + 1 SPST 8(3)A 1/2hp 250V~
Measurement range:	from -55 to 140°C	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	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 consumption:	6W max	6W max	6W max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Depth:	45mm	69mm (no terminals)	69mm (no terminals)
Removable terminals:	optional	optional	optional
Buzzer:	optional	optional	optional
HACCP:	optional	optional	optional

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
WC23DI0TQD780	IWC730 short	2hp/8A/8A	230V~
WC22DI0TCD790	IWC720	2hp/1hp	230V~

Codes

p/n	descr.	Relay	Power supply
WC23DI0TCD790	IWC730	2hp/8A/8A	230V~

IWC730 /E Twin + Echo



Applications

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

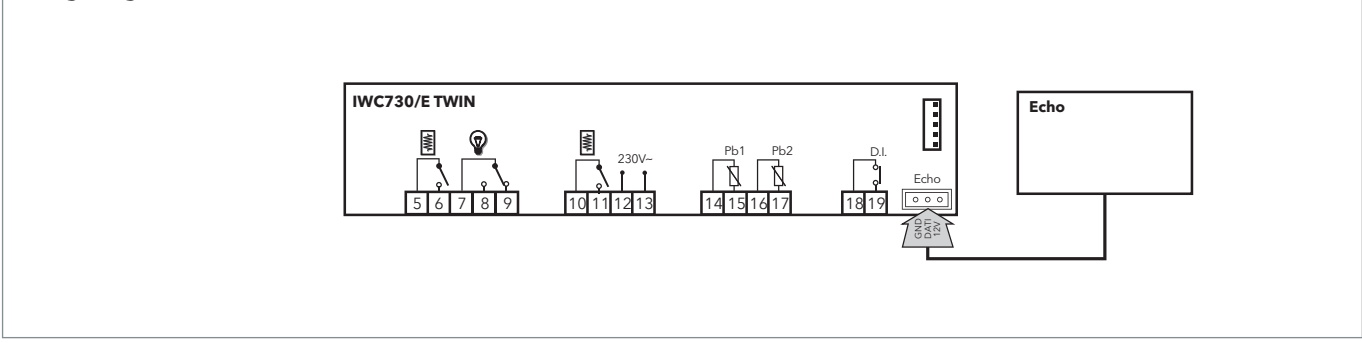
General features

Front panel: IP65
Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, switch keys with adhesive polycarbonate film

Operating temperature: -5...55°C
Storage temperature: -30...85°C
Ambient humidity for operation and storage: 10...90% RH (non-condensing)

General features	IWC730/E Twin	Echo
Dimensions:	front panel 180x37mm, depth 69mm	front panel 48x28.6 mm - depth 15 mm
Installation:	panel mounting with 150x31mm drilling template (+0.2/-0.1mm)	panel mounting with 45.9x26.4 mm (+0.2/-0.1 mm) drilling template
Display range:	NTC probe: -50.0...110.0°C	NTC probe: -50.0...110.0°C
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 NTC inputs	-
Digital inputs:	1 clean contact at extra low safety voltage	-
Connections:	TTL port for connection to Copy Card JST for connection to Echo module (cable length: 5m)	3-way connection (GND, data, 12V) on quick-connection terminal block
Digital outputs:	1 SPST 2 hp 12(12)A 250 V~ 1 SPDT 1 hp 12A 250 V~ 1 SPST 1/2 hp 8(3)A 250 V~	-
Measurement range:	-50.0...110.0°C	-
Accuracy:	better than 0.5% of end of scale +1 digit	-
Resolution:	0.1°C	0.1°C
Power consumption:	9W	-
Power supply:	230V~ ±10% 50/60Hz	from the instrument to which it is connected
*(selectable by parameter)		

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
WC23DIETFH780	IWC730/E Twin + Echo	2hp/8A/8A	230V~



Applications

IWC740 and IWC750 devices are suitable for applications on ventilated refrigeration units at normal or low temperature.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, switch keys with adhesive polycarbonate film

Dimensions: front panel 180x37mm, depth 69mm

Installation: panel mounting with 150x31mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

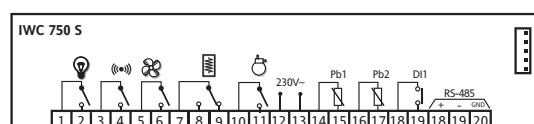
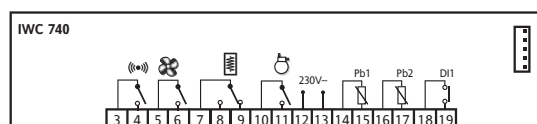
Storage temperature: -30...85°C

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

General features	IWC740	IWC750(/S)
Display range:	• NTC probe: -50.0...110.0°C • PTC probe: -50.0...140.0°C	• NTC probe: -50.0...110.0°C • PTC probe: -50.0...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 *	2 PTC or NTC *
Digital inputs:	1 clean contact at extra low safety voltage	1 clean contact at extra low safety voltage
Serial ports:	TTL port for connection to Copy Card and Televis System	TTL port for connection to Copy Card and internal RS-485 for connection to Televis System or systems based on ModBus protocol (optional)
Digital outputs:	1 SPST 2hp 250V~ + 1 SPDT 8(3)A 1/2hp 250V~ + 2 SPST 8(3)A 1/2hp 250V~	1 SPST 2hp 250V~ + 1 SPDT 12A 1hp 250V~ + 2 SPST 8(3)A 1/2hp 250V~ + 1 SPST 5(2)A 1/2hp 250V~
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:	6W max	6W max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Removable terminals:	optional	optional

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
WC24DI0TCD790	IWC740	8A/1hp/8A/8A	230V~
WC24DL0TCD799	IWC740 buzzer	8A/1hp/8A/8A	230V~

Codes

p/n	descr.	Relay	Power supply
WC25DI0TCD790	IWC750	2hp/1hp/8A/8A/8A	230V~
WC25DL0TCD799	IWC750 buzzer	2hp/1hp/8A/8A/8A	230V~
WC25DI0SCD700	IWC750/S	2hp/1hp/8A/8A/8A	230V~

IWC740 Common Line - IWC750 Common Line



Applications

IWC740 and IWC750 devices, with direct power supply to users, make it possible to connect loads directly to the controller and thus to receive the power supply with no need for external wiring. They are designed specifically for controlling refrigeration systems used in the preservation and processing of food for kitchens and bakeries.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, switch keys with adhesive polycarbonate film

Dimensions: front panel 180x37mm, depth 69mm (no terminals)

Installation: panel mounting with 150x31mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

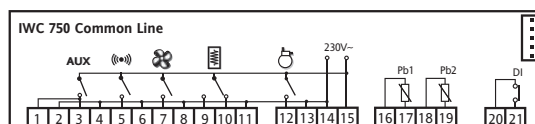
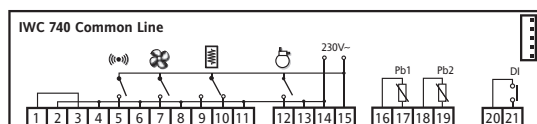
Storage temperature: -30...85°C

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

General features	IWC740	IWC750
Display range:	NTC probe: -50.0...110.0°C	NTC probe: -50.0...110.0°C
Display:	no decimal point * 3 and a half digits + sign	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 NTC	2 NTC
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 SPST 2hp 250V~ + 1 SPDT 1hp 250V~ + 2 SPST 8(3)A 1/2hp 250V~	1 SPST 2hp 250V~ + 1 SPDT 1hp 250V~ + 2 SPST 8(3)A 1/2hp 250V~ + 1 SPST 5(2)A 1/2hp 250V~
Measurement range:	from -50 to 110°C	from -50 to 110°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:	9W max	9W max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Buzzer:	optional	optional

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Power supply
WC2FDL0TCD780	IWC740 Common Line	230V

Codes

p/n	descr.	Power supply
WC2GDL0TCD700	IWC750 Common Line	230V



Applications

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

Thanks to a specific control algorithm, the IWC750 Twin can set 2 different preservation temperatures.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, switch keys with adhesive polycarbonate film

Dimensions: front panel 180x37mm, depth 69mm (no terminals)

Installation: panel mounting with 150x31mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

Storage temperature: -30...85°C

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

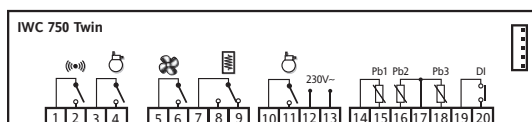
General features

IWC750 Twin

Display range:	NTC probe: -50.0...110.0°C
Display:	no decimal point * 3 and a half digits + sign
Analogue inputs:	3 NTC
Digital inputs:	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card
Digital outputs:	1 SPST 2hp 250V~ + 1 SPDT 15A 1hp 250V~ + 3 SPST 8(3) 1/2hp 250~
Measurement range:	from -50 to 110°C
Accuracy:	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C
Power consumption:	6W max
Power supply:	230V~ ±10% 50/60Hz
Buzzer:	optional

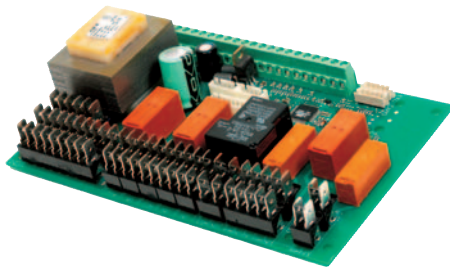
*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Power supply
WC35DL0TTD790	IWC750 Twin	230V



Applications

IWP devices are designed for the management of all applications related to monoblocks and refrigerated ducted counters, and consist of a power unit and a remote keyboard.

Common features

Container: open board

Installation: can be adapted to container sizes that comply with DIN specifications (installed on DIN rail)

Operating temperature: -5...55°C

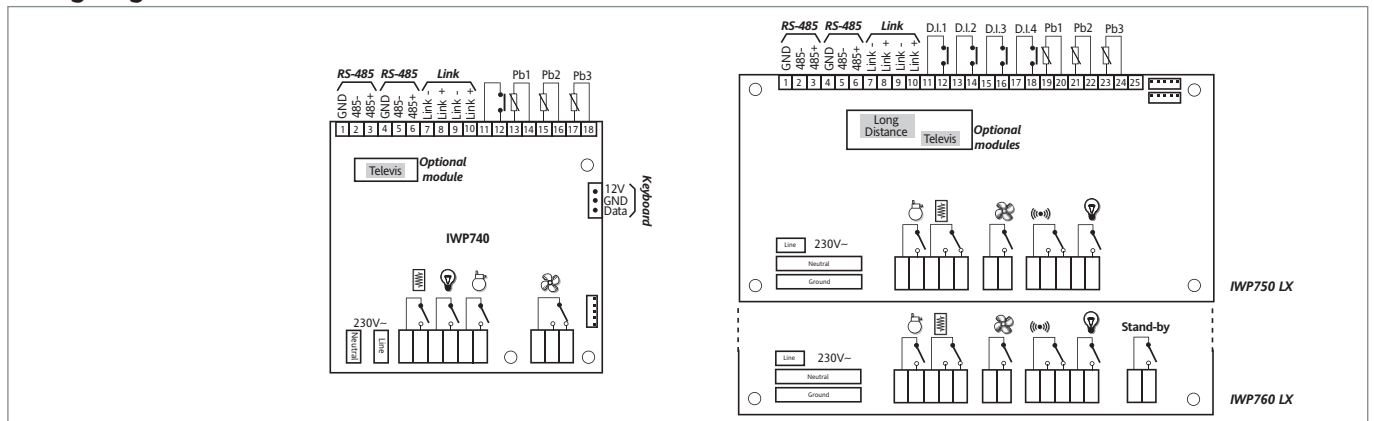
Storage temperature: -30...85°C

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

General features	IWP740 LX	IWP750 LX	IWP760 LX
Analogue inputs:	3 NTC or PTC *	3 NTC or PTC *	3 NTC or PTC *
Digital inputs:	1 clean contact at low safety voltage	4 clean contacts at extra low safety voltage	4 clean contacts at extra low safety voltage
Connections:	- TTL port for connection to Copy Card - RS-485 port for connection to TelevisSystem via module optional	- TTL port for connection to Copy Card - TTL port for connection to TelevisSystem - RS-485 port for connection to TelevisSystem via optional module	- TTL port for connection to Copy Card - TTL port for connection to TelevisSystem - RS-485 port for connection to TelevisSystem via optional module
Digital outputs:	2 SPST 16A 1hp 250V~ + 1 SPST 8(3)A 1/2hp 250V~ + 1 SPDT 8(3)A 1/2hp 250V~	2 SPST 20A 2hp 250V~ + 2 SPDT 16A 1hp 250V~ + 1 SPST 8(3)A 1/2hp 250V~	2 SPST 20A 2hp 250V~ + 2 SPDT 16A 1hp 250V~ + 2 SPST 8(3)A 1/2hp 250V~
Measurement range:	from -55 to 140°C	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	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 consumption:	6W max	8W max	8W max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Dimensions:	122x92mm	108x160mm	108x168mm
2nd compressor:	selectable	optional	optional
2nd evaporator:	selectable	selectable	selectable
Clock:	optional	optional	optional
HACCP:	optional	optional	optional
Buzzer:	optional	optional	optional
Keyboard connection:	on IWK	on IWK	on IWK

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Relay	Power supply	rtc
WP34DF1PCH700	IWP740 LX	8A/8A/16A/16A	230V~	SI
WP34DF1PCH790	IWP740 LX	8A/8A/16A/16A	230V~	SI

Codes

p/n	descr.	Power supply	rtc
WP35DF1XCD780	IWP750 LX	230V~	SI
WP36DF1XCD780	IWP760 LX	230V~	SI



Applications

IWK devices are remote keyboards connected to a power unit for the management of all applications related to monoblocks and refrigerated ducted counters.

Common features

Operating temperature: -5...55°C

Storage temperature: -30...85°C

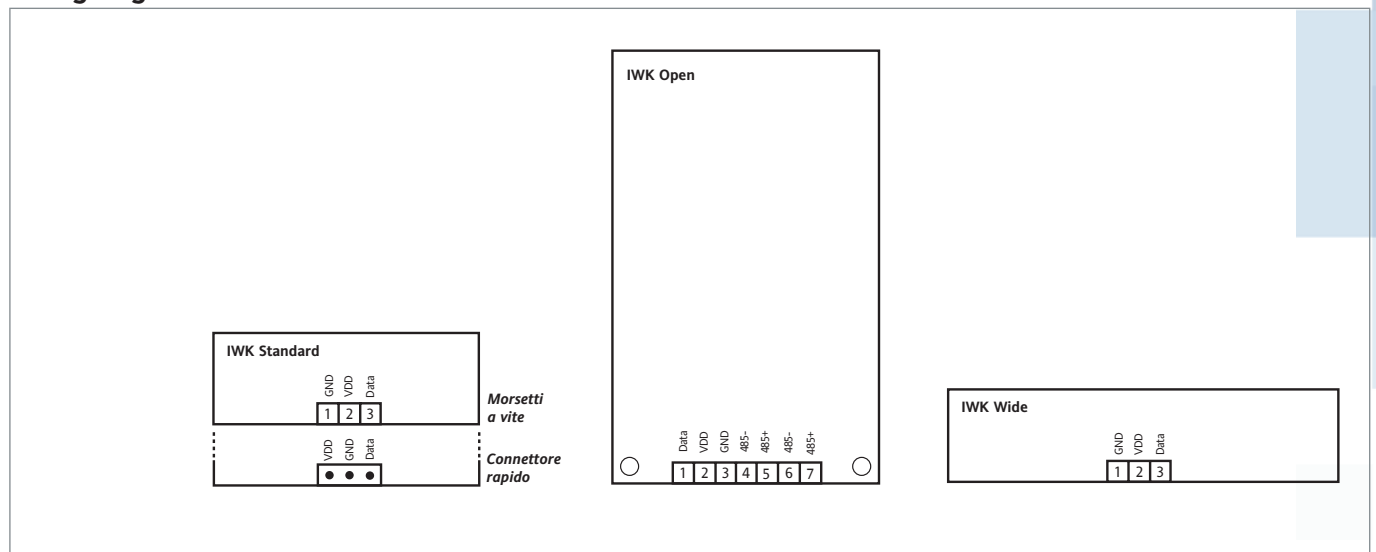
Ambient humidity for operation and storage:

10...90% RH (non-condensing)

General features	IWK STANDARD	IWK OPEN	IWK WIDE
Container:	PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys	open board	PC+ABS plastic resin casing, UL94 V-0, polycarbonate window, switch keys with adhesive polycarbonate film
Dimensions:	front panel 74x32mm, depth 30mm	68x124 mm	front panel 108x37mm, depth 29mm
Installation:	with 71x29mm drilling template (+0.2/-0.1mm)	check drilling plan	with 150x31mm drilling template (+0.2/-0.1mm)
Display:	no decimal point * 3 digits + sign	no decimal point * 3 digits + sign	no decimal point * 3 digits + sign
Measurement range:	-55...140°C	-55...140°C	-55...140°C
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:	from IWP power board	from IWP power board	from IWP power board
Buzzer:	optional	optional	optional
Number of keys:	4	6	6
Power board-keyboard connection:	short distance: 3-wire cable up to 10m long distance: 4-wire cable up to 100m	short distance: 3-wire cable up to 10m long distance: 4-wire cable up to 100m	short distance: 3-wire cable up to 10m long distance: 4-wire cable up to 100m

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.
WK1400100H000	IWK Standard
WK2600100H080	IWK Wide

Codes

p/n	descr.
WK0600100D080	IWK Open

EWDR981 - EWDR984



Applications

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

Common features

Front panel: IP65

Container: plastic casing with 4 DIN modules

Dimensions: front panel 70x85mm, depth 61mm

Installation: on DIN rail (Omega 3) or wall-mounted

Operating temperature: -5...55°C

Storage temperature: -30...85°C

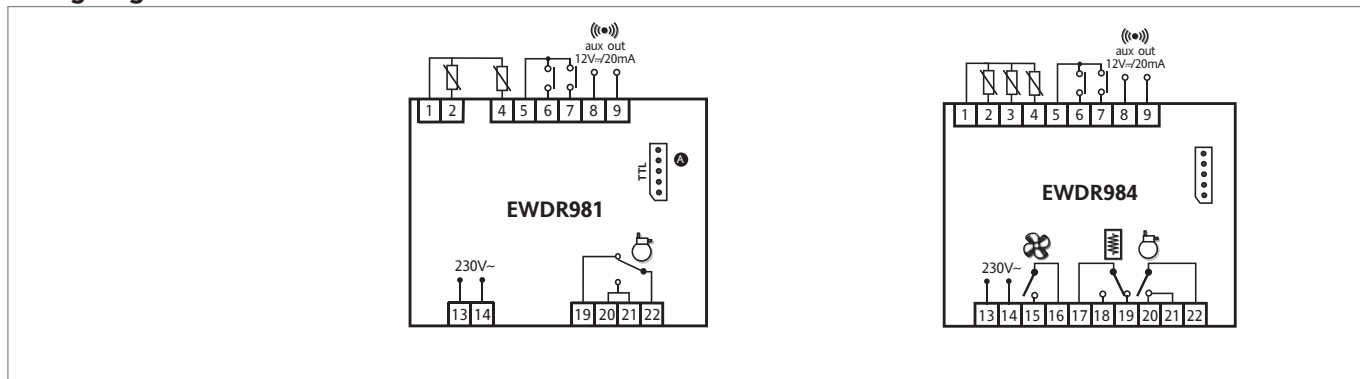
Ambient humidity for operation and storage:
10...90% RH (non-condensing)

Connections: on screw-on terminal block for wires $\leq 2.5\text{mm}^2$
(one wire only per terminal for power connections)

General features	EWDR981	EWDR984
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 diagram



Codes

p/n	descr.	Power supply
DR26DI0TCD700	EWDR981	230V~

Codes

p/n	descr.	Power supply
DR3CDI0TCD700	EWDR984	230V~



Applications

The EWDR range of products, available in a 4 DIN module size (70x85mm), is designed for applications requiring controllers installed on DIN rails, such as electrical panels for cold rooms, or applications with centralised electrical panels. The EWDR983 LX and EWDR985 LX devices are equipped with an internal clock (RTC) for defrosting management and a RS-485 serial port for connection to Televis**System**.

Common features

Front panel: IP65

Container: plastic casing with 4 DIN modules

Dimensions: front panel 70x85mm, depth 61mm

Installation: on DIN rail (Omega 3) or wall-mounted

Operating temperature: -5...55°C

Storage temperature: -30...85°C

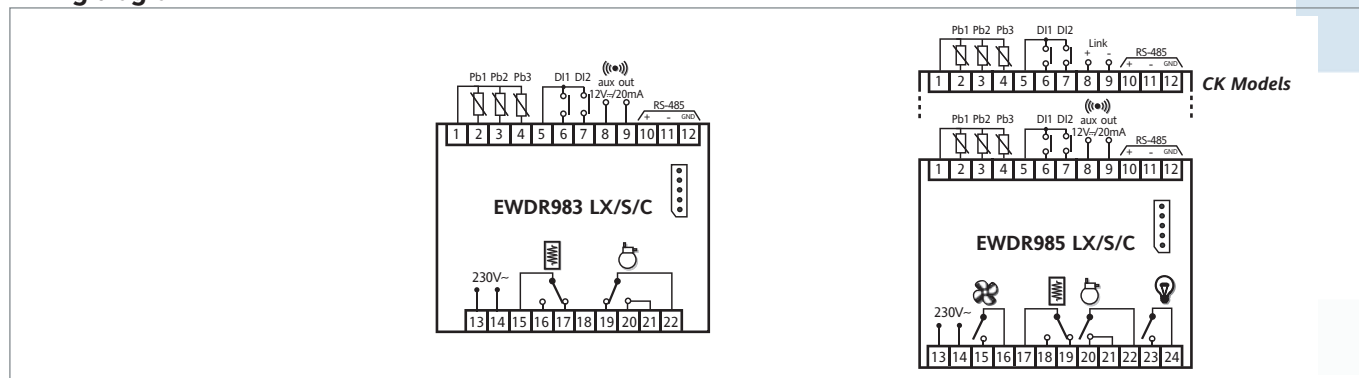
Ambient humidity for operation and storage:
10...90% RH (non-condensing)

Connections: on screw-on terminal block for wires $\leq 2.5\text{mm}^2$
(one wire only per terminal for power connections)

General features	EWDR983 LX /S /C	EWDR985 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~ $\pm 10\%$ 50/60Hz	230V~ $\pm 10\%$ 50/60Hz
Link:	not available	available
Clock:	available	available

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Power supply
DR38DI0TCD700	EWDR983	230V
DR38DF0TCD700	EWDR983 /C	230V
DR38DF0SCD700	EWDR983 LX	230V

Codes

p/n	descr.	Analogue output	Power supply
DR34DI0TCD700	EWDR985		230V
DR35DR0SCD700	EWDR985 LX	12V~/20mA	230V

WM961 /A - WM971



Applications

WM961 and WM971 controllers are one-step devices for wall mounting. They can be used as a simple thermostat or for "cold" or "hot" setting.

Common features

Front panel: IP30

Container: ABS plastic casing (white cap),
PC+ABS (black backplate), polycarbonate window,
switch keys with adhesive polycarbonate film

Dimensions: front panel 124x80mm,
depth 25mm (no terminals)

Installation: wall

Operating temperature: -5...55°C

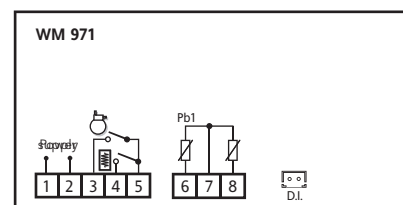
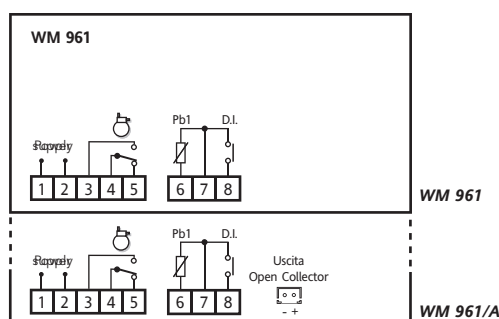
Storage temperature: -30...85°C

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

General features	WM961/A	WM971
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:	1 PTC or NTC *	2 PTC or NTC *
Digital inputs:	1 voltage-free input *	1 voltage-free inputs *
Digital outputs:	1 SPDT 16A 1hp 250V~ + 1 open collector PNP output (version /A only)	2 SPST 3A 1/4hp 250V~
Measurement range:	from -55 to 140°C	from -55 to 140°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	1 or 0.1°C	1 or 0.1°C
Power consumption:	2W max	2W max
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagram



Codes

p/n	descr.	Power supply
WM1GDL00BHH00	WM961/A	100...240V

Codes

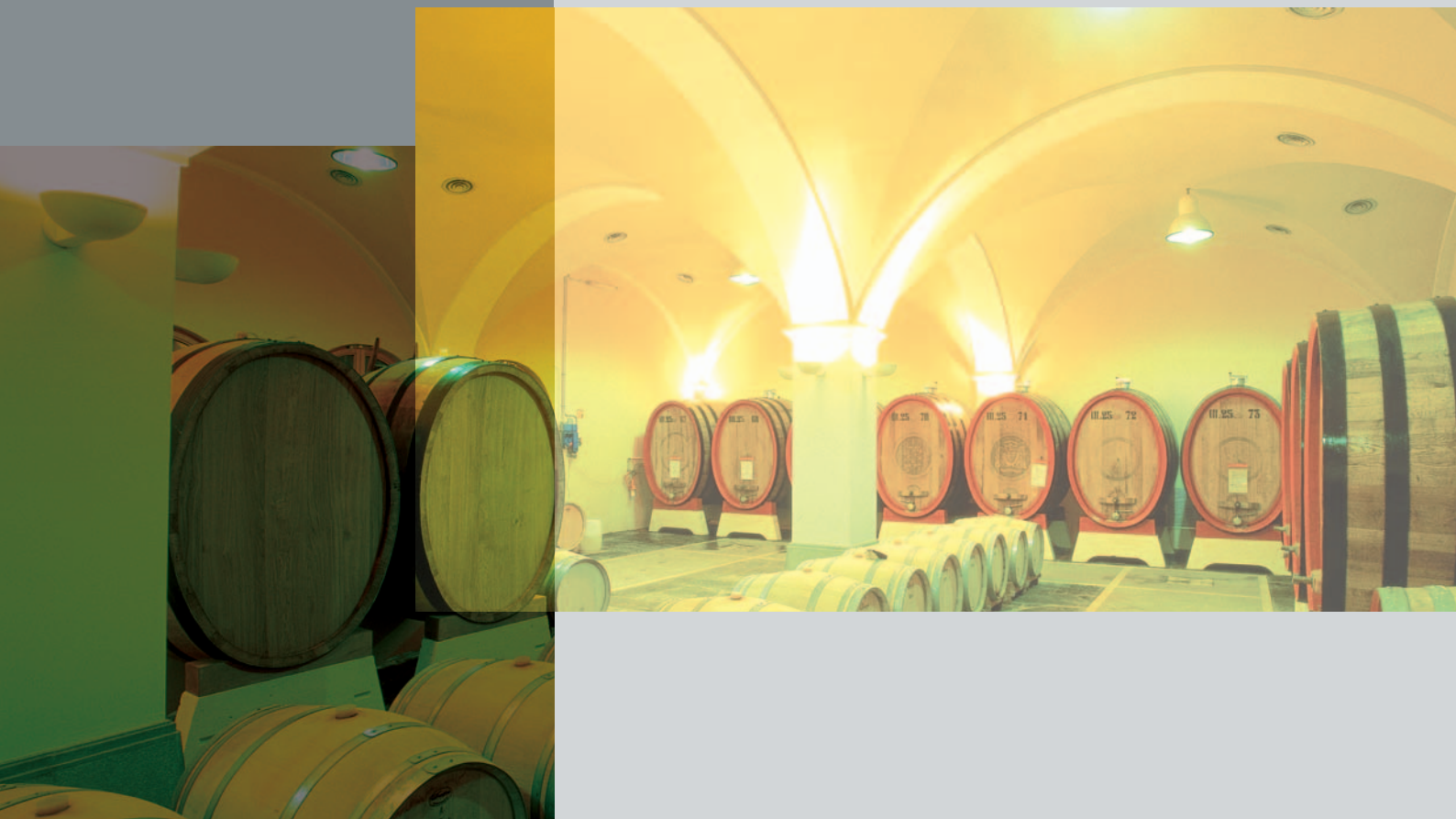
p/n	descr.	Power supply
WM2IDB00CHH00	WM971	100...240V

eliwell

Industrial refrigeration



The industrial controllers line, suitable for all refrigeration systems right up to the most complex ones used in power stations, is capable of managing all applications in such a way as to guarantee maximum quality in the preservation of fresh and frozen food, thanks to a set of specific algorithms, whilst ensuring maximum energy efficiency in refrigeration systems. The innovative design combines ease of installation with water resistance. The user interface makes using these devices easy and intuitive, thanks to a display technology that makes it possible to monitor all the main system variables, with direct access to control functions. The controllers are available with a series of advanced functions, such as the logging of HACCP events with a yearly calendar, combined temperature and humidity control, simultaneous control of suction and condensation sections and, in the more evolved models, multi-compressor systems.



EWCM8400	... B2
EWCM8600	... B2
EWCM8900	... B2
EWCM9100	... B3
EWCM9900	... B3
Keyboard	... B3
EWCM840/S	... B4
EWCM860/S	... B4
EWCM890/S	... B4
EWCM900/S	... B5
EWCM4120-4150-4180	... B6
EWRC300 LX	... B7
EWRC500 LX	... B7
EWRC550 LX	... B8
EWRC800 LX	... B8
EWHT800 LX	... B9
EWHT1800 LX	... B9
EEV system	... B10
EEV system - Kit	... B11
FASEC33	... B12
FASEC43 (C)	... B12
FASEC53	... B12
FASEC100	... B13
FASEC105	... B13
FASEC155	... B13
FASEC255	... B14
FASEC500	... B15
FASEC505	... B15
FASEC555	... B15
CFS02...08 /V/I	... B16
WM253	... B17

EWCM8400 - EWCM8600 - EWCM8900



Applications

The new series of controllers for EWCM compressor rooms provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data.

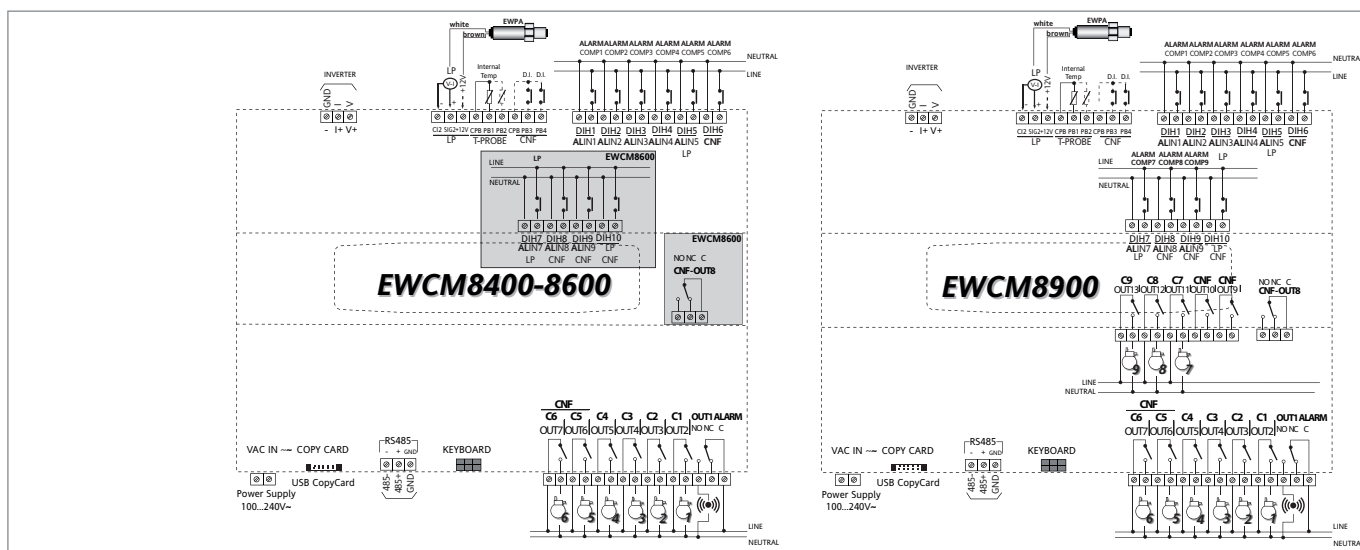
Energy saving is guaranteed thanks to the dedicated control algorithms.

Common features

Container: plastic casing, 13 DIN module (227.5x110x60mm)
 Insulation class: 2
 Functions: inverter control both in suction and delivery
 Mounting: on DIN Omega rail
 Connections: screw-on with removable terminal block
 Operating temperature: -5...55°C
 Storage temperature: -30...85°C
 Ambient humidity for operation and storage: 10...90% RH (non-condensing)
 Display: LCD on external keyboard
 Power board-keyboard connector: 6-way quick connector

General features	EWCM8400	EWCM8600	EWCM8900
Analogue inputs:	2 NTC/PTC/DI + 1 high precision current (4...20mA / 0...5V / 0...10V)	2 NTC/PTC/DI + 1 high precision current (4...20mA / 0...5V / 0...10V)	2 NTC/PTC/DI + 1 high precision current (4...20mA / 0...5V / 0...10V)
Digital inputs:	6 voltage (100...240V~) + 2 configurable voltage-free	10 voltage (100...240V~) + 2 configurable voltage-free	10 voltage (100...240V~) + 2 configurable voltage-free
Analogue outputs:	1 voltage/current (0...10V/4...20mA)	1 voltage/current (0...10V/4...20mA)	1 voltage/current (0...10V/4...20mA)
Digital outputs:	6 SPST 5(2)A 250V~ (2 configurable) + 1 SPDT 8(3)A 250V~ (alarm)	6 SPST 5(2)A 250V~ (compressors) + 2 SPDT 8(3)A 250V~ (1 for alarm and 1 configurable)	11 SPST 5(2)A 250V~ (9 compressors)+2 SPDT 8(3)A 250V~ (1 alarm) (3 configurable relays)
Connections:	TTL port for USB connection to Copy Card + RS-485 for connection to TelevisSystem and systems based on ModBus protocol	TTL port for USB connection to Copy Card + RS-485 for connection to TelevisSystem and systems based on ModBus protocol	TTL port for USB connection to Copy Card + RS-485 for connection to TelevisSystem and systems based on ModBus protocol
Clock:	present	present	present
Power consumption:	20W	20W	20W
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz

Wiring diagrams



Codes

p/n
EM34AG1*1BH0A
EM34DH1*1BH0A

descr.
EWCM8400
EWCM8600

p/n
EM34BH1*1BH0A

descr.
EWCM8900

* The letter in this position indicates the languages available for the code:
 A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; Q: TUR/ENG



Applications

The new series of controllers for EWCM compressor rooms provides a single solution to temperature control in refrigeration systems. The external keyboard with graphic LCD and the rapid parameter setting menu give greater accessibility and make it easier for the operator to configure parameters and access data.

Energy saving is guaranteed thanks to the dedicated control algorithms.

Common features

Insulation class: 2

Operating temperature: -5...55°C

Ambient humidity for operation and storage:

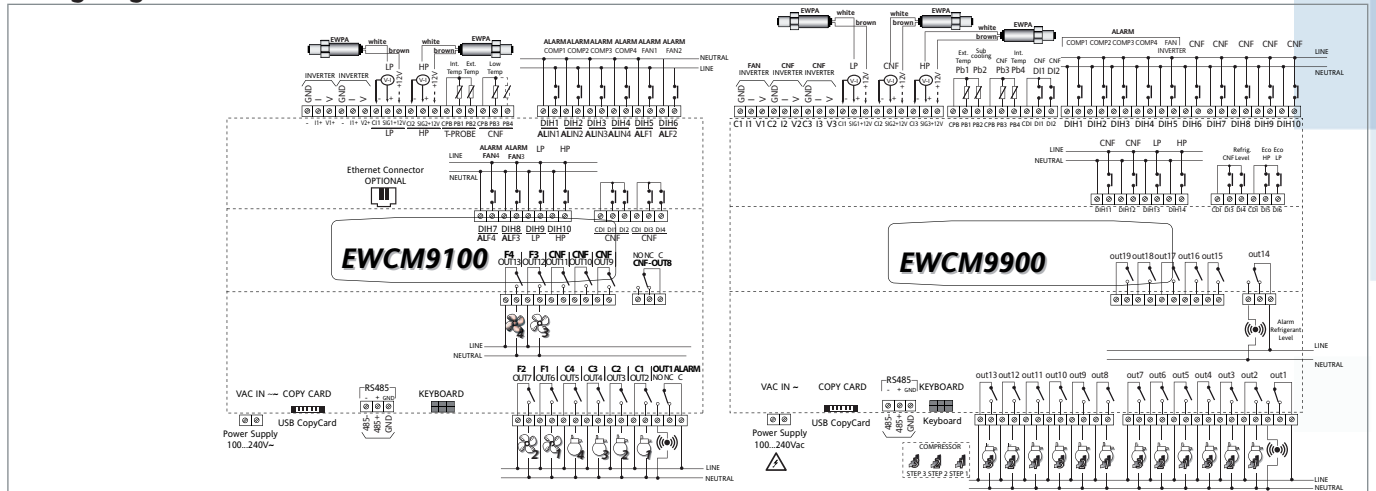
10...90% RH (non-condensing)

Power board-keyboard connector:

6-way quick connector

General features	EWCM9100	EWCM9900	Keyboard
Container:	PC+ABS UL94 plastic resin casing V-0 13DIN module (227.5x110x60mm)	PC+ABS UL94 plastic resin casing V-0 18DIN module (315x110x60mm)	PC+ABS UL94 V-0 plastic resin casing (160x96x10mm)
Mounting:	on DIN Omega rail	on DIN Omega rail	panel mounting with 138x68mm drilling template
Storage temperature:	-30...85°C	-30...85°C	-20...85°C
Analogue inputs:	4 NTC/PTC/DI + 2 high precision current (4...20mA / 0...5V / 0...10V)	4 NTC/PTC/DI + 3 high precision current (4...20mA / 0...5V / 0...10V)	-
Digital inputs:	10 voltage (100...240V~) + 4 configurable voltage-free	voltage (100...240V~) + 6 configurable voltage-free	-
Analogue outputs:	2 voltage/current (0...10V/4...20mA)	3 voltage/current (0...10V/4...20mA)	-
Digital outputs:	11 SPST 5(2)A 250V~ (4 compressors, 4 fans and 3 configurable) + 2 SPDT 8(3)A 250V~ (1 alarm and 1 conf.)	17 SPST 5(2)A 250V~ (4 compressors, 8 partial compressors and 5 configurable) + 2 SPDT 8(3)A 250V~ (1 alarm and 1 conf.)	-
Connections:	TTL port for USB connection to Copy Card + RS-485 for connection to TelevisSystem and systems based on ModBus protocol	TTL port for USB connection to Copy Card + RS-485 for connection to TelevisSystem and systems based on ModBus protocol	-
Display:	LCD on external keyboard	LCD on external keyboard	128x64 pixel graphic LCD backlit with LEDs
Functions:	inverter control both in suction and delivery	inverter control both in suction and delivery	-
Power consumption:	20W	20W	3VA
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	from power board

Wiring diagrams



Codes

p/n	descr.
EM35BH2*1BH0A	EWCM9100
EM83CI3A*0BH0A	EWCM9900

Codes

p/n	descr.
EMK0000B00000	ENG/ITA keyboard
CO000029	3m cable
CO000031	5m cable

* The letter in this position indicates the languages available for the code:
A: ITA/ENG; B: ENG/ITA; C: FRA/ENG; D: ESP/ENG; F: GER/ENG; Q: TUR/ENG

EWCM840/S - EWCM860/S - EWCM890/S



Applications

EWCM800 controllers are designed for managing all the compressors in a refrigeration system machine room, by reading the system suction pressure.

Common features

Container: plastic casing

Dimensions: front panel 72x144mm, depth 120mm

Installation: panel mounting, with mounting brackets

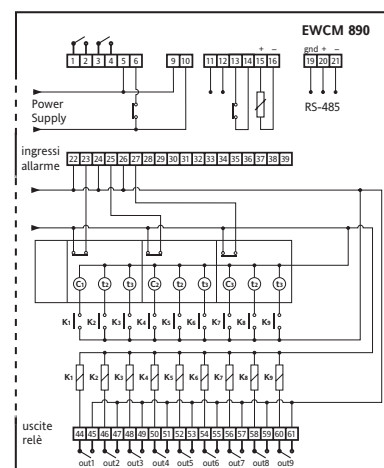
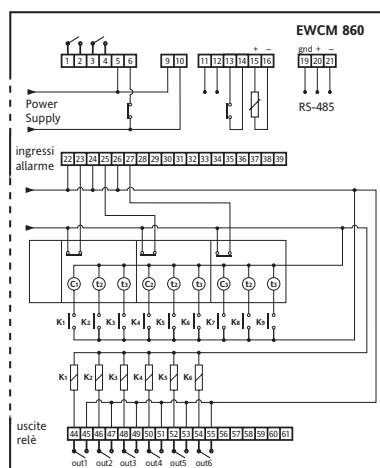
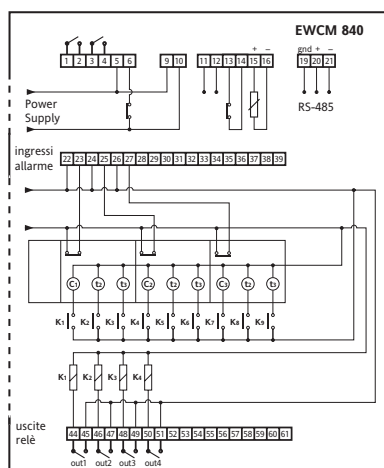
Connections: screw-on with removable terminal block

Data storage: non-volatile memory

Types of freon recognised: 22, R134 A, 502, 404 A, 407 A, 507 A

General features	EWCM840/S	EWCM860/S	EWCM890/S
Display:	4 digits	4 digits	4 digits
Sensor input for low pressure (suction):	4...20 mA/NTC	4...20 mA/NTC	4...20 mA/NTC
Minimum pressure switch:	1 optoisolated voltage input (same voltage as power supply)	1 optoisolated voltage input (same voltage as power supply)	1 optoisolated voltage input (same voltage as power supply)
Alarm output:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Controller fault output:	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~	1 SPST 6(3)A 250V~
Configurable outputs:	4 optoisolated voltage outputs	6 optoisolated voltage outputs	9 optoisolated voltage outputs
Connections:	1 RS-485 output for connection to TelevisSystem	1 RS-485 output for connection to TelevisSystem	1 RS-485 output for connection to TelevisSystem
Resolution:	0.01 bar; 0.1 PSI (°C)	0.01 bar; 0.1 PSI (°C)	0.01 bar; 0.1 PSI (°C)
Accuracy:	better than 0.5% of end of scale	better than 0.5% of end of scale	better than 0.5% of end of scale
Power consumption:	6VA max	6VA max	6VA max
Power supply:	230V~ ±10% 50/60Hz 115V~ ±10% 50/60Hz 24V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 115V~ ±10% 50/60Hz 24V~/~ ±10% 50/60Hz	230V~ ±10% 50/60Hz 115V~ ±10% 50/60Hz 24V~/~ ±10% 50/60Hz

Wiring diagrams



Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
EM8A151700	EWCM840/S pressure	230V~	EM8B251700	EWCM860/S temperature	230V~
EM8A251700	EWCM840/S temperature	230V~	EM8C151750	EWCM890/S pressure	230V~
EM8B151700	EWCM860/S pressure	230V~	EM8C251700	EWCM890/S temperature	230V~



Applications

EWCM900 controllers are designed for the management of compressors and fans in a refrigeration system machine room. The compressors are controlled by reading the system suction pressure, whereas the fans are controlled by monitoring the condensation pressure.

Common features

Container: plastic casing

Installation: panel mounting with mounting brackets

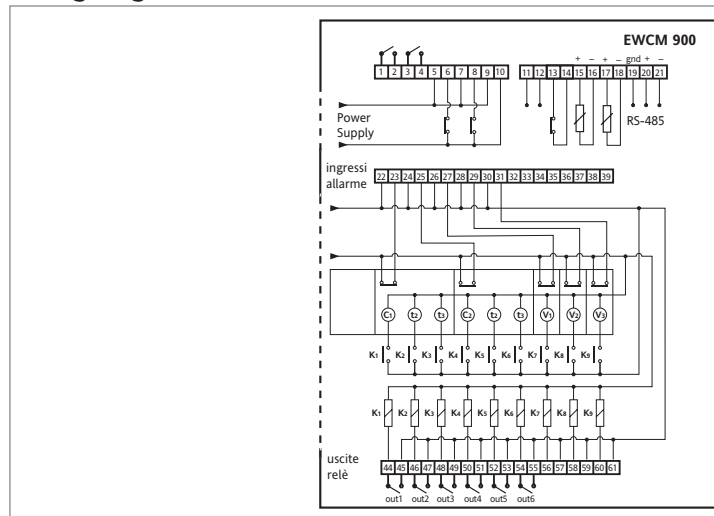
Dimensions: front panel 72x144mm, depth 120mm

Connections: screw-on with removable terminal block

General features	EWCM900 /S
Data storage:	-
Type of refrigerant:	freon 22, R134 A, 502, 404 A, 407 A, 507 A
Low pressure sensor input (suction):	4...20 mA or NTC
High pressure sensor input (delivery):	4...20 mA or NTC
Alarm output:	1 SPST 6(3)A 250V~
Alarms:	11 optoisolated voltage inputs *
Number of configurable outputs:	11 SPST 6(3)A 250V~
Serial port:	1 RS-485 output for connection to TelevisSystem
Controller fault output:	1 SPST 6(3)A 250V~
Delivery pressure switch:	1 optoisolated voltage input *
Suction pressure switch:	1 optoisolated voltage input *
Delivery sensor input:	4...20mA or NTC
Power consumption:	6VA max
Power supply:	• 220V~ ±10% 50/60Hz • 110V~ ±10% 50/60Hz • 12, 24V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Power supply
EM9D151750	EWCM900 /S pressure	230V~
EM9D251700	EWCM900 /S temperature	230V~

EWCM4120-4150-4180



Applications

The EWCM4000 range, which consists of three different controllers, is the ideal solution for small and medium-sized compressor rooms, where ease of use, high control reliability and versatility are essential features for meeting all operational requirements in compressor room management.

Common features

4-digit LED display; front panel: IP65

Container: plastic casing, flame retardant grade UL94-V0

Dimensions: front panel 32x74mm, depth 70mm

Installation: panel mounting with 71x29mm hole

Operating temperature: -5...60°C

Storage temperature: -20...85°C

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

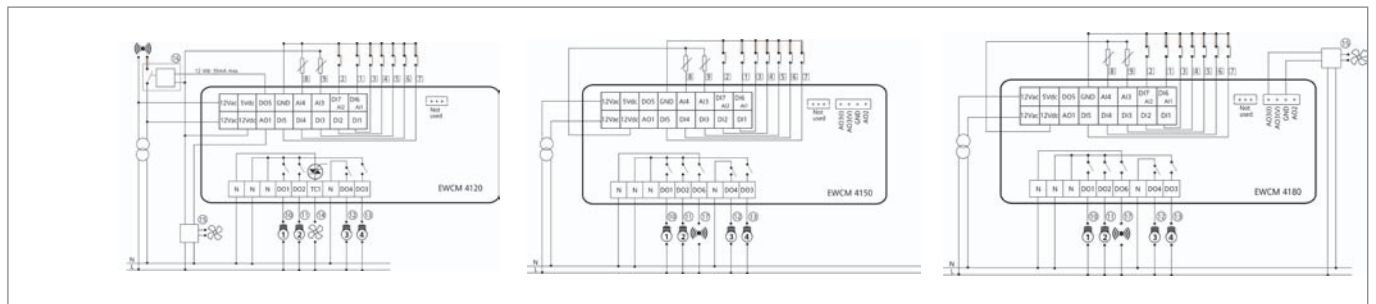
General features	EWCM4120	EWCM4150	EWCM4180
Analogue inputs:	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*	2 4...20mA / ratiometric 0...5V / 0...10V / NTC / D.I.*
Digital inputs:	7 SELV contacts	7 SELV contacts	7 SELV contacts
Analogue 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)

Kits

Code	Description	Details
EM6A12001EL16	EWCM4120/C KIT	1 x EM6A12001EL11 - EWCM4120/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	EWCM4180/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



Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
EM6A12001EL10	EWCM4120 /C	12V~	EM6A22101EL10	EWCM4180 /C	12V~
EM6A12001EL11	EWCM4120 /C with wires	12V~	EM6A22101EL11	EWCM4180 /C with wires	12V~
EM6A22105EL10	EWCM4150 /C	12V~			
EM6A22105EL11	EWCM4150 /C with wires	12V~			



Applications

Controllers for static and ventilated cold rooms with single-phase compressors up to 2 hp for on-board installation. EWRC300 LX and EWRC500 LX are equipped with 3 and 5 configurable relays respectively, for controlling all the accessory users of the room.

Common features

Front panel: IP54

Container: Bayblend FR110

Dimensions: front panel 210x245mm, depth 90mm

Installation: wall

Operating temperature: -5...50°C

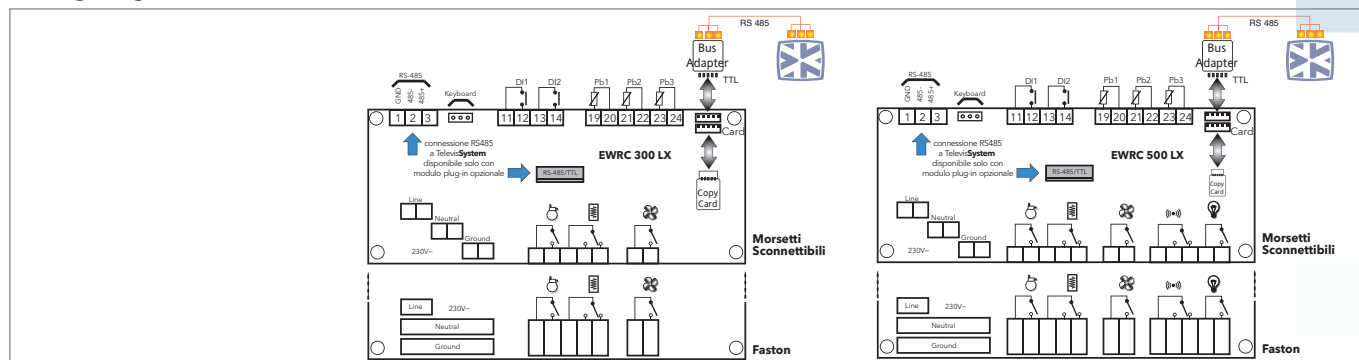
Storage temperature: -20...85°C

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

General features	EWRC300 LX	EWRC500 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 and RS-485 port (with optional plug-in module) for connection to Copy Card, TelevisSystem and systems based on ModBus protocol	TTL and RS-485 port (with optional plug-in module) for connection to Copy Card, 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:	6.3mm faston - removable terminals	6.3mm faston - removable terminals
HACCP:	optional	optional
Clock:	optional	optional
Power switch:	optional	optional

*(selectable by parameter)

Wiring diagrams



Codes

p/n	description	Plus
RCP3HDTX1H710	EWRC300 LX removable	RTC/HACCP

Codes

p/n	description	Plus
RCP3UDTX1H710	EWRC500 LX removable	RTC/HACCP
RCP3UDVX1H710	EWRC500 LX removable	RTC/Main Switch

NOTE: check availability of possible options with sales department

EWRC550 LX - EWRC800 LX



Applications

Controllers with advanced operational features for applications with double compartment cold rooms, with temperature, humidity and fan speed control and serial connection for synchronised defrosting management and the installation of a remote keyboard.

Common features

Front panel: IP54

Container: Bayblend FR110

Dimensions: front panel 210x245mm, depth 90mm

Installation: wall

Operating temperature: -5...50°C

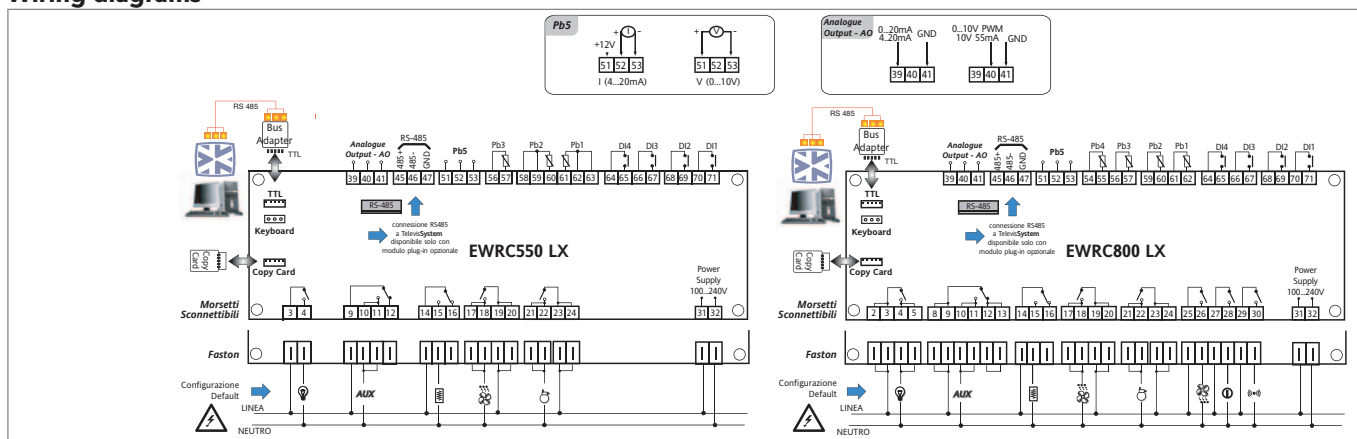
Storage temperature: -20...85°C

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

General features	EWRC550 LX	EWRC800 LX
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:	2 Pt100 + 1 NTC/PTC* + 1 4...20mA/0...10V*	4 NTC/PTC* + 1 4...20mA/0...10V *
Digital inputs:	4 clean contacts at extra low safety voltage	4 clean contacts at extra low safety voltage
Connections:	TTL port for connection to Copy Card and TelevisSystem RS-485 serial port on optional plug-in module	TTL port for connection to Copy Card and TelevisSystem RS-485 serial port on optional plug-in module
Digital outputs:	1 SPST 2Hp 12(12)A 250V~ 1 SPST 1Hp 8(8)A 250V~ 2 SPDT ½Hp 8(4)A 250V~ 1 SPST ½Hp 8(4)A 250V~	3 SPST ½Hp 8(4)A 250V~ 1 SPST 2Hp 12(12)A 250V~ 1 SPDT 1Hp 8(8)A 250V~ 1 SPDT ½Hp 8(4)A 250V~ 2 SPST 1Hp 8(8)A 250V~
Analogue outputs:	1 configurable analogue output (see wiring diagram)	1 configurable analogue output (see wiring diagram)
Measurement range:	-200...800°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:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz
Power consumption:	15W max	15W max
Power terminals:	6.3mm faston - removable terminals	6.3mm faston - removable terminals
HACCP:	optional	optional
Clock:	present	present
Power switch:	optional	optional

*(selectable by parameter)

Wiring diagrams



Codes

p/n	descr.	Power supply	p/n	descr.	Power supply
RCEMIPTX1HH10	EWRC550 LX Pt100	100...240V~	RCE48DTX1HH10	EWRC800 LX	100...240V~



Applications

Controllers with advanced operational features for applications with double compartment cold rooms, with temperature, humidity, and fan speed control for the management of curing and drying processes.

Common features

Front panel: IP54

Container: Bayblend FR110

Dimensions: front panel 210x245mm, depth 90mm

Installation: wall

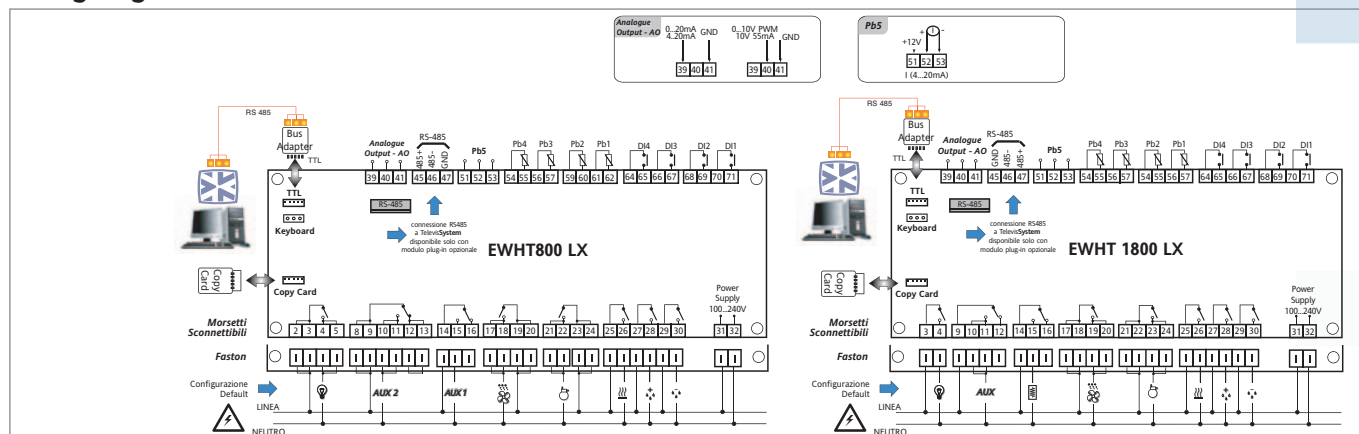
Storage temperature: -20...85°C

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

General features	EWHT800 LX	EWHT1800 LX
Display range:	- NTC probe*: -50.0...110.0°C - PTC probe*: -55.0...150.0°C 4...20mA input: 0...2000	- NTC probe: -50.0...110.0°C 0...10V/4...20mA input: 0...2000
Display with no decimal point*:	double display: 3 digits + sign / 4 digits	0...2000 graphic LCD 64x128 pixels, backlit
Analogue inputs:	4 x NTC / PTC* + 1 current input 4...20mA	4 x NTC* + 1 input 0...10V/4...20mA *
Digital inputs:	4 clean contacts at extra low safety voltage*	4 clean contacts at extra low safety voltage*
Connections:	TTL port for connection to CopyCard and TelevisSystem RS-485 serial port on optional plug-in module	TTL port for connection to CopyCard and TelevisSystem RS-485 serial port on optional plug-in module
Digital outputs:	3 SPST ½ hp 8(4)A 250V~ 1 SPDT ½ hp 8(4)A 250V~ 2 SPST 1hp 8(8)A 250V~ 1 SPDT 1hp 8(8)A 250V~ 1 SPST 2 hp 12(12)A 250V~	2 SPST 1Hp 8(8)A 250V~ 1 SPDT 1Hp 8(8)A 250V~ 1 SPDT ½ Hp 8(4)A 250V~ 1 SPDT 2 Hp 12(12)A 250V~ 3 SPST ½ Hp 8(4)A 250V~
Analogue outputs:	1 configurable analogue output (see wiring diagram)	1 configurable analogue output (see wiring diagram)
Operating temperature:	-5...50°C	-5...45°C
Accuracy:	according to probe used	according to probe used
Resolution:	according to probe used	according to probe used
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz
Power consumption:	15W max	15W max
Power terminals:	6.3mm faston - removable terminals	6.3mm faston - removable terminals
HACCP:	present	present
Clock:	present	present
Relative humidity control:	present	present
Data logger:	not present	present

*(selectable by parameter)

Wiring diagrams



Codes

p/n	description	Power supply
HTE48DTX1HH10	EWHT800 LX	100...240V~

Codes

p/n	description	Power supply
HTF48DTU1GH00	EWHT1800 LX	100...240V~



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.

Common features

Container: PC+ABS plastic resin casing, UL94 V-0

Operating temperature: -5...55°C

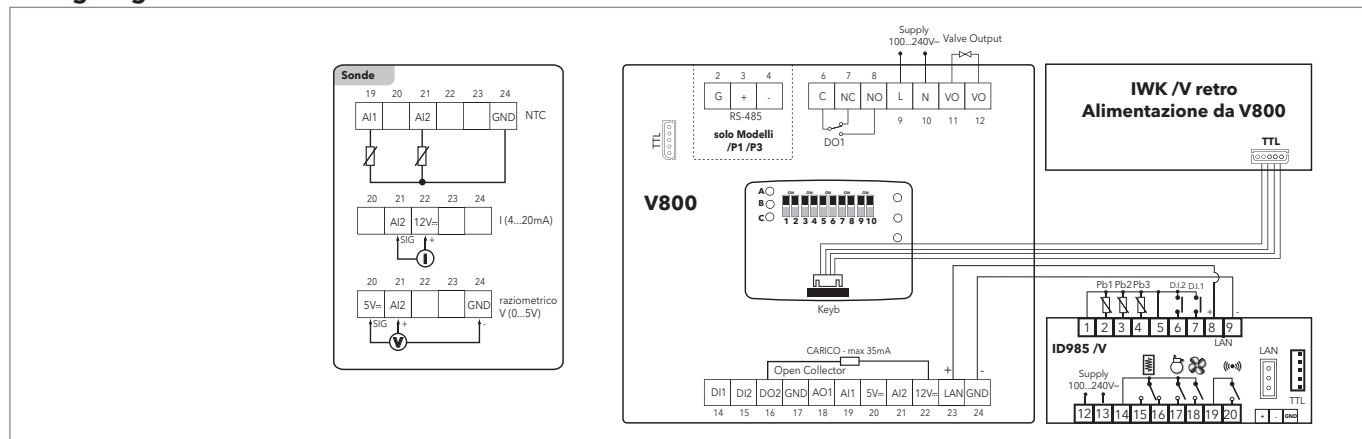
Storage temperature: -20...85°C

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

General features	V800	ID985/V	IWK /V
Front panel:	-	IP65	IP65
Dimensions:	front panel 70.2x87mm, depth 61.6mm	front panel 74x32mm, depth 60mm	front panel 74x32mm, depth 30mm
Mounting:	on DIN rail	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 ID985/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



Codes

p\n
see next page



Applications

Eliwell supplies two kits including controllers, probes and/or configuration software to offer a complete range and allow the installer to carry out the installation process quickly.

Models

Code	Description	Details
EVD2A43BSC000	V800/P1	230V~ valve control on-board RS-485
EVD2A43BXC000	V800/P2	230V~ valve control
EVD2A53BSC000	V800/P3	230V= valve control on-board RS-485
EVD2A53BXC000	V800/P4	230V= valve control
ID34DR4SCDH00	ID985 /V	Electronic controller with V800 driver control via LAN serial port
WK1400100N000	IWK /V	Remote terminal for parameter config., displ. I/O, alarms, etc.

Kits

Code	Description	Details
EVK2A43BXC010	Standard Kit	Includes: • 1 x ID985 /V • 1 x V800/P2 • 1 x 'FAST' NTC probe (SN8P0X3002) • 1 x ratiometric probe (TD400030)
EVK2A43BXC020	Starter Kit	Includes: • 1 x ID985 /V • 1 x V800/P2 • 1 x 'FAST' NTC probe (SN8P0X3002) • 1 x ratiometric probe (TD400030) • 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

PULSE valve compatibility*

Model		Power supply
AKV10	Danfoss	240V~50Hz or 240V=
AKV15	Danfoss	240V~50Hz or 240V=
AKV20	Danfoss	240V~50Hz or 240V=
EX2	Alco	240V~50Hz
HP130	Parker	220V~50Hz
DS1120	Parker	220V~50Hz

*if using other valves, contact Eliwell Technical Support



Applications

The FASEC33 and FASEC43 (C) instruments are designed for speed control and are particularly suited to applications on fans, on refrigeration units for the condensation function.

FASEC53 is a manual fan regulator suitable for applications on refrigeration units.

Common features

Front panel: IP20

Container: flame retardant NORYL plastic casing

Dimensions: front panel 48x96mm, depth 96mm excluding baseboard

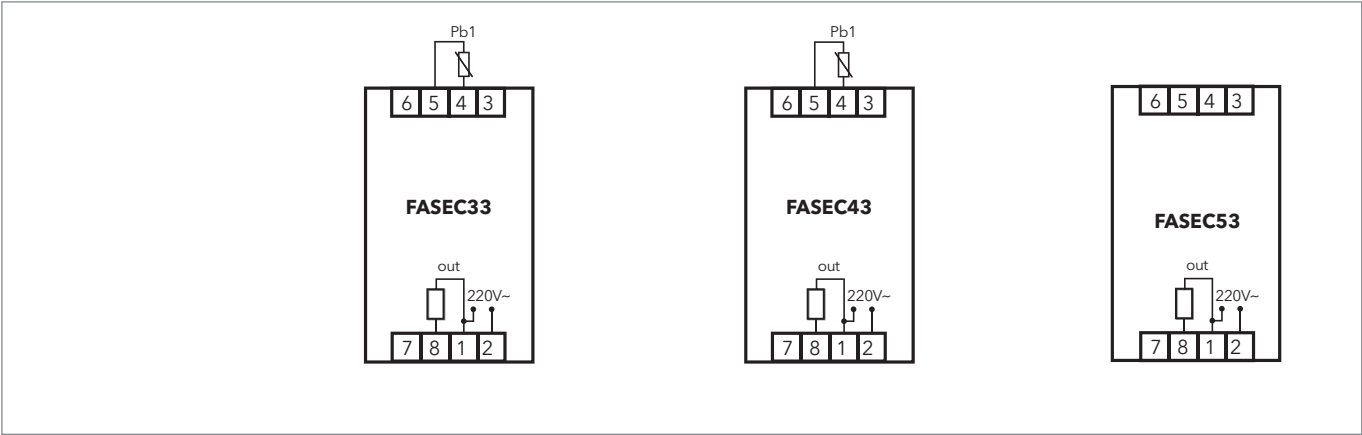
Installation: panel mounting with 45x92mm hole

Operating temperature: -5...60°C

Storage temperature: -30...75°C

General features	FASEC33	FASEC43 (C)	FASEC53
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 phase capacity step	proportional phase capacity step	manual phase capacity step
Type of function:	for condensation	for evaporation	-
Power supply:	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz	220V~ ±10% 50/60Hz

Wiring diagrams



Codes

p/n	description	Power supply	p/n	description	Power supply
FA53370000	FASEC33	220V~	FA55370000	FASEC53	220V~
FA54370000	FASEC43	220V~			



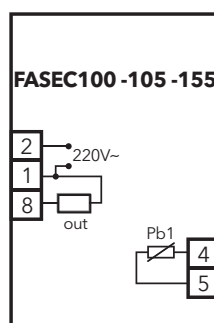
FASEC100 units are automatic fan regulators suitable for applications on refrigeration units for both evaporation and condensation.

Installation: panel mounting or back panel mounting (FASEC100),
wall mounting (FASEC105, 155)

Storage temperature: -30...75°C

Operating temperature: -5...60°C

Wiring diagrams



Codes			Codes		
p/n	description	Power supply	p/n	description	Power supply
FA100780	FASEC100	220V~	FA155700	FASEC155	220V~
FA105780	FASEC105	220V~			



Applications

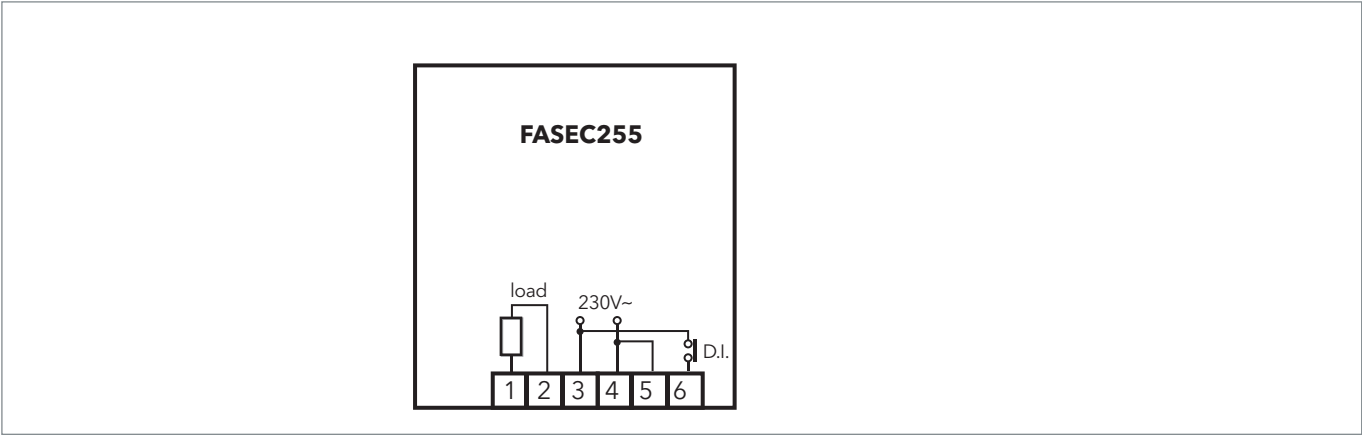
The FASEC255 is an electronic instrument designed for manually controlling the speed of single-phase fans. It is suitable for applications on refrigeration units for both evaporation and condensation.

Common features

- Installation: wall
- Operating temperature: -5...40°C
- Storage temperature: -30...75°C

General features	FASEC255
Container:	plastic GEWISS GW44005
Front panel:	IP55
Connections:	on screw-on terminal block
Digital input:	voltage to 230V~
Setting output:	TRIAC 2.5A max
Type of setting:	proportional phase capacity step
Power consumption:	1.5VA max
Power supply:	230V~ ±10% 50/60Hz

Wiring diagrams



Codes

p/n	description	Power supply
FA25500700	FASEC255	230V~



Applications

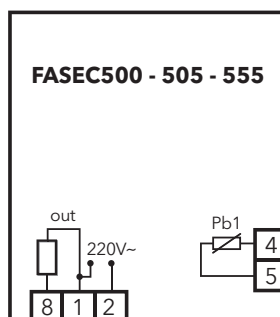
FASEC500 units are automatic fan regulators suitable for applications on refrigeration units for both evaporation and condensation.

Common features

Installation: panel mounting or back panel mounting (FASEC500), wall mounting (FASEC505, 555) Storage temperature: -30...75°C
Operating temperature: -5...60°C

General features	FASEC500	FASEC505	FASEC555
Container:	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

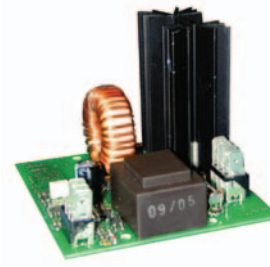
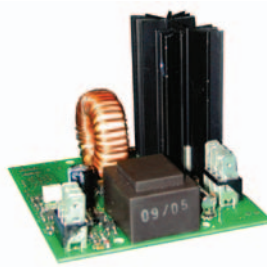
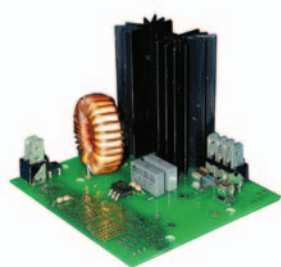
Wiring diagrams



Codes

p/n	description	Power supply	p/n	description	Power supply
FA500780	FASEC500	220V~	FA555700	FASEC555	220V~
FA505780	FASEC505	220V~			

CFS02...08/V/I Single-phase fan regulators



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.

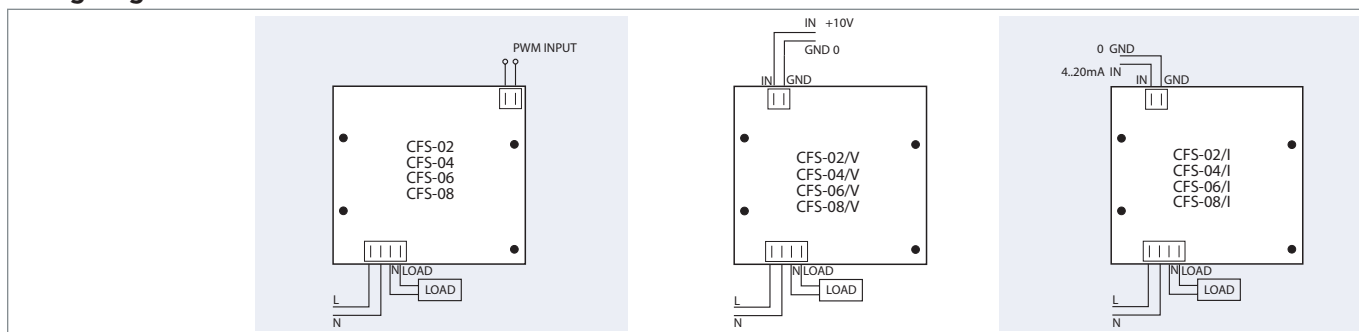
Specifications

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

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

General features	CFS02...08	CFS02...08/V	CFS02...08/I
Dimensions:	CFS02: 90.0x83.0x38.0mm(LxDxH)+1.6mm(PCB) CFS04: 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% 50/60Hz	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Rated current at 40°C:	2.5A - CFS02 model 5A - CFS04 model 7A - CFS06 model 9A - CFS08 model	2.5A - CFS02/V model 5A - CFS04/V model 7A - CFS06/V model 9A - CFS08/V model	2.5A - CFS02/I model 5A - CFS04/I model 7A - CFS06/I model 9A - CFS08/I model
Rated current at 50°C:	2A - CFS02 model 4A - CFS04 model 6A - CFS06 model 8A - CFS08 model	2A - CFS02/V model 4A - CFS04/V model 6A - CFS06/V model 8A - CFS08/V model	2A - CFS02/I model 4A - CFS04/I model 6A - CFS06/I model 8A - CFS08/I model
Type of control signal:	PWM	0...10V=	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
Ambient humidity for operation and storage:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)

Wiring diagrams



Codes

p/n	description
CF10x11011000	CFS0x
CF10x21011000	CFS0x /V
x=2,4,6,8	

Codes

p/n	description
CF10x31011000	CFS0x /I
x=2,4,6,8	



Applications

WM253 units are manual fan regulators suitable for refrigeration and air conditioning systems.

Specifications

Front panel: IP50

Container: flame retardant ABS plastic with snap closure

Dimensions: front panel 75x108mm, depth 49mm

Installation: wall mounting, fixing screws provided

Operating temperature: -5...55°C

Storage temperature: -30...75°C

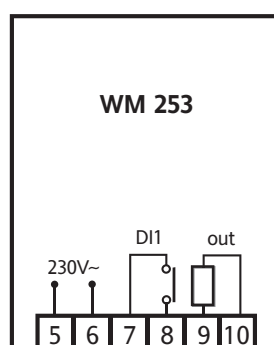
Ambient operation and storage humidity: 10...90% RH (non-condensing)

General features

WM253

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 phase capacity step
Power consumption:	3VA max
Power supply:	230V~ ±10% 50Hz

Wiring diagrams



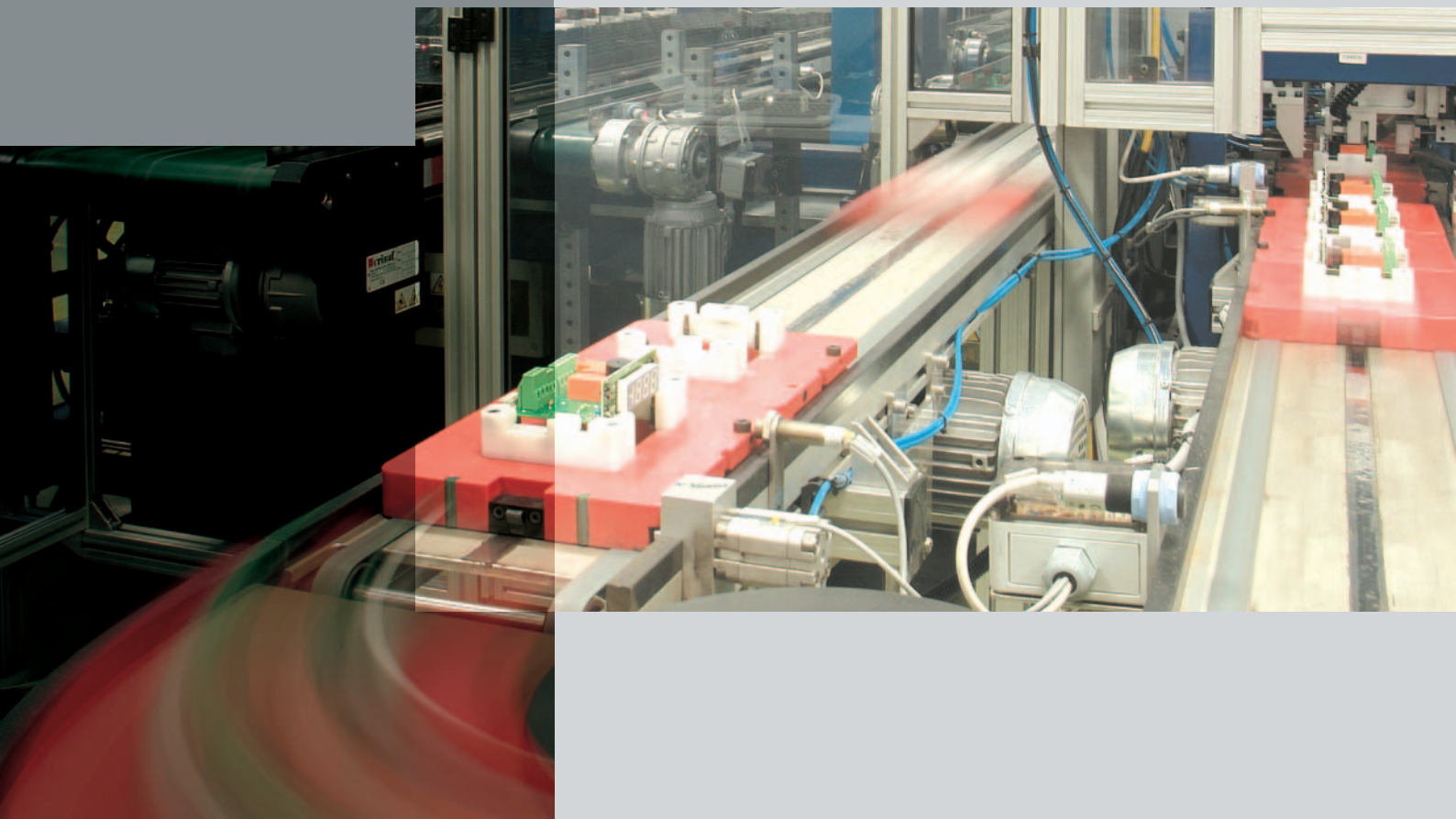
Codes

p/n	description	Probes	Power supply
VM253710	WM253 Manual	-	230V~



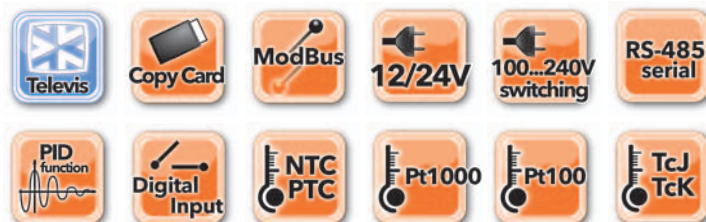
Industrial processes

The Eliwell universal controller series is the ideal solution for the measurement of all measurable quantities in commercial refrigeration and light industry. The new Eliwell products are ideal for all industrial applications requiring high precision temperature control, including the moulding of plastic materials, packaging and process control in the transformation of raw materials. The product line is able to satisfy all demands, from the simplest applications - which still require the precision, reliability and economical installation benefits offered by electronics - to the most complex, which require auxiliary functions and advanced management features. Reliability and versatility are the factors that provide the right answers to all application needs. The new Eliwell thermoregulators have made flexibility their strong point: the extensive range of possible applications meets a wide variety of requirements with regard to power supply, signals and connections, and Eliwell's experience in thermoregulation has resulted in the development of a highly configurable product.



EW4820 (SSR)	... C2
EW4822 (SSR)	... C2
EW7220	... C3
EW7222	... C3
DR4020	... C4
DR4022	... C4
IC901 (/A)	... C5
IC902 (/A)	... C6
IC912	... C7
IC912 LX	... C8
IC915	... C9
IC915 LX	... C10
IC917 PID (SSR)	... C11
EWTS950 LX	... C12
EWTS990 LX	... C12

EW4820 (SSR) - EW4822 (SSR)



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

Front panel: IP65

Container: PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film

Dimensions: front panel 48x48mm, depth 113mm

Installation: panel mounting with 45x45 mm (+0.2/-0.1 mm) drilling template

Operating temperature: -5...55°C

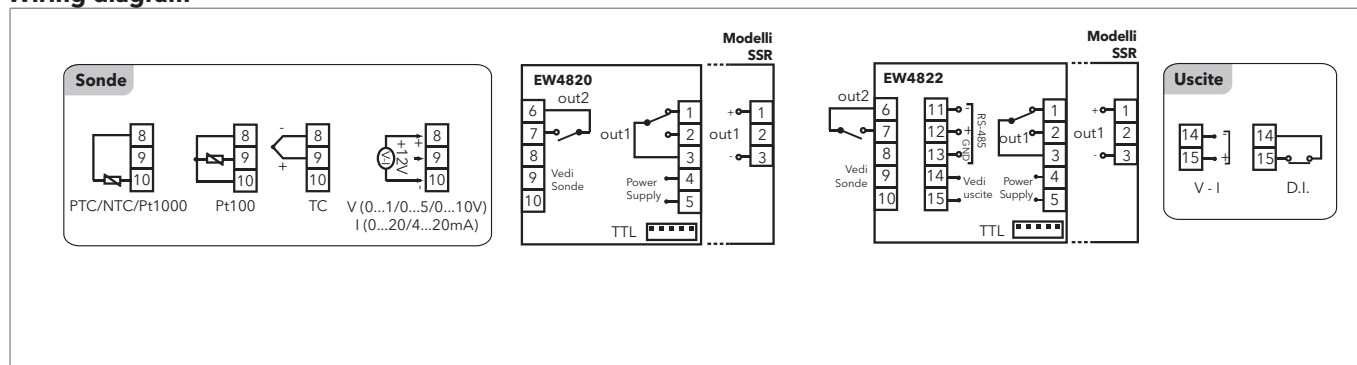
Storage temperature: -20...85°C

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

General features	EW4820 (SSR)	EW4822 (SSR)
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 Analogue Inputs table)
Digital inputs:	not available	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card or TelevisSystem	TTL port for connection to Copy Card or TelevisSystem + internal RS-485 for connection to systems with ModBus protocol.
Digital outputs:	1 SPDT 3A 250V~ + 1 SPST 2A 250V~ Standard models Vout = 0...12Vc / Imax = 0...15mA / Vmin = 7.5V	1 SPDT 3A 250V~ + 1 SPST 2A 250V~ Standard models Vout = 0...12Vc / Imax = 0...15mA / Vmin = 7.5V
Analogue output:	not available	V: 0...1V, 0...5V, 0...10V I: 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:	• 2.45W for model 12...24V~/12...36V~ • 2.40W for model 100...240V~	• 2.45W for model 12...24V~/12...36V~ • 2.40W for model 100...240V~
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 diagram

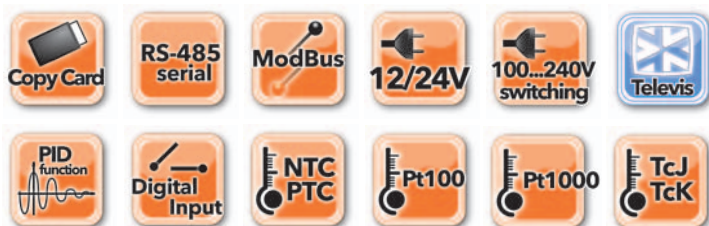


Codes

p/n	description	Probe
E481BP0XBH700	EW4820 Universal	Pt100
E481BI0XBH700	EW4820 Universal	4...20mA
E481SI0XBN700	EW4820 SSR output	4...20mA
E481SP0XBH700	EW4820 SSR output	Pt100

Codes

p/n	description	Probe
E481BPISBH700	EW4822 Universal	Pt100
E481BIISBH700	EW4822 Universal	4...20mA
E481SPIXBH700	EW4822 SSR output	Pt100



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

Front panel: IP65

Container: PC+ABS UL94 V-0 resin plastic casing, switch keys with adhesive polycarbonate film

Dimensions: front panel 72x72mm, depth 80mm

Installation: panel mounting with 67x67mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

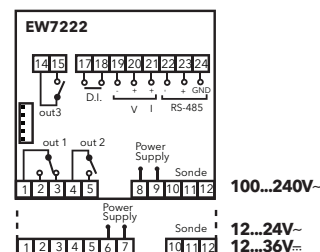
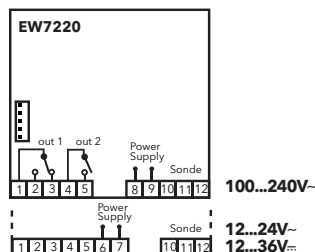
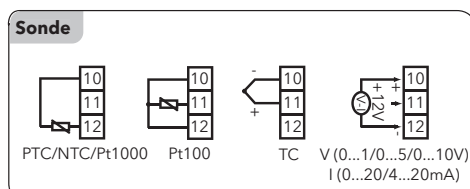
Storage temperature: -20...85°C

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

General features	EW7220	EW7222
Display:	no decimal point * 2 4-digit displays + sign	no decimal point * 2 4-digit displays + sign
Analogue inputs:	1 input*(see Analogue Inputs table)	1 input*(see Analogue Inputs table)
Digital inputs:	not available	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card, TelevisSystem or systems with ModBus protocol	TTL port and internal RS-485 for connection to Copy Card, TelevisSystem or systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~ 1 SPST 5A 250V~
Analogue output:	not available	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:	3W max	3W 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



Codes

p/n	descr.	Probe
E7212E0XBH700	EW7220	Pt100
E7212A0XBD700	EW7220	TC
E7212I0XBH700	EW7220	4...20mA
E7212N0XBD700	EW7220	NTC

Codes

p/n	descr.	Probe
E7213PASBH700	EW7222 Universal-RS-485	Pt100
E7213IASBH700	EW7222	4...20 mA

DR4020 - DR4022



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

Front panel: IP65

Container: plastic casing with 4 DIN modules

Dimensions: front panel 70x85mm, depth 61mm

Installation: on DIN rail (Omega 3) or panel mounting, with 70x45mm (+0.2/-0.1mm) drilling template

Operating temperature: -5...55°C

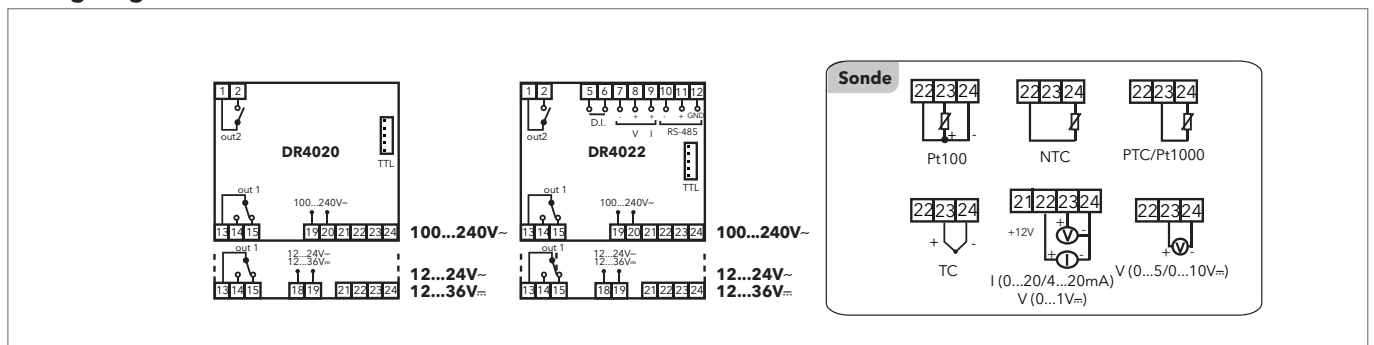
Storage temperature: -20...85°C

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

General features	DR4020	DR4022
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	1 clean contact at extra low safety voltage
Connections:	TTL port for connection to Copy Card, Televis ^{System} and systems with ModBus protocol	TTL port and internal RS-485 for connection to Copy Card, Televis ^{System} and systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~	1 SPDT 3A 250V~ + 1 SPST 2A 250V~
Analogue output:	not available	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 diagram



Codes

p/n	description	Probe
E4D12E0XBH700	DR4020	Pt100
E4D12A0XBD700	DR4020	TCJ
E4D12I0XBN700	DR4020	4...20mA
E4D12N0XBH700	DR4020	NTC

Codes

p/n	descr.	Probe
E4D12EASBH700	DR4022	Pt100
E4D12NASBH700	DR4022	NTC
E4D12AASBD700	DR4022	TCJ



Applications

IC901 controllers are one-step devices which can be used for both heating and cooling applications.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template

Operating temperature: -5...55°C

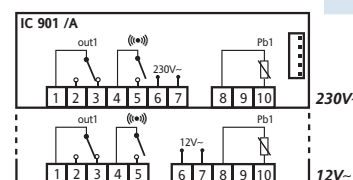
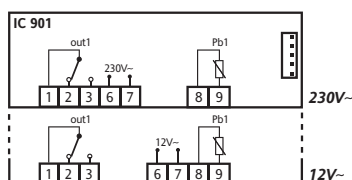
Storage temperature: -30...85°C

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

General features	IC901	IC901/A
Display range:	- NTC probe: -50...99°C - PTC probe: -50...99°C	- NTC probe: -50...99°C - PTC probe: -50...99°C
Display:	no decimal point * 2 digits + sign	no decimal point * 2 digits + sign
Analogue inputs:	1 PTC or NTC *	1 PTC or NTC *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~ or 1 SPDT 16A 250V~	1 SPDT 8(3)A 250V~ 1 SPST 8(3)A 250V~ or 1 SPDT 15A 1hp 250V~
Measurement range:	from -50 to 99°C	from -50 to 99°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	0.1 or 1°C	0.1 or 1°C
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~, 12/24V~/±10% 50/60Hz 230V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz 230V~ ±10% 50/60Hz
Alarm:	not available	present

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Relay	Probe	Power supply
IC11C00TCA700	IC901 Cooling	8A	PTC	230V
IC11C00THA700	IC901 Heating	8A	PTC	230V
IC16C00TCA700	IC901 Cooling	16A	PTC	230V
IC16C00THA700	IC901 Heating	16A	PTC	230V

Codes

p/n	description	Relay	Probe	Power supply
IC11C00TCA400	IC901 Cooling	8A	PTC	12/24V~/±10%
IC1BC00TCA700	IC901 Cooling	8/15A	PTC	230V



Applications

IC902 controllers are one-step devices which can be used for both heating and cooling applications.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template

Operating temperature: -5...55°C

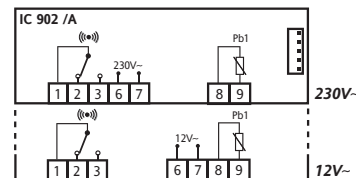
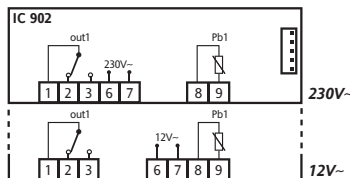
Storage temperature: -30...85°C

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

General features	IC902	IC902/A
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:	1 PTC or NTC *	1 PTC or NTC *
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~
Measurement range:	from -50 to 140°C	from -50 to 99°C
Accuracy:	better than 0.5% of end of scale +1 digit	better than 0.5% of end of scale +1 digit
Resolution:	0.1 or 1°C	0.1 or 1°C
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~, 12/24V~/±10% 50/60Hz 230V~ ±10% 50/60Hz	12V~ ±10% 50/60Hz 230V~ ±10% 50/60Hz
Alarm:	not available	present

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Relay	Probe	Power supply
IC11C00TCD700	IC902 Cooling	8A	PTC	230V
IC11C00THD700	IC902 Heating	8A	PTC	230V

Codes

p/n	description	Relay	Probe	Power supply
IC11C00TCD400	IC902 Cooling	8A	PTC	12/24V~/±



Applications

IC912 controllers are one-step electronic devices, used to control temperature, relative humidity and pressure.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template (+0.2/-0.1mm)

Operating temperature: -5...55°C

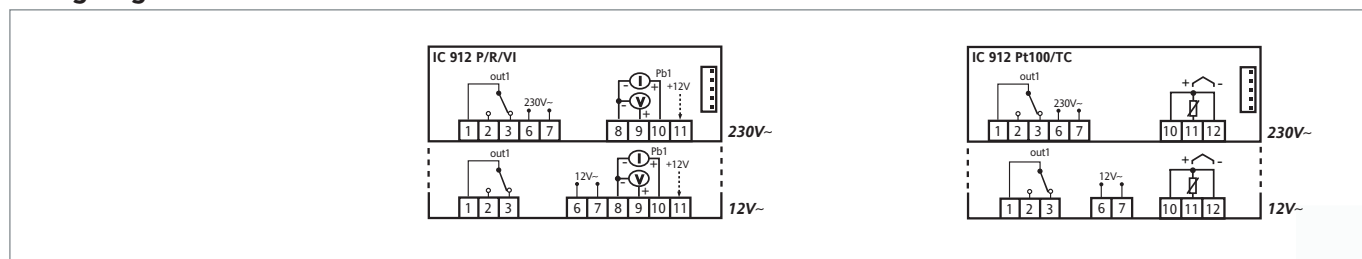
Storage temperature: -30...85°C

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

General features	IC912 P/R/V-I	IC912 TC/Pt100
Display range:	-99...100 * -99.9...100.0 * 999...1000 *	- 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
Analogue inputs:	1 V-I (0...1V, 0...5V, 0...10V, 0...20mA, 4...20mA)*	1 Pt100 or 1 TcJ/TcK (according to model)
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~
Measurement range:	from -999 to 1000	from -150 to 1350°C
Accuracy:	better than 0.5% of end of scale + 1 digit	<u>Pt100:</u> 0.5% for whole scale + 1 digit, 0.2% from -150 to 300°C <u>TcJ:</u> 0.4% for whole scale + 1 digit <u>TcK:</u> 0.5% for whole scale + 1 digit, 0.3% from -40 to 800°C
Resolution:	0.1 or 1°C *	<u>Pt100:</u> 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over <u>TcJ:</u> 0.1°C (0.1°F) up to 199.9°C, 1°C (1°F) over <u>TcK:</u> 0.1°C (0.1°F)
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~ / 12...24V~/= / 24V~ ±10% 50/60Hz 110...115V~ / 220...230V~±10% 50/60Hz	12V~ ±10% 50/60Hz 230V~ ±10% 50/60Hz
Alarm:	optional	present

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Probe	Power supply
IC11J00THD700	IC912 temperature	TC/Pt100	230V~
IC11J00THD400	IC912 temperature	TC/Pt100	12...24V~
IR11I00TUD700	IC912 humidity	4...20mA	230V~

Codes

p/n	description	Probe	Power supply
IP11A00TRD700	IC912 pressure	EWPA 007	230V~
IP11B00TRD700	IC912 pressure	EWPA 030	230V~
IC11I00TRN700	IC912 neutral	4...20mA	230V~
IC11I00TRN400	IC912 neutral	4...20mA	12...24V~



Applications

IC912 LX controllers are electronic one-step devices used to control temperature, relative humidity and pressure, and are compatible with Televis**System** and monitoring systems with ModBus protocol.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template

Operating temperature: -5...55°C

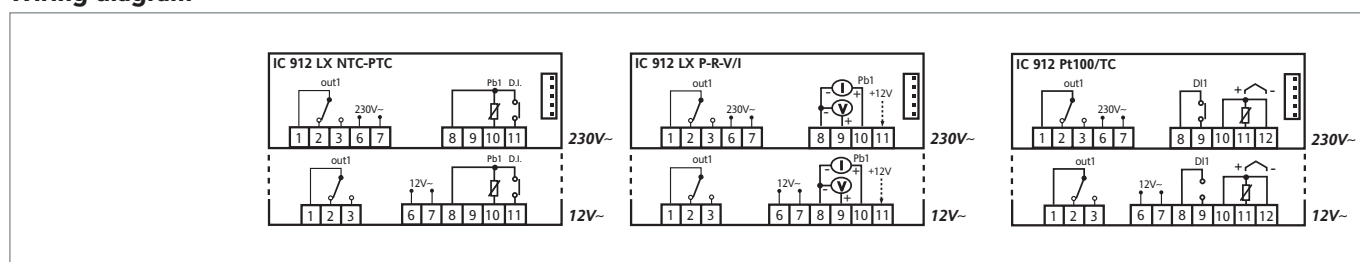
Storage temperature: -30...85°C

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

General features	IC912 LX NTC/PTC	IC912 LX P/R-V-I	IC912 LX TC/Pt100
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: -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 Copy Card, Televis System and systems with ModBus protocol	TTL port for connection to Copy Card, Televis System and systems with ModBus protocol	TTL port for connection to Copy Card, Televis System and systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~	1 SPDT 8(3)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°F) over TcK: 0.1°C (0.1°F)
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~±10% 50/60Hz	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~±10% 50/60Hz	12V~ ±10% 50/60Hz 230V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Probe	Power supply
IC11J10XHD700	IC912 LX temperature	TC/Pt100	230V~
IC11C10XHD700	IC912 LX temperature	PTC	230V~
IR11I00XUD700	IC912 LX humidity	4...20mA	230V~

Codes

p/n	description	Probe	Power supply
IP11I00XRD700	IC912 LX pressure	4...20mA	230V~
IC11I00XRN700	IC912 LX neutral	4...20mA	230V~



Applications

IC915 controllers are electronic two-step devices, either dependent or independent or with neutral zone, used to control temperature, relative humidity and pressure.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template

(+0.2/-0.1mm)

Operating temperature: -5...55°C

Storage temperature: -30...85°C

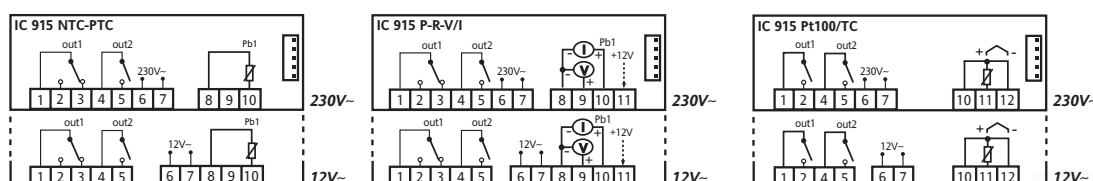
Ambient humidity for operation and storage: 10...90% RH (non-condensing)

Soft Start function present

General features	IC915 NTC/PTC	IC915 LX P/R/V-I	IC915 LX TC/Pt100
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: -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
Connections:	TTL port for connection to Copy Card	TTL port for connection to Copy Card	TTL port for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)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 °C	0.1 or 1°C *	Pt100: 0.1°C (0.1°F) up to 199.9°C 1°C (1°F) over TcJ: 0.1°C (0.1°F) up to 199.9°C (1°F) over TcK: 0.1°C (0.1°F)
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz
Alarm:	optional	optional	optional

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Probe	Power supply
IC12C00TCH700	IC915 temperature NTC/PTC		230V~
IC12C00TCD400	IC915 temperature NTC/PTC		12...24V~
IC12J00THD700	IC915 temperature TC/Pt100		230V~
IC12J00THD400	IC915 temperature TC/Pt100		12...24V~

Codes

p/n	description	Probe	Power supply
IR12I00TBD700	IC915 humidity	4...20mA	230V~
IP12A00TRD700	IC915 pressure	EWPA 007	230V~
IP12B00TRD700	IC915 pressure	EWPA 030	230V~
IC12I00TRN700	IC915 neutral	4...20mA	230V~



Applications

IC915 LX controllers are electronic two-step devices, either dependent or independent or with neutral zone, used to control temperature, relative humidity and pressure and compatible with Televis**System** and monitoring systems with ModBus protocol.

Common features

Front panel: IP65

Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 59mm

Installation: panel mounting with 71x29mm drilling template

(+0.2/-0.1mm)

Operating temperature: -5...55°C

Storage temperature: -30...85°C

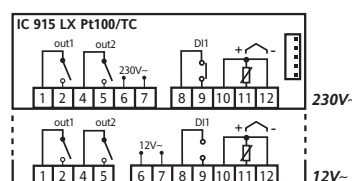
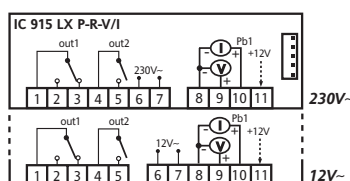
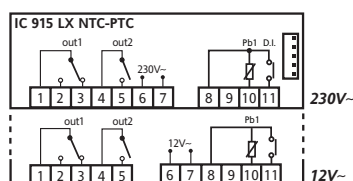
Ambient humidity for operation and storage: 10...90% RH (non-condensing)

Soft Start function present

General features	IC915 LX NTC/PTC	IC915 LX P/R-V-I	IC915 LX TC/Pt100
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: -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 Copy Card, Televis System and systems with ModBus protocol	TTL port for connection to Copy Card, Televis System and systems with ModBus protocol	TTL port for connection to Copy Card, Televis System and systems with ModBus protocol
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 250V~ + 1 SPDT 8(3)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°F) over TcK: 0.1°C (0.1°F)
Power consumption:	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
Power supply:	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz	12V~/12...24V~/24V~ ±10% 50/60Hz 110...115V~/220...230V~ ±10% 50/60Hz

*(selectable by parameter)

Wiring diagram



Codes

p/n	description	Probe	Power supply
IC12JI0XHD700	IC915 LX temperature	TC/Pt100	230V~
IC12CI0XCD700	IC915 LX temperature	NTC/PTC	230V~
IR12I00XBD700	IC915 LX humidity	4...20mA	230V~

Codes

p/n	description	Probe	Power supply
IP12I00XRD700	IC915 LX pressure	4...20mA	230V~
IC12I00XRN700	IC915 LX neutral	4...20mA	230V~



Applications

IC917 controllers are electronic two-step devices, either dependent or independent, with ON/OFF action, PD, PID, Soft Start function and Autotuning.

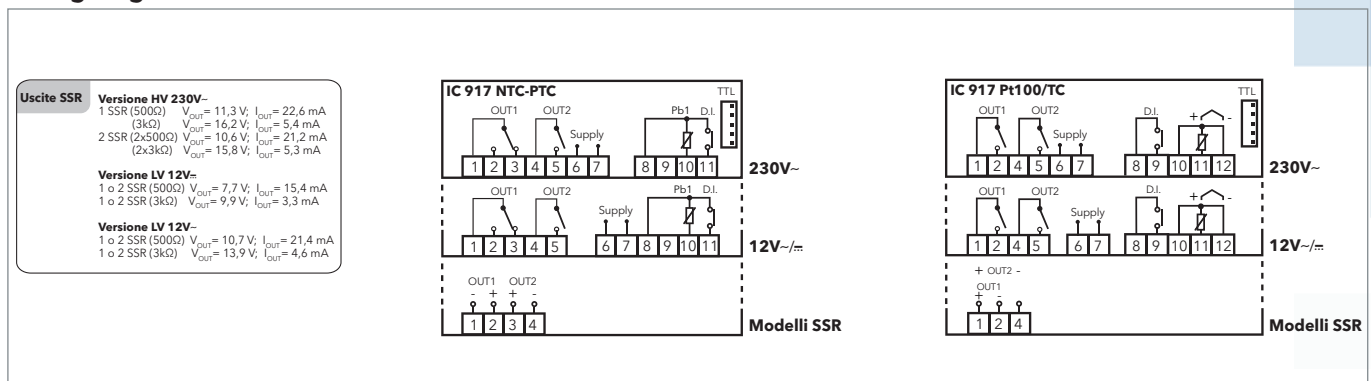
Common features

Front panel: IP65	(+0.2/-0.1mm)
Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys	Operating temperature: -5...55°C
Dimensions: front panel 74x32mm, depth 59mm	Storage temperature: -30...85°C
Installation: panel mounting with 71x29mm drilling template	Ambient humidity for operation and storage: 10...90% RH (non-condensing)
	Soft Start function present

General features	IC917/PID NTC/PTC (SSR)	IC917/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~	2 SPST 8(3)A 1/2hp 250V~
	Standard models see Wiring diagram	Standard models 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 model 12V~ 3W for model 230V~	1.5W for model 12V~ 3W for model 230V~
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 diagram



Codes

p/n	description	Probe	Power supply
IC12DI0TMD700	IC917/PID	NTC/PTC	230V~
IC12ZI0TMD700	IC917/PID	TC/Pt100	230V~

Codes

p/n	description	Probe	Power supply
IC1RDI0TMD700	IC917/PID SSR	NTC/PTC	230V~
IC1RZI0TMD700	IC917/PID SSR	TC/Pt100	230V~

EWTS950 LX - EWTS990 LX



Applications

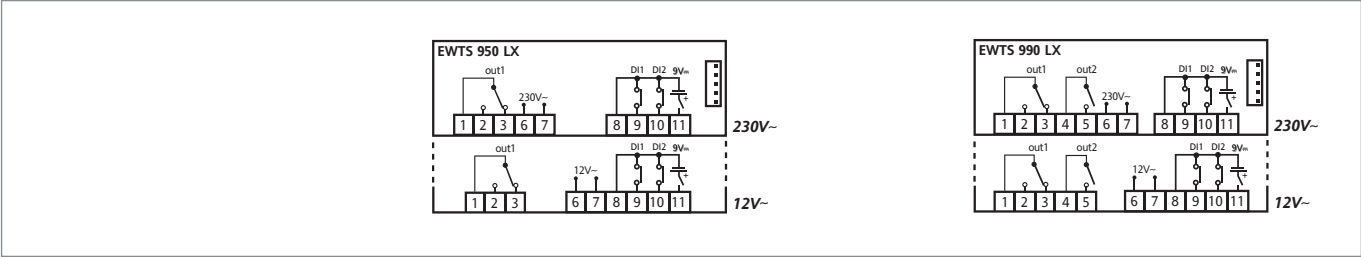
The Eliwell series of digital timers is the ideal measuring solution for all measurable quantities in commercial refrigeration and light industry. The range, which consists of 2 different models, is used in all applications requiring precision control of processing stages and the management of functions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

Common features

Front panel: IP65	Installation: panel mounting with 71x29 mm (+0.2/-0.1 mm) drilling template
Container: PC+ABS UL94 V-0 plastic resin casing, polycarbonate window, thermoplastic resin keys	Operating temperature: -5...55°C
Dimensions: front panel 74x32mm, depth 59mm	Storage temperature: -30...85°C
	Ambient humidity for operation and storage: 10...90% RH (non-condensing)

General features	EWTS950 LX	EWTS990 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 TelevisSystem	TTL port for connection to Copy Card and TelevisSystem
Digital outputs:	1 SPDT 8(3)A 1/2hp 250V~	1 SPDT 8(3)A 1/2hp 250V~ + 1 SPST 8(3)A 1/2hp 250V~
Accuracy:	3.6 sec/h	3.6 sec/h
Power consumption:	3VA max	3VA max
Power supply:	12V~/= oppure 230V~ ±10% 50/60Hz	12V~/= oppure 230V~ ±10% 50/60Hz
External battery:	- power supply 9V= - battery duration: depends on model, with 9V~/10mA/h battery duration 1h - instrument absorption with power supply from 10mA battery	- power supply 9V= - battery duration: depends on model, with 9V~/10mA/h battery duration 1h - instrument absorption with power supply from 10mA battery

Wiring diagram



Codes

p/n	description	Power supply
ET010I0XTT700	EWTS950 LX	230V~

Codes

p/n	description	Power supply
ET020I0XTT700	EWTS990 LX	230V~

eliwell

Electromechanical controllers

The Ranco series of electromechanical controllers for temperature, pressure and humidity is suitable for applications in commercial refrigeration. They are available with an adjustable or fixed setpoint, as requested by the customer, and have been approved by a number of international organisations. They are renowned throughout the market for their reliability and high quality construction.



O16 - O52 thermostats for cooling and ambient air	... D2
O16 - O52 adjustable single pressure controls	... D4
O17 adjustable dual pressure controls	... D5
P30	... D6
G60 - G63	... D7
Mini Pressure Switches	... D8

O16 - O52 thermostats for cooling and ambient air

RANCO


Applications

- O16 and O52 instruments are thermostats for room and commercial refrigeration, and are equipped with a unipolar SPDT switch that opens or closes when the temperature increases or decreases.

Common features

The electrical rating of the unipolar SPDT switch for all O16 controls is:

- 16(16)A 250V~ N.O. or N.C.
- 1(1)A 250V~ on the opposite side.

Terminals: 1 common; 2 opens the contact when the temperature increases; 4 closes the contact when the temperature increases.

Cable input: 14mm insulating bushing for O16; for O52, P.G. 16

Installation: two threaded holes on the back of the controller for the insertion of M4x6mm screws (supplied with the thermostat).

Control: by means of a hex nut with cutout for cross screwdriver, present both on the shaft of the capillary and on that of the differential. There is also a control knob, which is supplied as standard with some O52 temperature controllers.

CONTAINER PROTECTION RATING:

- STANDARD IP 44 (O16)
- AVAILABLE IP66 (O52)

COLD ROOM/AMBIENT AIR THERMOSTATS

Code	Measurement range °C	Differential °C		Bulb size (mm)
		High limit	Low limit	
O16-H6900	from (-40)-35 to -7	1.0 fixed	1.5 fixed	diam. 49max x 43max
O16-H6901	from (-22)-18 to +13	1.0 fixed	1.5 fixed	diam. 49max x 43max
O16-H6902	from (-10)-5 to +25	1.0 fixed	1.5 fixed	diam. 49max x 43max
O16-H6903	from (+5)+10 to +40	1.0 fixed	1.5 fixed	diam. 49max x 43max
O16-H6905	from (-22)-18 to +13	from 1.0 to 6.0	from 2.0 to 10.0	diam. 49max x 43max
O16-H6906	from (+5)+10 to +40	from 1.0 to 6.0	from 3.0 to 12.0	diam. 49max x 43max

REMOTE THERMOSTATS WITH BULB

Code	Measurement range °C	Differential °C		Capillary length	Bulb size (mm)
		High limit	Low limit		
O16-H6980	from (-22)-18 to +13	from 1.7 to 7.0	from 3.0 to 12.0	1800	diam. 14.5 x 140
O16-H6981	from (-10)-5 to +25	from 1.7 to 7.0	from 3.0 to 12.0	1800	diam. 14.5 x 140
O16-H6982	from (-2)-1 to +10	1.0 fixed	1.0 fixed	1800	diam. 14.5 x 140
O16-H6983	from (+5)-10 to +40	from 1.7 to 8.0	from 3.0 to 12.0	1800	diam. 14.5 x 140
O16-H6930	from (-40)-34 to +32	from 3.0 to 22.0	from 3.0 to 22.0	1800	diam. 9.5 x 152
O16-H6932	from (+30)-35 to +115	from 2.0 to 14.0	from 2.0 to 14.0	1800	diam. 9.5 x 152

REMOTE THERMOSTATS WITH BULB AND STOP SWITCH

Code	Measurement range °C	Differential °C		Capillary length	Bulb size (mm)
		High limit	Low limit		
O16-H6989	from (-10)-5 to +25	from 1.7 to 7.0	from 3.0 to 12.0	1800	diam. 14.5 x 140
O16-H6931	from (-40)-34 to +32	from 3.0 to 22.0	from 3.0 to 22.0	1800	diam. 9.5 x 152

O16 - O52 thermostats for cooling and ambient air

D3

RANCO



THERMOSTATS WITH STRAIGHT CAPILLARY

Code	Measurement range °C	Differential °C		Capillary length	Bulb size (mm)
		High limit	Low limit		
O16-H6920	from (-55)-48 to -18	from 1.7 to 6.0	from 3.0 to 12.0	2000	
O16-H6921	from (-40)-35 to -7	from 1.7 to 7.0	from 3.0 to 12.0	2000	
O16-H6922	from (-22)-18 to +13	from 1.7 to 7.0	from 3.0 to 12.0	2000	
O16-H6924	from (-10)-5 to +25	from 1.7 to 7.0	from 3.0 to 12.0	2000	

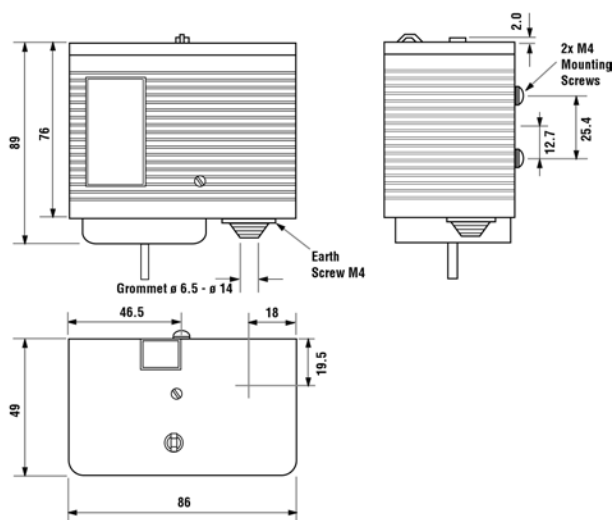
THERMOSTATS WITH COILED CAPILLARY

Code	Measurement range °C	Differential °C		Capillary length	Bulb size (mm)
		High limit	Low limit		
O16-H6950	from (-40)-35 to -7	from 1.7 to 7.0	from 3.0 to 12.0	2000	diam. 9.5 x 38
O16-H6951	from (-22)-18 to -13	from 1.7 to 7.0	from 3.0 to 12.0	2000	diam. 9.5 x 38
O16-H6954	from (-10)-5 to +25	from 1.7 to 7.0	from 3.0 to 12.0	2000	diam. 9.5 x 38

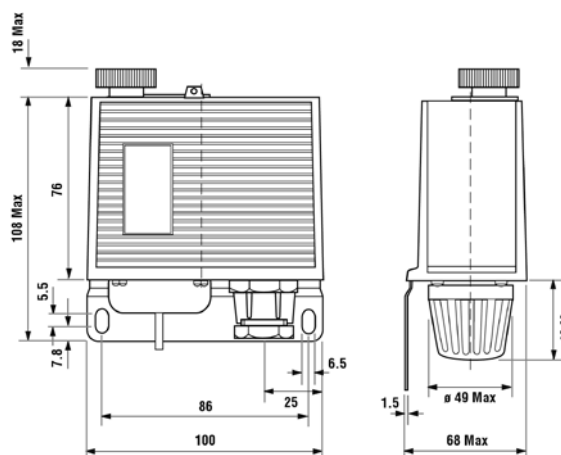
THERMOSTATS WITH COILED CAPILLARY AND STOP SWITCH

Code	Measurement range °C	Differential °C		Capillary length	Bulb size (mm)
		High limit	Low limit		
O16-H6958	from (-40)-35 to -7	from 1.7 to 7.0	from 3.0 to 12.0	2000	diam. 9.5 x 38
O16-H6959	from (-22)-18 to +13	from 1.7 to 7.0	from 3.0 to 12.0	2000	diam. 9.5 x 38

O16 - Dimensions



O52 - Dimensions



O16 - O52 adjustable single pressure controls

RANCO


Applications

- O16 and O52 instruments are single mechanical pressure switches for high and low pressure, and are equipped with a unipolar SPDT switch that closes and opens as the pressure increases or decreases.

Common features

The electrical rating of the unipolar SPDT switch for all O16 controls is:

- 16(16)A 250V~ N.O. or N.C.
- 1(1)A 250V~ on the opposite side.

Connection to the pressure line: 7/16 - 20 UNF straight output male connector, 1/4 flared female connector.

Cable input: 14mm insulating bushing for O16; for O52, P.G. 16

Refrigerant: equipment suitable for use with the most common gases.

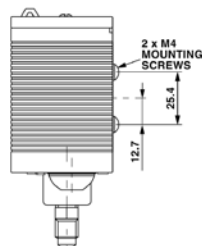
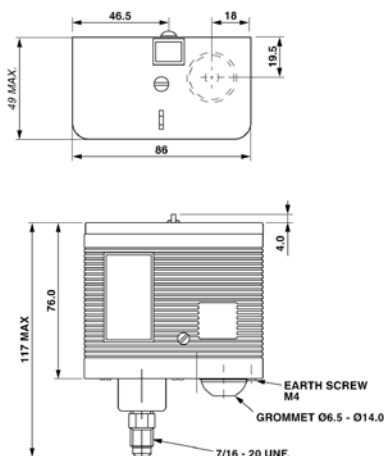
Installation: two threaded holes on the back of the controller for the insertion of M4x6mm screws (supplied with the thermostat).

Terminals: 1 common, 2 opens when the pressure increases, 4 closes when the pressure increases.

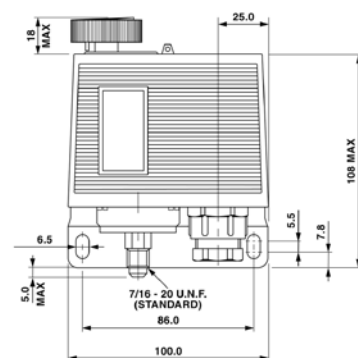
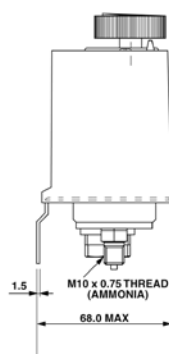
Code	HP/LP	Reset	Measurement range p.s.i. (bar)	Differential p.s.i. (bar)	Bellow type	
					Standard	T.U.V.
O16-H6703	LP	automatic	10...100 (-0.3...7)	9...58 (0.6...4)	Standard	
O16-H6705	LP	manual	10...90 (-0.3...6.2)	9 (0.6)	Standard	
O16-H6750	HP	automatic	100...435 (7...30)	35...115 (2...8)	Standard	
O16-H6751	HP	manual	100...435 (7...30)	45 (3.2)	Standard	
O16-H6758	HP	automatic	100...435 (7...30)	42...115 (3...8)		DWK-79-30
O16-H6759	HP	manual	100...435 (7...30)	45 (3.2)		DWK-79-31
O16-H6760	HP	manual	100...435 (7...30)	45 (3.2)		DWK-79-32

Code	HP/LP	Reset	Measurement range p.s.i. (bar)	Differential p.s.i. (bar)	Bellow type	
					Standard	T.U.V.
O52-H6703	LP	automatic	10...100 (-0.3...7)	9...58 (0.6...4)	Standard	
O52-H6705	LP	manual	10...90 (-0.3...6.2)	9 (0.6)	Standard	
O52-H6750	HP	automatic	100...435 (7...30)	35...115 (2...8)	Standard	
O52-H6751	HP	manual	100...435 (7...30)	45 (3.2)	Standard	
O52-H6758	HP	automatic	100...435 (7...30)	42...115 (3...8)		DWK-79-30
O52-H6759	HP	manual	100...435 (7...30)	45 (3.2)		DWK-79-31
O52-H6760	HP	manual	100...435 (7...30)	45 (3.2)		DWK-79-32

O16 - Dimensions



O52 - Dimensions





Applications

- O17 instruments are dual mechanical pressure switches for high and low pressure, and are equipped with a unipolar SPDT switch that closes and opens as the pressure increases or decreases.

Common features

The electrical rating of the unipolar SPDT switch, except the dual signal version, is:

- 6(16)A 250V~ N.O. or N.C.
- 1(1)A 250V~ on the opposite side.

Connection to the pressure line: 7/16 - 20 UNF straight output male connector, 1/4 flared female connector.

Cable input: 14mm insulating bushing;

Refrigerant: equipment suitable for use with the most common gases.

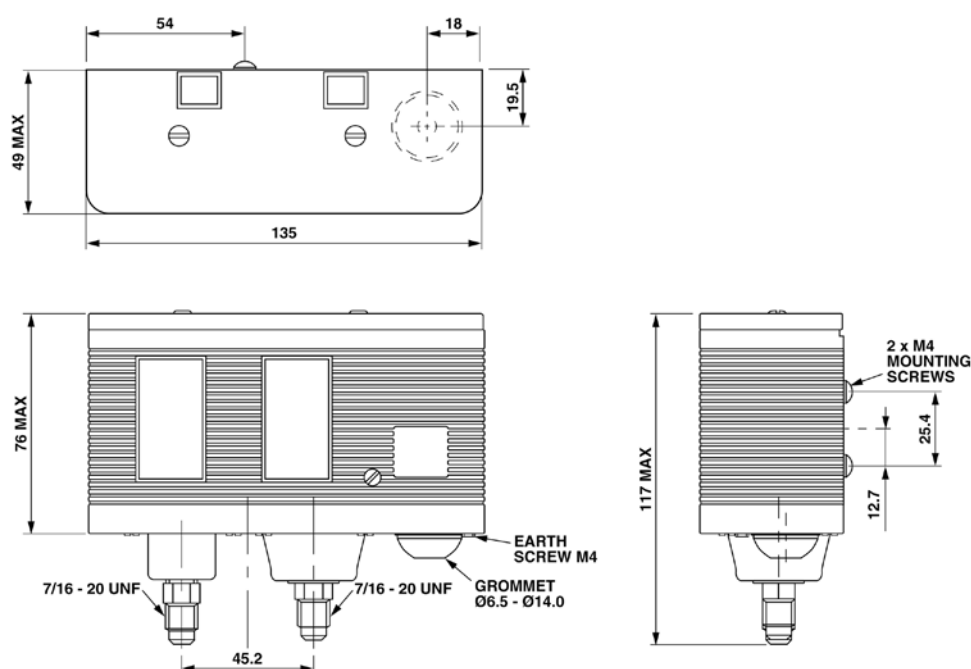
Installation: two threaded holes on the back of the controller for the insertion of M4x6mm screws (supplied with the thermostat).

Standard O17 terminals: 1 common, 2 opens when the LP increases and opens when the HP increases.

Dual signal O17 terminals: 1 common, 2 closes the signal circuit when the LP decreases, 3 closes the signal circuit when the HP increases, 4 closes when the LP increases and open when the HP increases.

Code	Reset		Measurement range p.s.i. (bar)		Differential p.s.i. (bar)		Bellow type	
	High	Low	High	Low	High	Low	Standard	T.U.V.
O17-H4701	Auto	Auto	100...435 (7...30)	10...100 (-0.3...7)	50 (3.5)	9...58 (0.6...4)	Standard	
O17-H4703	Manual	Manual	100...435 (7...30)	10...100 (-0.3...7)	50 (3.5)	9...58 (0.6...4)	Standard	
O17-H4705	Manual	Auto	100...435 (7...30)	10...100 (-0.3...7)	50 (3.5)	9...58 (0.6...4)	Standard	
O17-H4758	Auto	Auto	100...435 (7...30)	10...100 (-0.3...7)	58 (4)	9...58 (0.6...4)		DWK-79-30
O17-H4759	Manual	Auto	100...435 (7...30)	10...100 (-0.3...7)	58 (4)	9...58 (0.6...4)		DWK-79-31
O17-H4760	Manual	Auto	100...435 (7...30)	10...100 (-0.3...7)	58 (4)	9...58 (0.6...4)		DWK-79-32

O17 - Dimensions





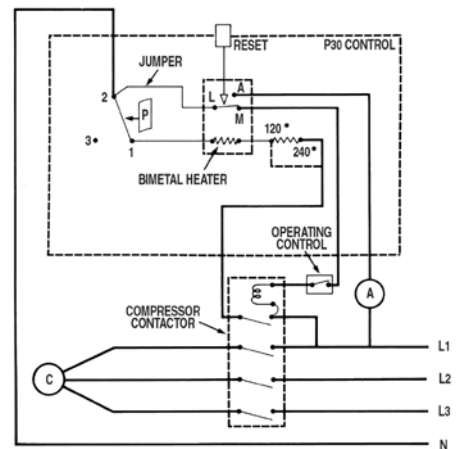
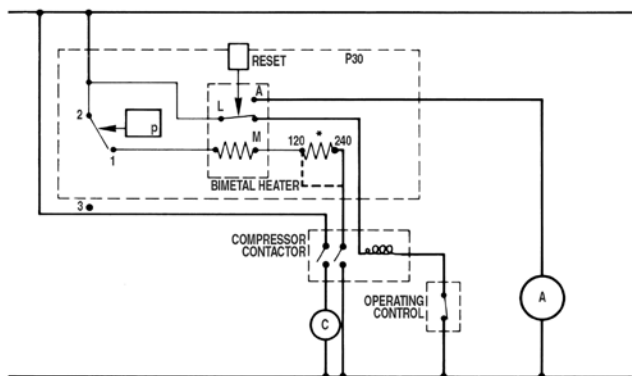
Applications

The P30 oil differential pressure switch is designed for compressors in refrigeration systems which use external oil pumps with refrigerants. It protects the compressor against loss of lubricating oil pressure, which could otherwise cause serious bearing damage resulting in compressor breakdown.

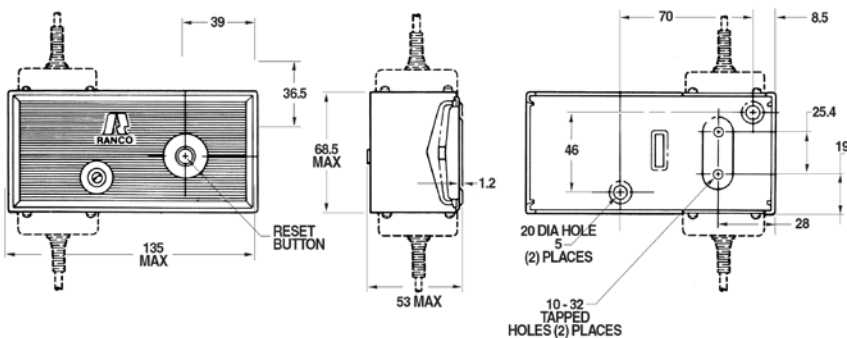
Connected to the crankcase and oil pump by capillaries, the P30 pressure switch detects the difference in the pressure in the crankcase and that of the outlet side of the oil pump.

Code	Safety time	Measurement range p.s.i. (bar)	Differential p.s.i. (bar)	Factory setting	Connection
P30-3601	60 sec (+/-15sec)	50...60 (0.3...4)	7 (0.5) max	10 (0.7)	Capillary 915mm with 1/4" SAE
P30-3701	90 sec (+/-20 sec)	50...60 (0.3...4)	7 (0.5) max	10 (0.7)	Capillary 915mm with 1/4" SAE
P30-3801	120 sec (+/-20 sec)	50...60 (0.3...4)	7 (0.5) max	10 (0.7)	Capillary 915mm with 1/4" SAE
P30-5826	120 sec (+/-20 sec)	9 (0.6)	7 (0.5) max	9 (0.6)	Capillary 915mm with 1/4" SAE
P30-5839	120 sec (+/-20 sec)	9 (0.6)	7 (0.5) max	9 (0.6)	Capillary 915mm with 1/4" SAE

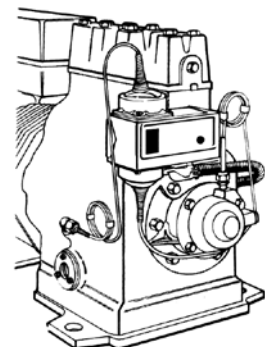
P30 - Wiring diagram - Applications

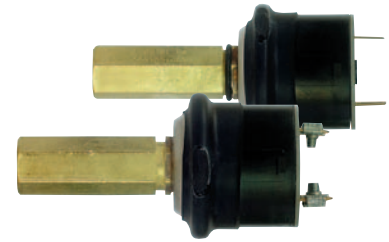


P30 - Dimensions



P30 - Installation





Applications

The G60/G63 range of pressure switches is designed to protect refrigeration systems against critical conditions by setting high or low pressure limits.

The G60 low pressure switch protects the compressor against low suction pressures where there is a danger of liquid refrigerant entering the compressor and causing damage.

The G63 high pressure switch protects the system against excessive discharge pressure which can be dangerous and cause expensive equipment damage.

LOW PRESSURE SWITCHES

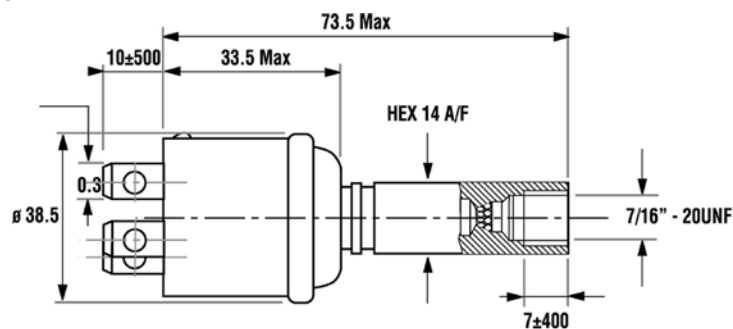
Code	Reset	Measurement range p.s.i. (bar)		Differential p.s.i. (bar)	Connection	Reset button	IP
		Cut-out	Cut-in				
G60-P1028000	Auto	0.14 (0.0)	8 (0.6)	8 (0.6)	female 1/4" SAE	no	00
G60-P1061401	Auto	22 (1.5)	44 (3.0)	22 (1.5)	female 1/4" SAE	yes	44
G60-P1033401	Auto	10 (0.7)	32 (2.2)	22 (1.5)	female 1/4" SAE	yes	44
G60-P1129400	Auto	1.5 (0.1)	19 (1.3)	17.5 (1.2)	capillary 400mm	no	44

HIGH PRESSURE SWITCHES

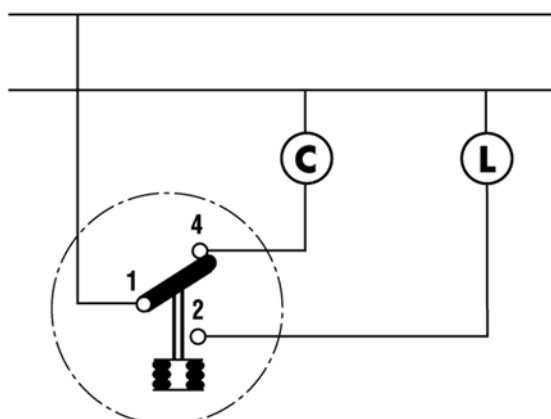
Code	Reset	Measurement range p.s.i. (bar)		Differential p.s.i. (bar)	Connection	Reset button	IP
		Cut-out	Cut-in				
G63-P1036400	Auto	362 (25.0)	261 (18.0)	101 (7.0)	female 1/4" SAE	yes	44
G63-P1127400	Auto	250 (17.3)	185 (12.8)	65 (4.5)	female 1/4" SAE	yes	44
G63-P1029400	Auto	228 (15.8)	126 (8.7)	102 (7.1)	female 1/4" SAE	no	44
G63-P1059400	Auto	203 (14.0)	115 (8.0)	87 (6.0)	female 1/4" SAE	yes	44
G63-P1040600	Auto	347 (24.0)	263 (18.3)	84 (5.8)	female 1/4" SAE	yes	66
G63-P5022600	Manual	362 (25.0)	<286 (<18.5)		female 1/4" SAE	yes	66

Other models/variants available on request.

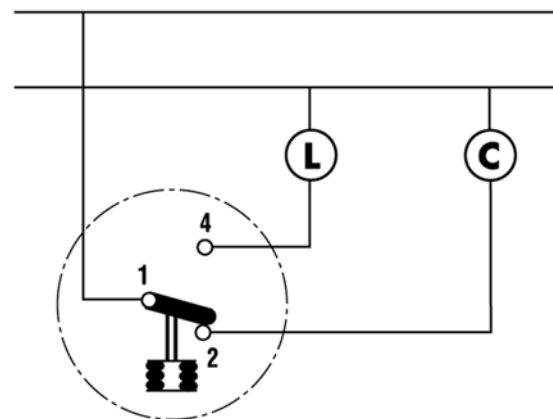
G60 - G63 - Dimensions



G60 - G63 - Wiring diagrams



Cycle interruption in the event of low pressure



Cycle interruption in the event of high pressure

Mini Pressure Switches



Applications

The range of pressure switches is designed to protect refrigeration systems against critical conditions by setting high or low pressure limits.

The low pressure switch protects the compressor against low suction pressures where there is a danger of liquid refrigerant entering the compressor and causing damage.

The high pressure switch protects the system against excessive discharge pressure which can be dangerous and cause expensive equipment damage.

HIGH PRESSURE SWITCHES

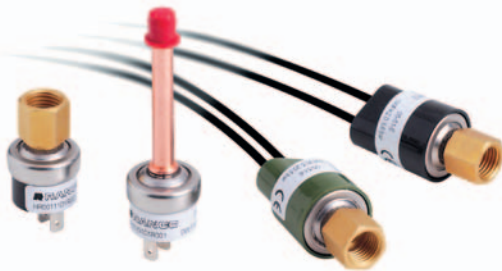
Code	Reset	Pressure (Bar)		Contact	Pressure connection	Connection	Type of refrigerant
		Cut-out	Cut-in				
HR00011B5R701	Automatic	18	13	N.C.	1/4 SAE	6.3mm Faston	R134A
HR10611B1R701	Automatic	18	13	N.C.	1/4 SAE	1m cables	R134A
HR00001B5R701	Automatic	18	13	N.C.	6mm copper tube	6.3mm Faston	R134A
HR10601B1R701	Automatic	18	13	N.C.	6mm copper tube	1m cables	R134A
HL10601C0R701	Manual	18	13	N.C.	6mm copper tube	1m cables	R134A
HR00011B5R702	Automatic	26	20	N.C.	1/4 SAE	6.3mm Faston	R404A / R507
HR10611B1R702	Automatic	26	20	N.C.	1/4 SAE	1m cables	R404A / R507
HR00001B5R702	Automatic	26	20	N.C.	6mm copper tube	6.3mm Faston	R404A / R507
HR10601B1R702	Automatic	26	20	N.C.	6mm copper tube	1m cables	R404A / R507
HL10601C0R702	Manual	26	20	N.C.	6mm copper tube	1m cables	R404A / R507
HR00011B5R703	Automatic	28	21	N.C.	1/4 SAE	6.3mm Faston	R407A / R22
HR10611B1R703	Automatic	28	21	N.C.	1/4 SAE	1m cables	R407A / R22
HR00001B5R703	Automatic	28	21	N.C.	6mm copper tube	6.3mm Faston	R407A / R22
HR10601B1R703	Automatic	28	21	N.C.	6mm copper tube	1m cables	R407A / R22
HL10601C0R703	Manual	28	21	N.C.	6mm copper tube	1m cables	R407A / R22
HR00011B5R704	Automatic	42	33	N.C.	1/4 SAE	6.3mm Faston	R410A
HR10611B1R704	Automatic	42	33	N.C.	1/4 SAE	1m cables	R410A
HR00001B5R704	Automatic	42	33	N.C.	6mm copper tube	6.3mm Faston	R410A
HR10601B1R704	Automatic	42	33	N.C.	6mm copper tube	1m cables	R410A
HL10601C0R704	Manual	42	33	N.C.	6mm copper tube	1m cables	R410A

Other models/variants available on request.

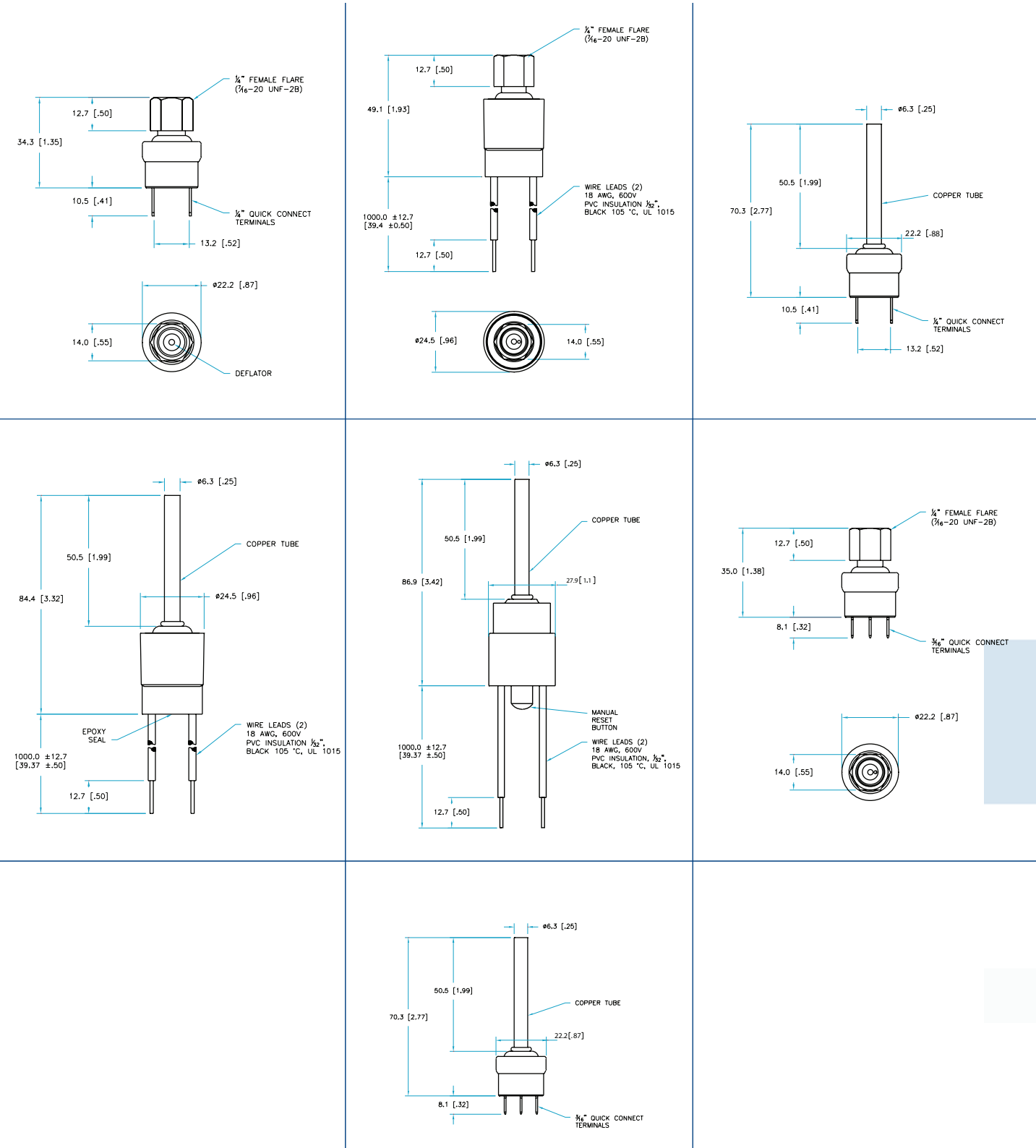
LOW PRESSURE SWITCHES

Code	Reset	Pressure (Bar)		Contact	Pressure connection	Connection	Type of refrigerant
		Cut-out	Cut-in				
HR00011A5R701	Automatic	0.5	1.5	N.O.	1/4 SAE	6.3mm Faston	R134A
HR10611A1R701	Automatic	0.5	1.5	N.O.	1/4 SAE	1m cables	R134A
HR00001A5R701	Automatic	0.5	1.5	N.O.	6mm copper tube	6.3mm Faston	R134A
HR10601A1R701	Automatic	0.5	1.5	N.O.	6mm copper tube	1m cables	R134A
HR00011A5R702	Automatic	0.7	1.7	N.O.	1/4 SAE	6.3mm Faston	R404A / R507
HR10611A1R702	Automatic	0.7	1.7	N.O.	1/4 SAE	1m cables	R404A / R507
HR00001A5R702	Automatic	0.7	1.7	N.O.	6mm copper tube	6.3mm Faston	R404A / R507
HR10601A1R702	Automatic	0.7	1.7	N.O.	6mm copper tube	1m cables	R404A / R507
HR00011A5R703	Automatic	1.7	2.7	N.O.	1/4 SAE	6.3mm Faston	R407A / R22
HR10611A1R703	Automatic	1.7	2.7	N.O.	1/4 SAE	1m cables	R407A / R22
HR00001A5R703	Automatic	1.7	2.7	N.O.	6mm copper tube	6.3mm Faston	R407A / R22
HR10601A1R703	Automatic	1.7	2.7	N.O.	6mm copper tube	1m cables	R407A / R22
HR00011A5R704	Automatic	2.5	4.2	N.O.	1/4 SAE	6.3mm Faston	R410A
HR10611A1R704	Automatic	2.5	4.2	N.O.	1/4 SAE	1m cables	R410A
HR00011A5R704	Automatic	2.5	4.2	N.O.	6mm copper tube	6.3mm Faston	R410A
HR10601A1R704	Automatic	2.5	4.2	N.O.	6mm copper tube	1m cables	R410A

Other models/variants available on request.



Dimensions





Systems

Eliwell offers a wide range of components to resolve the monitoring requirements for temperature and every other type of physical value in the context of a refrigerated storage system.

Solutions range from devices for recording data and displaying temperatures in real-time, to software for managing alarms and graphically displaying system information remotely, even as far as controllers with standard communication protocol for integration into third party systems and centralised alarm systems for the automatic management of a large number of systems.

Televis systems offer valid solutions to the issue of automatic temperature recording as required by international standards, while presenting all the advantages resulting from connecting a series of devices to a PC or an electronic control unit.

The guaranteed preservation of food quality can therefore be achieved at an extremely low cost, above all by using a "friendly" system which offers particularly straightforward operation and constant system monitoring, providing user warnings as necessary.

Televis systems also guarantee that any refrigeration system data can be stored, all potential alarms managed and instruments operated fully, even when controlled remotely.



TelevisNet	... E2
TelevisCompact400-600	... E3
Memory1000	... E4
USB Copy Card	... E5
Copy Card	... E5
DeviceManager	... E6
ParamManager	... E6
SmartAdapter	... E7
BusAdapter130	... E8
BusAdapter150	... E8
BusAdapter350	... E8
RadioAdapter (/S)	... E9
RadioAdapter EXT	... E9
RadioKey	... E9
EWTv200	... E10
EWTv240	... E10
EWTv270	... E11
EWTv280	... E11
EWTv150 (Keyboard)	... E11



Applications

The TelevisNet software with multilingual interface is used to monitor and control a system through data recording and alarm management.

Specifications

Graphical interface
Eliwell instrument parameter management
Real-time variable monitoring and management

Device alarm log management
Firmware updating

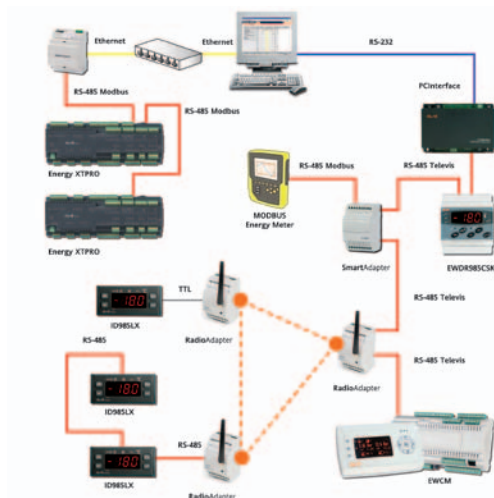
Minimum system requirements TelevisNet 4.0

Operating system:	- Windows XP Home SP2 or SP3 - Windows XP Professional SP2 or SP3
Required software components:	- TCP port 25 must be available - HTTP port 80 must be available
Minimum hardware:	1024x768 graphics resolution 1GHz microprocessor 1GB RAM 10 GB free hard disk space - Serial and/or USB ports in sufficient quantities depending on requirements (PCInterface, modem, etc.)
Space required on disk:	Approx. 500 MB for standard installation (2 languages, 50 models)
Browsers supported:	Internet Explorer 6; Mozilla Firefox 2

Accessories

Codes	Description	Details
PC1A3000000	PC Interface 1110	RS-232 interface module between PC and RS-485 device network, at least one unit per system required
LA0ET00X700	Ethernet LanAdapter	Ethernet interface module between PC and RS-485 device network, for additional networks
LA0WF00X700	WiFi LanAdapter	WiFi interface module between PC and RS-485 device network, for additional networks
see relevant page	BusAdapter130-150-350	RS-485 network interface for Eliwell controllers
see relevant page	/S - EXT -Radiokey RadioAdapter	MESH wireless interface for Eliwell controllers
see relevant page	SmartAdapter	Televis converter for RS-485 ModBus instruments
CO111150	RS-485 cable	RS-485 network cable in 300m reels

Typical configuration



Codes

p/n	description	Applications
SLP08xx0BA000	TelevisNet	small systems

xx=06: up to 6 controllers
xx=10: up to 10 controllers
xx=15: up to 15 controllers

Codes

p/n	description	Applications
SLP08xx0BA000	TelevisNet	medium-large systems

xx=30: up to 30 controllers
xx=60: up to 60 controllers
xx=2H: up to 224 controllers



Applications

Televis Compact is a family of devices used to monitor, control and manage commercial refrigeration installations from a distance. The device has a remote, web-based user interface and a local LCD colour interface with touch-screen technology allowing it to be configured directly (not from PC).

Specifications

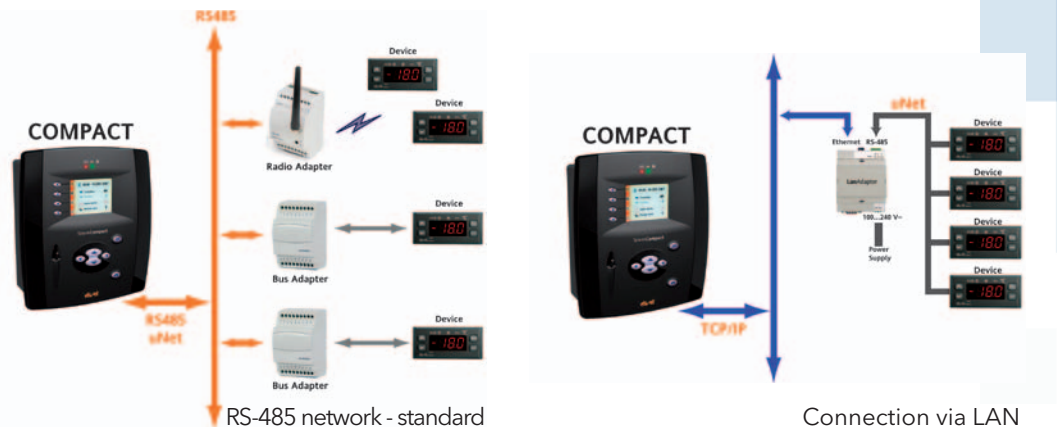
- Innovative design
 - Compatibility with third party instruments using ModBus protocol
 - Alarm signals via LAN (Twin) or SMS
 - Languages supported: Italian - English - Spanish*
 - Soft keys for immediate access to functions
- *for the availability of other languages, please contact the sales department

Technical Data	TelevisCompact400	TelevisCompact600
User interface:	3 signal LEDs	3.5" touch screen LCD 10 contextual function keys
Operating system:	Windows CE 6.0	Windows CE 6.0
Browsers supported:	• Internet Explorer 6 or later • Mozilla Firefox 2 or later	• Internet Explorer 6 or later • Mozilla Firefox 2 or later
Digital outputs:	2 SPST relays for alarm signals	2 SPST relays for alarm signals
Connections:	1 USB port 1 RS-232 port (modem) 1 RS-485 port (device network) 1 Ethernet port	1 USB port 1 RS-232 port (modem) 1 RS-485 port (device network) 1 Ethernet port
Connections:	LAN (integrated) GSM model (external, optional) SD Card (optional) USB mass storage device	LAN (integrated) GSM model (external, optional) SD Card (optional) USB mass storage device
Power supply:	100-240 V~	100-240 V~
Power consumption:	10W max	10W max

Accessories

Codes	Description	Details
LA0ET00X700	Ethernet LanAdapter	Ethernet / RS-485 interface module
LA0WF00X700	WiFi LanAdapter	WiFi interface module
see relevant page	BusAdapter130-150-350	RS-485 network interface for Eliwell controllers
see relevant page	/S - EXT -Radiokey RadioAdapter	MESH wireless interface for Eliwell controllers
see relevant page	SmartAdapter	Televis converter for RS-485 ModBus instruments
CO111150	RS-485 cable	RS-485 network cable in 300m reels

Connections



Codes

p/n	description	Applications
TCP40E40X0000	TelevisCompact400	up to 40 controllers
TCP40E60X0000	TelevisCompact400	up to 60 controllers

Codes

p/n	description	Applications
TCP60E40X0000	TelevisCompact600	up to 40 controllers
TCP60E60X0000	TelevisCompact600	up to 60 controllers

Memory1000



Applications

Memory1000 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.

Specifications

Powerful, easy to use and cheap to run
Compatible with RadioAdapter wireless networks
Manages all aspects of network controller alarms

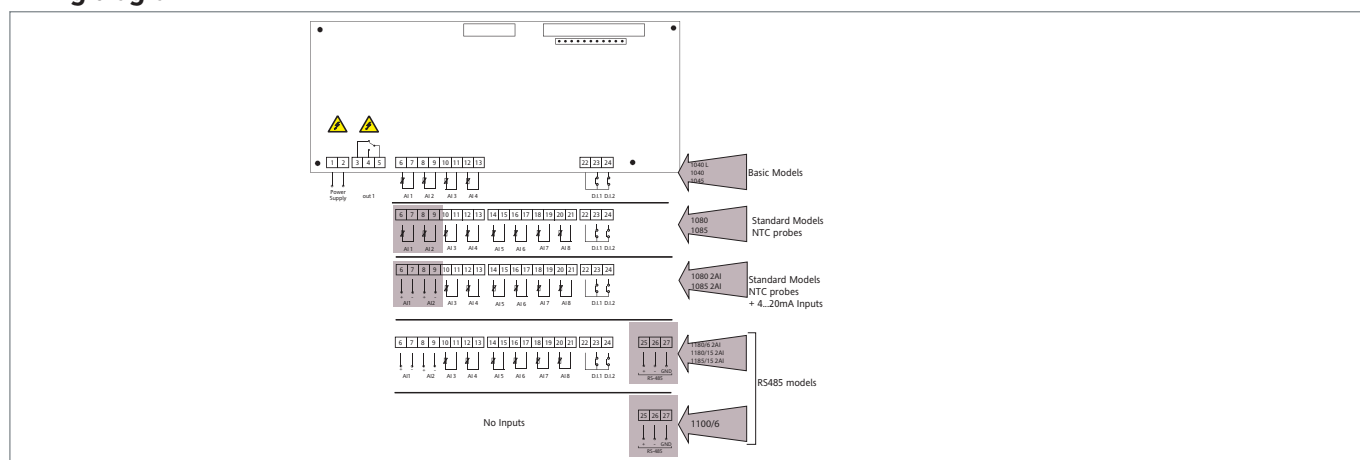
12 months+ data logging capacity
A wide range of models to fit all application requirements

General features	Memory1000 with printer	Memory1000 with no printer
User interface:	Backlit graphic LCD 8 polycarbonate keys	Backlit graphic LCD 7 polycarbonate keys
Analogue inputs:	Up to 8 analogue inputs (NTC/4...20mA)	Up to 8 analogue inputs (NTC/4...20mA)
Digital inputs:	Up to 2 digital inputs	Up to 2 digital inputs
Digital outputs:	1 SPDT 5(2)A 250V~	1 SPDT 5(2)A 250V~
Connections:	RS-485 port for input expansion via compatible Eliwell Televis controllers RS-232 port for exporting data using Microsoft Windows® software (supplied) SD memory card slot for downloading data	RS-485 port for input expansion via compatible Eliwell Televis controllers RS-232 port for exporting data using Microsoft Windows® software (supplied) SD memory card slot for downloading data
Clock:	present	present
Buzzer:	present	present
Power consumption:	20W max (printer in use)	5W max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Printer:	Integrated thermal printer	-

Accessories

Codes	Description
RC444444	Thermal paper roll

Wiring diagram

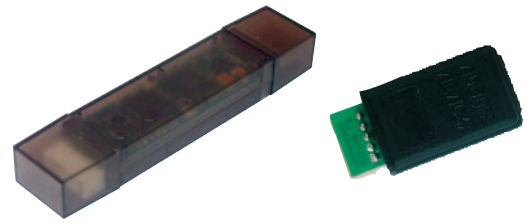


Codes

p/n	description	connectable probes
M1K04N03D1X00	Memory1000 Printer	4 NTC
M1K08N03D1X00	Memory1000 Printer	6 NTC+2x4...20mA
M1K26S03D1X00	Memory1000 Printer	6 NTC+2x4...20mA +RS-485
M1K08N03D0X00	Memory1000 Printer	8 NTC

Codes

p/n	description	connectable probes
M1K04X03D0X00	Memory1000	4 NTC
M1K26N03D0X00	Memory1000	6 NTC+2x4...20mA
M1K26S03D0X00	Memory1000	6 NTC+2x4...20mA +RS-485
M1K08N03D0X00	Memory1000	8 NTC



Applications

The Copy Card and USB Copy Card are memory devices for rapid parameter configuration/duplication, designed for Eliwell controllers.

Specifications

Updating device parameter values
Updating device firmware/applications
Downloading parameter values from the instrument
Downloading alarm log from the instrument

Use	USB Copy Card	Copy Card
EWCM4000	-	✓
EWCM8400-8600-8900	✓	-
EWCM9900	✓	-
V800 DRIVER	✓	-
EWRC300-500	-	✓
EWRC800-EWHT800	-	✓*
EWHT1800	✓	-
ID series	-	✓
IC series	-	✓
EWDR	-	✓
IWP/IWC	-	✓
EWTS	-	✓
DR4000	-	✓
EW4800	-	✓

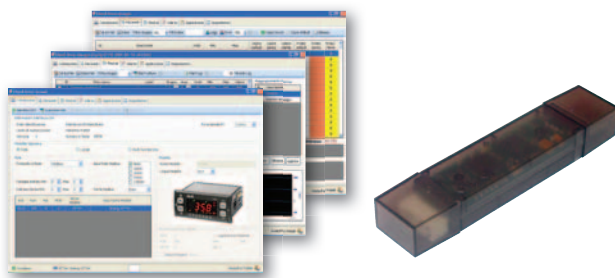
Codes

p/n	description
CCA0BUI02N000	USB Copy Card
COLV000016200	Extension cable for USB Copy Card

Codes

p/n	description
CC0S00A00M000	Copy Card standard
CC0S00A00M003	*Copy Card EWRC800-EWHT800

DeviceManager - ParamManager



Applications

The software is used to simplify and support the installation and management of Eliwell devices.

The software can be used to save parameter mapping and transfer it to and from the controller with a few clicks.

DeviceManager is supplied with the DeviceManager Interface (DMI) PC(USB)/controller interface.

ParamManager is available for instruments in the ID family and requires the PCInterface 2150 device.

For software/controller compatibility details, please consult the compatibility table, available from the website www.eliwell.it

Specifications

Graphical interface

Eliwell instrument parameter management

Real-time variable monitoring and management

Device alarm log management

Firmware updating

Minimum system requirements	DeviceManager	ParamManager
Operating system:	- Windows XP Pro SP2, Italian and English - Windows XP Home SP2, Italian and English - Windows 2000 Professional SP4, Italian and English	Windows 2000 and Windows XP
Software components required in addition to operating system:	.NET Framework 2.0	-
Minimum hardware:	- graphics resolution 1024x768 700MHz CPU 256MB RAM - HD 1GB - Mouse or equivalent navigation system	- VGA graphics resolution - Pentium 133 or later 16MB RAM
Space required on disk:	Approx. 500 Mbyte for standard installation (2 languages, 50 models)	Approx. 30 Mbyte for standard installation (2 languages, 50 models)

Accessories

Code	Description	Details
PCI5A3000600	PCInterface 2150	RS-232 interface module between PC and controller
CO111127	TTL cable	1m reinforced cable

Codes

p/n	description
DMP1000002000	CD DeviceManager
DMI1001002000	DMI 100-1 End User
DMI1002002000	DMI 100-2 Service
DMI1003002000	DMI 100-3 Manufacturer

Codes

p/n	description
SLP05XX000100	ParamManager



Applications

SmartAdapter is a Televis converter for RS-485 ModBus instruments.

Specifications

Mounting on DIN rail

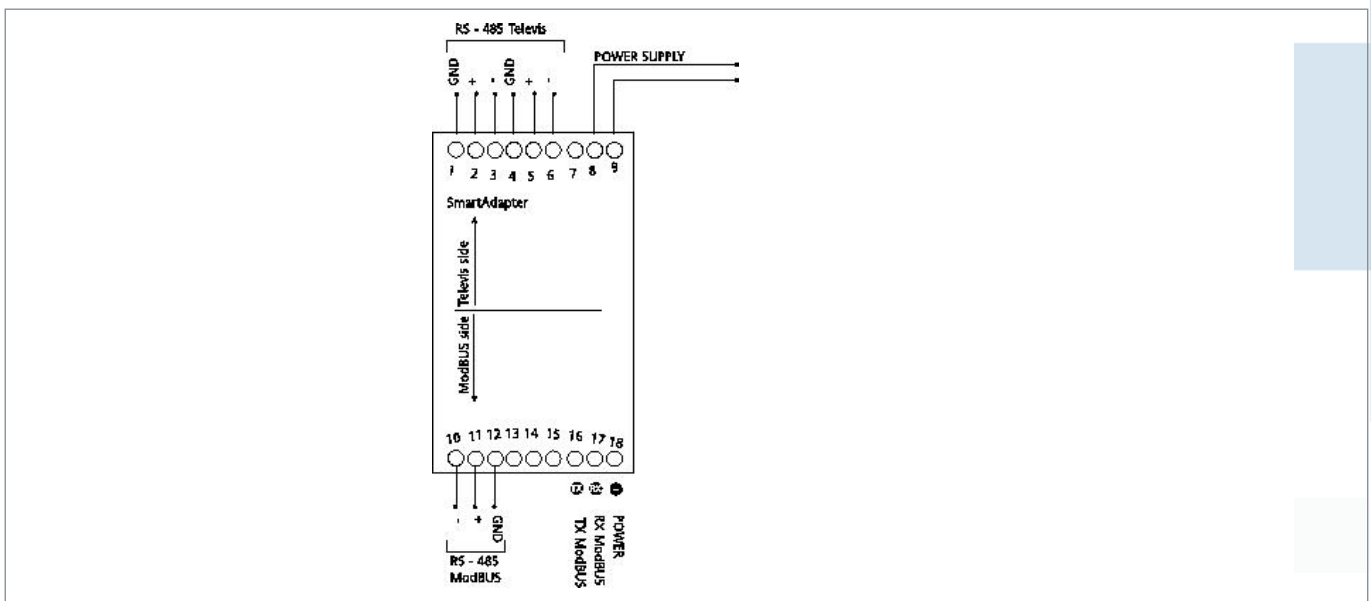
Dimensions: 51 length x 85 height x 60 depth

Downloading parameter values from the instrument

Downloading alarm log from the instrument

Technical Data	SmartAdapter
Container:	3 DIN module
Mounting:	on omega-DIN rail
Power supply:	230V~ ±10% 50/60Hz
Power consumption:	6W
Insulation class:	to meet system needs
Operating temperature:	-5...+55°C
Storage temperature:	-30...+75°C
Ambient humidity for operation and storage:	10...90% RH (non-condensing)
Connections:	• double RS-485 serial port for connection to TelevisSystem (Televis side) • RS-485 serial port for ModBus connection

Wiring diagram



Codes

p/n	description	p/n	description
SAD0RS01M700	SmartAdapter up to 1 instrum. ModBus	SAD0RS30M700	SmartAdapter up to 30 instrum. ModBus
SAD0RS03M700	SmartAdapter up to 3 instrum. ModBus		

BusAdapter130-150-350



Applications

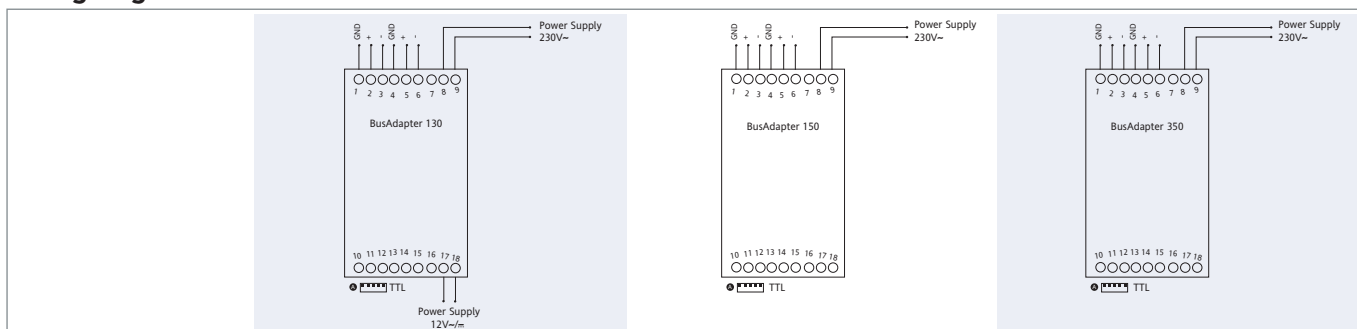
BusAdapter130-150-350 is a family of devices used to connect Eliwell controllers to wired supervision and monitoring networks in RS-485 mode.

Specifications

- 130 models have an auxiliary 12V (5 VA) output for powering the instrument.
- 150 models are equipped with reinforced electrical insulation.
- 350 models are equipped with reinforced electrical insulation and should be used with EM300 LX.

General technical specifications	BusAdapter130	BusAdapter150	BusAdapter350
Container:	3 DIN module	3 DIN module	3 DIN module
Mounting:	on DIN rail	on DIN rail	on DIN rail
Power supply:	230V~ / 115V~ $\pm 10\%$ 50/60Hz	230V~ / 115V~ $\pm 10\%$ 50/60Hz	230V~ / 115V~ $\pm 10\%$ 50/60Hz
Power consumption:	6W	1.5W	1.5W
Insulation class:	to meet system needs	to meet system needs	to meet system needs
Ambient operating temperature:	-5...+55°C	-5...+60°C	-5...+60°C
Ambient storage temperature:	-30...+75°C	-30...+75°C	-30...+75°C
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Terminals:	screw-on terminal block for connecting electric cables, the cross-section of which must not exceed 2.5 mm ² (one wire per terminal for power connections)	screw-on terminal block for connecting electric cables, the cross-section of which must not exceed 2.5 mm ² (one wire per terminal for power connections)	screw-on terminal block for connecting electric cables, the cross-section of which must not exceed 2.5 mm ² (one wire per terminal for power connections)
Connections:	• 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	• double RS-485 port for connection to TelevisSystem • TTL port for connection to instruments
Baud rate:	2400...9600 Baud	2400...9600 Baud	2400...9600 Baud
Auxiliary output:	12V~ / $\pm 10\%$ 50/60Hz	/	/

Wiring diagram



Codes

p/n	description
BA11250N370x	BusAdapter130
BA10000R370x	BusAdapter150

p/n	description
BA10000R370x	BusAdapter350

x=0: 1m cable; x=3: 2.5m cable

x=1: 1m cable; x=4: 2.5m cable



Applications

RadioAdapter provides a cost-effective, reliable way of building communication networks between monitoring systems and controllers by replacing traditional cables or by extending existing networks.

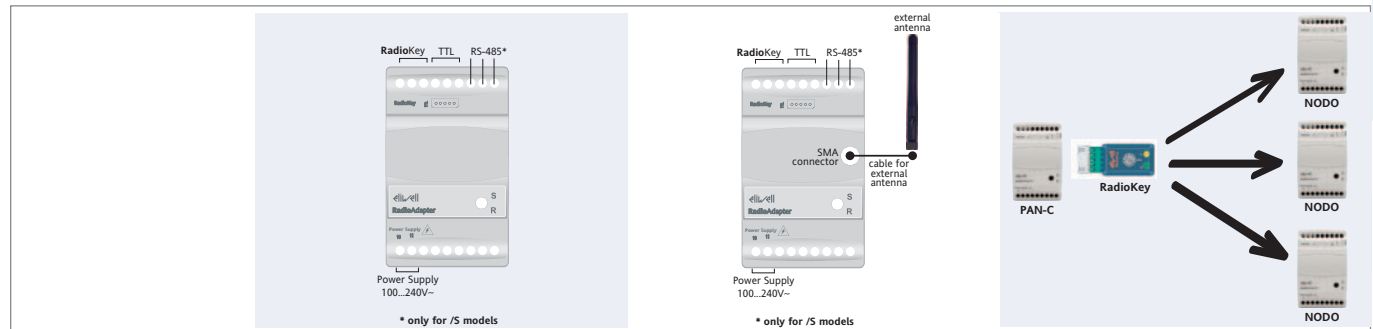
RadioKey is a network configuration device.

Specifications

- Standard: IEEE 802.15.4
- Frequency band: ISM 2.400 GHz...2.485 GHz
- MESH communication technology with automatic directory selection
- ability to act as a repeater for adjacent nodes
- extensive surface coverage
- sending and receiving of messages, bypassing obstacles
- functionality guaranteed even if one or more nodes are missing

General technical specifications	RadioAdapter • RadioAdapter/S	RadioAdapter EXT • RadioAdapter/S EXT	RadioKey
Container:	3 DIN module	3 DIN module	-
Mounting:	on DIN rail	on DIN rail	-
Power supply:	100...240V~ ±10% 50/60Hz	100...240V~ ±10% 50/60Hz	-
Power consumption:	2W	2W	-
Insulation class:	II	II	-
Ambient operating temperature:	-5...+60°C	-5...+60°C	-
Ambient storage temperature:	-20...+85°C	-20...+85°C	-
Ambient operation and storage humidity:	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Standard:	IEEE 802.15.4	IEEE 802.15.4	-
Operating class:	class 4, ISA classification SP100.11 (not to be used for safety equipment)	class 4, ISA classification SP100.11 (not to be used for safety equipment)	-
Network types permitted:	star, tree or MESH	star, tree or MESH	-
Protocol supported:	Televis and ModBus RT	Televis and ModBus RTU	-
Number of nodes per network:	100 max	100 max	-
Number of controllers per node:	240 max	240 max	-
Radio response time:	800msec max (value to be added to the response time of the controller to calculate transmission timeout)	800msec max (value to be added to the response time of the controller to calculate transmission timeout)	-
Connections:	TTL port for connection to devices	TTL port for connection to devices	-
Antenna:	2 x 4GHz integrated, multidirectional	external - not included (see Accessories)	-
Accessories:	-	external antenna kit + SMA 90° connector + 1m cable. To be ordered separately	-

Wiring diagram



Codes

p/n	description	p/n	description
BARF0TS00NH00	RadioAdapter	MD0000003	External antenna kit for EXT
BARF0DS00NH00	RadioAdapter/S	CCA0B0T01T×00	RadioKey (Televis)
BARF0TS20NH00	RadioAdapterEXT	CCA0B0T01M×00	RadioKey (ModBus)
BARF0DS20NH00	RadioAdapterEXT/S		

x= depending on bit rate values



Applications

The EWTV range of products consists of modules to which, in a Televis system, the probes acquiring temperature values are connected.

The EWTV150 configuration module can be used to program the recognition parameters for each probe, the measurement unit on the display and total alarm management.

Specifications

Telephone-type connector for connection to plug-in EWTV 150 keypad

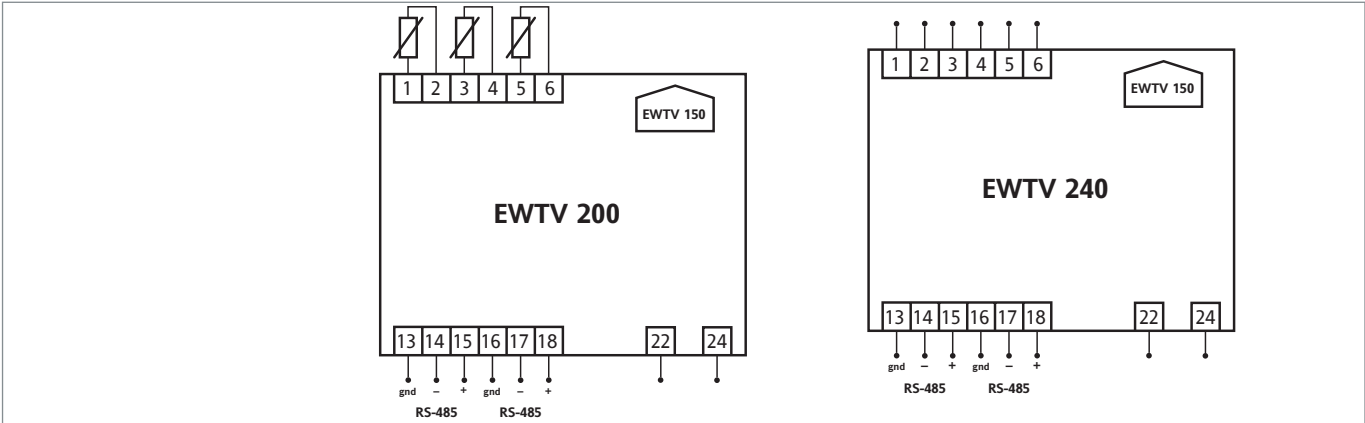
RS-485 port for connection to the Televis system with split terminals

Ambient operating temperature: -50...60°C

Ambient storage temperature: -30...75°C

General features	EWTV200	EWTV240
Container:	plastic, 4 DIN modules	plastic, 4 DIN modules
Dimensions:	70x85mm, depth 61mm	70x85mm, depth 61mm
Mounting:	on DIN rail (Omega 3) or wall-mounted	on DIN rail (Omega 3) or wall-mounted
Analogue inputs:	3 PTC probes	3 inputs 0...20mA /4...20mA connectable to EWHs humidity probes, EWPA pressure transducers or temperature probes with current output
Connections:	• double RS-485 port for connection to TelevisSystem • telephone connector for connection to EWTV150	• double RS-485 port for connection to TelevisSystem • telephone connector for connection to EWTV150
Data storage:	on non-volatile memory (EEPROM)	on non-volatile memory (EEPROM)
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
* for other types, please contact the sales department		

Wiring diagram



Codes

p/n	description	p/n	description
T6V52C0700	EWTV200	T6V52C0702	EWTV240



Applications

The EWTV range of products consists of modules to which, in a Televis system, the probes acquiring temperature values are connected.

The EWTV150 configuration module can be used to program the recognition parameters for each probe, the measurement unit on the display and total alarm management.

Specifications

Telephone-type connector for connection to plug-in EWTV 150 keypad

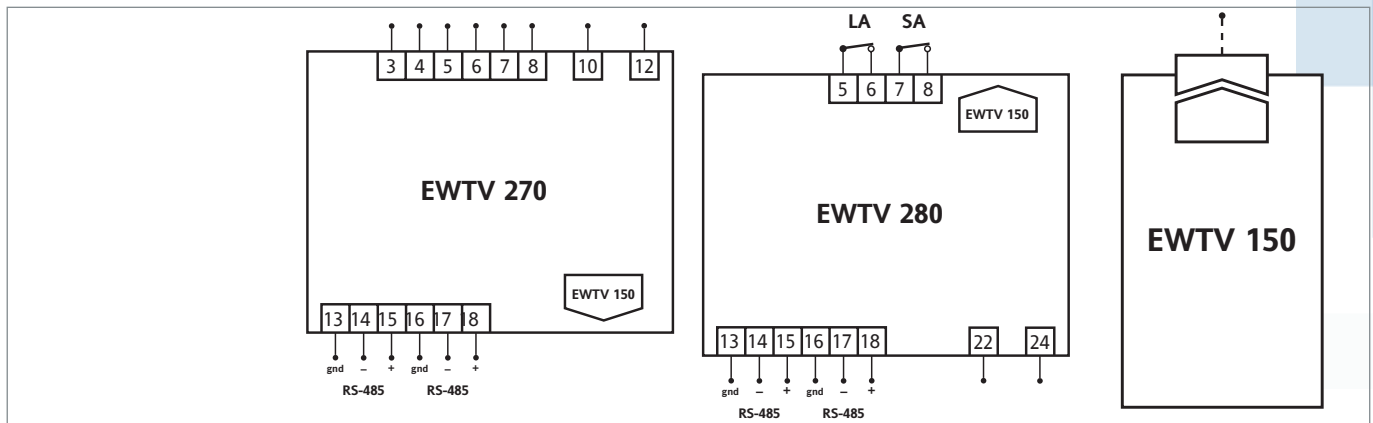
Ambient operating temperature: -50...60°C

Ambient storage temperature: -30...75°C

RS-485 port for connection to the Televis system with split terminals

General features	EWTV270	EWTV280	EWTV150
User interface:	-	-	3-digit display 3 polycarbonate keys
Container:	plastic, 4 DIN modules	plastic, 4 DIN modules	-
Dimensions:	70x85mm, depth 61mm	70x85mm, depth 61mm	-
Mounting:	on DIN rail (Omega 3) or wall-mounted	on DIN rail (Omega 3) or wall-mounted	-
Analogue inputs:	up to 3 optoisolated voltage inputs at 220V~	-	-
Analogue outputs:	-	2 x SPST N.C. 8(3)A 250V~ for remote system alarm repetition	-
Connections:	- double RS-485 port for connection to TelevisSystem - telephone connector for connection to EWTV150	- double RS-485 port for connection to TelevisSystem - telephone connector for connection to EWTV150	-
Data storage:	on non-volatile memory (EEPROM)	on non-volatile memory (EEPROM)	-
Power supply*:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz	from the instrument to which it is connected
Connection cable:	-	-	cable length 300mm
* for other types, please contact the sales department			

Wiring diagram



Codes

p/n	description	p/n	description
T6V52C0701	EWTV270	T6V52C0704	EWTV280
		T6V59C0700	EWTV150 Configuration keypad

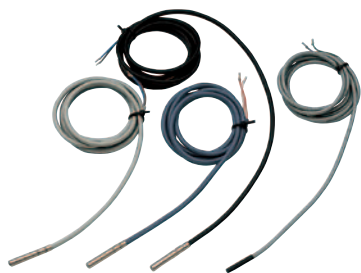
Accessories

A series of accessories to complete the series of instruments, such as, for example, temperature, humidity and pressure probes, power supply units, an extensive range of transformers and the Copy Card. All this - and more - helps all required instruments to achieve increasingly high quality and working productivity levels and makes them available to the user.



PTC temperature probes	... F2
Pt100 temperature probes	... F2
Pt1000 temperature probes	... F2
TC temperature probes	... F2
NTC temperature probes	... F3
EWPA007	... F4
EWPA030	... F4
EWPA050F	... F4
EWPA010 ratiometric	... F5
EWPA030 ratiometric	... F5
EWPA050 ratiometric	... F5
EWHS280	... F6
EWHS300	... F6
EWHS310-2	... F6
Drip protection	... F7
EWBOX - INOX BOX	... F7
TF - Transformers	... F8
TA - Transf. Amperometric	... F8
EWCFW08 Inverter	... F9
ID and IC switches	... F10
Temperature probe tables	... F11

PTC - PT100 - PT1000 - TC (Temperature probes)



Applications

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

Common features

Temperature measurement accuracy: $\pm 1\%$

General features - PTC

Part number	Description	Capsule material	Capsule dimensions (LxØ)	Cable type	Protection rating	Operating range	Probe length
SN7T6A1502	PTC	AISI 304	40x6mm	TPE	IP68	-50...+110°C	1.5m
SN7P0B1500	PTC resin-coated	PVC	30x6mm	PVC	IP68	-30...+80°C	1.5m
SN7S0A1500	PTC with steel tube	AISI 304	40x6mm	silicon	IP67	-55...+120°C	1.5m

General features - Pt100

SN200009	Pt100, 3 wires with steel tube	AISI 316	100x6	vetrotex	IP44	0...+350°C	3m
SN206000	Pt100, 3 wires with steel tube	AISI 316	100x6	silicon	IP67	-40...200°C	3m
SN2TAE51502C0	P100 with steel tube	AISI 304	50x6	thermoplastic rubber	IP68	-50...+110°C	1.5m

General features - Pt1000

SN9S0A2500	Pt1000, two wires	AISI 304	40x6	silicon	IP67	-50...200°C	2.5m
SN9SAE420G2G8	Pt1000 with steel tube, double closure	AISI 304	40x6	silicon	IP55	-50...200°C	2m

General features - Tck

SN400004	Tck	Inconel 600	200x6	TTS	IP45	-40...1150°C	1m
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General features - Tcj

SN300000	Tcj	AISI 316	100x6	vetrotex	IP44	0...350°C	3m
SN300008	Tcj	AISI 316	100x6	vetrotex	IP44	0...350°C	1.5m



Applications

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

Common features

Temperature measurement accuracy: $\pm 1\%$

General specifications - overmoulded NTC with double insulation

Part number	Description	Capsule material	Capsule dimensions (LxØ)	Cable type	Protection rating	Operating range	Probe length
SN8T6H1502	overmoulded NTC with double insulation	thermoplastic rubber	20x5mm	thermoplastic rubber	IP68	-50...+110°C	1.5m
SN8T6N1502	overmoulded NTC with double insulation	AISI 304	50x6mm	thermoplastic rubber	IP68	-50...+110°C	1.5m

General specifications - overmoulded NTC with double cable insulation

SN8T6H1505	overmoulded NTC with double cable insulation	thermoplastic rubber	20x5mm	black shielded thermoplastic rubber	IP68	-50...+110°C	1.5m
SN8T6H3002	overmoulded NTC with double cable insulation	thermoplastic rubber	20x5mm	thermoplastic rubber (ext.) polypropylene (int.)	IP68	-50...+110°C	3.0m
SN8T6H0005	overmoulded NTC with double cable insulation	thermoplastic rubber	20x5mm	black shielded thermoplastic rubber	IP68	-50...+110°C	10.0m
SN8T6A1502	overmoulded NTC with double cable insulation	AISI 304	40x6mm	thermoplastic rubber (ext.) polypropylene (int.)	IP68	-50...+110°C	1.5m
SN8T6A3002	overmoulded NTC with double cable insulation	AISI 304	40x6mm	thermoplastic rubber (ext.) polypropylene (int.)	IP68	-50...+110°C	3.0m
SN8T6I1500	overmoulded NTC with double cable insulation	AISI 304	20x6mm	thermoplastic rubber	IP68	-50...+110°C	1.5m

General specifications - NTC with double insulation

SN8SAA1502	NTC with double insulation	AISI 304 (ext.)	40x6mm	Silicon	IP67	-50...+120°C	1.5m
SN8PAA0000	NTC with double insulation	AISI 304 (ext.)	40x6mm	PVC	IP67	-30...+105°C	10.0m
SN8PAA1500	NTC with double insulation	AISI 304 (ext.)	40x6mm	PVC	IP67	-30...+105°C	1.5m
SN8PCL1500	NTC with double insulation	Nylon - double tube	26x7mm	PVC	IP67	-30...+80°C	1.5m

General specifications - special NTCs

SN8DEB21502C0	NTC with 'FAST' arm - high-speed response	copper	16x4mm	thermoplastic rubber (ext.) polypropylene (int.)	IP68	-50...+110°C	1.5m
SN8DNB11502A0	NTC with 'FAST' arm - high-speed response	copper	16x4mm	thermoplastic rubber (ext.) polypropylene (int.)	IP67	-50...+110°C	1.5m
SN8DEC11502A0	'FAST' NTC - high-speed response	AISI 304	40x4mm	thermoplastic rubber (ext.) polypropylene (int.)	IP67	-50...+110°C	1.5m
SN8P0X3002	'FAST' NTC - with steel tube	AISI 304	40x4mm	thermoplastic rubber (ext.) polypropylene (int.)	IP67	-50...+110°C	3.0m
SN8P0A1500	NTC with steel tube	AISI 304	40x6mm	PVC	IP67	-30...+80°C	1.5m
SN8D6L4002	extended range NTC	polyester for high temperatures	20x5mm	Polyester	IP65	-50...+120°C; 150°C max for 3000h	4.0m

EWPA007 - 030 - 050F Pressure transducers



Applications

EWPA series probes or pressure transducers are sensors with a current output through which they transmit the signal to the instruments to which they are connected.

Common features

Protection rating: IP65

Electrical connection: 2m cable

Connection: via 2 wires

Output: 4...20mA current

General features	EWPA007	EWPA030	EWPA050F
Operating range:	-0.5...8 bar (relative) 0.5...8 bar (absolute)	0...30 bar (relative) 1...31 bar (absolute)	0...50 bar (relative)
Overload:	20 bar	100 bar	100 bar
Operating temperature:	-20...80°C	-20...80°C	-25...80°C
Global error at ambient temperature:	±1%	±1%	±0.5%
Global error at 0...50°C:	typical: ±1%; max: ±2%	typical: ±1%; max: ±2%	±2%
Global error for values other than 0...50°C:	typical: ±2.5%; max: ±4%	typical: ±2.5%; max: ±4%	from ±3% to ±4%
Impact resistance:	sinusoidal pulse, 20g/11 msec (IEC-68-2-36)	sinusoidal pulse, 20g/11 msec (IEC-68-2-36)	sinusoidal pulse, 20g/11 msec (IEC-68-2-36)
Vibrations:	5...2000 Hz/10 g on three axes (IEC-68-2-6)	5...2000 Hz/10 g on three axes (IEC-68-2-6)	5...2000 Hz/20 g on three axes (IEC-68-2-6)
Power supply:	8...28V=	8...28V=	8...28V=
Compensated temperature:	0...50°C	0...50°C	0...50°C
Power supply unit:	available	available	available
Mechanical connections:	male connector / female connector 1/4 SAE (7/16" - 20 UNF)	male connector / female connector 1/4 SAE (7/16" - 20 UNF)	male connector / female connector 1/4 SAE (7/16" - 20 UNF)

Codes

p/n	description	Connector
TD200107	EWPA007	male
TD300008	EWPA007	female

Codes

p/n	description	Connector
TD200130	EWPA030	male
TD200030	EWPA030	female
TD300050	EWPA050F	male

EWPA010 - 030 - 050 Ratiometric pressure transducers

F5



Applications

EWPA series ratiometric pressure transducers are sensors with a current output through which they transmit the signal to the instruments to which they are connected.

They offer precise performance across a wide range of temperatures.

Common features

Protection rating: IP65

Electrical connection: 1m cable

Connection: via 3 wires

General features	EWPA010	EWPA030	EWPA050
Operating range at 0.5...4.5V:	0...150 psi / 0...11 bar	15...515 psi / 1...35 bar	14...667 psi / 1...46 bar
Overload:	450 psi / 31 bar	1030 psi / 71 bar	1334 psi / 92 bar
Operating temperature:	-40...120°C	-40...120°C	-40...120°C
Accuracy:	±1.2% span	±1.2% span	±1.2% span
Vibrations:	50...2000 Hz/11 g	50...2000 Hz/11 g	50...2000 Hz/11 g
Power supply:	4.5...5.5V $\overline{=}$	4.5...5.5V $\overline{=}$	4.5...5.5V $\overline{=}$
Outlet voltage:	0.5...4.5V $\overline{=}$ (standard)	0.5...4.5V $\overline{=}$ (standard)	0.5...4.5V $\overline{=}$ (standard)
Outlet current:	8mA max	8mA max	8mA max
Outlet load:	10K Ohm (standard)	10K Ohm (standard)	10K Ohm (standard)
Mechanical connections:	female connector 1/4 SAE (7/16" - 20 UNF)	female connector 1/4 SAE (7/16" - 20 UNF)	female connector 1/4 SAE (7/16" - 20 UNF)

Codes

p/n	description	connector
TD400010	EWPA010	female
TD400030	EWPA030	female

Codes

p/n	description	connector
TD400050	EWPA050	female
CO000027	1m connection cable	

EWHS280 - 300 - 310-2 Humidity probes



Applications

EWHS 280/300/310-2 series probes are specially made for connection to high-precision humidity and humidity/temperature measuring instruments.

Common features

Ambient humidity: 0...10% RH

Maximum load: 250 Ohm

Maximum air speed: 20m/s

Polarity inversion protection: diode

General features	EWHS280	EWHS300	EWHS310-2
Insulation grade:	IP54	IP65	IP65
Installation:	use the clip supplied with the probe	via 2 external slots	via 2 external slots
Electrical connections:	PVC bipolar cable	screw-type terminals	screw-type terminals
Dimensions:	103x25mm	80x80x52mm	80x80x52mm
Power supply:	9...28V=	9...30V=	15...40V= or 12...28V~
Absorption:	20mA max	20mA max	<50mA max
Ambient temperature:	-10...60°C	-30...70°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
Humidity measurement output current:	4 (0%)...20mA (100%)	4 (0%)...20mA (100%)	0 (0%)...20mA (100%)
Response time in constant conditions (63%) at 23°C:	60 sec	typically 10 sec	typically 10 sec
Recovery time from saturation:	360 sec	depends on the air flow rate	depends on the air flow rate
Storage temperature:	-20...70°C	-50...70°C	-50...70°C
Accuracy of humidity measurement (at 23°C):	±5% RH (in the interval 15...90% RH)	±2% RH (in the interval 10...95% RH) ±3% RH (for 10%RH or > 95%RH values)	±2% RH
Number of wires per connection:	2 (blue: power supply; brown: output)	2	4
Air filter:	metal wire mesh	polythene	polythene
Temperature sensor:	-	-	Pt100B
Temperature range:	-	-	-40...60°C (-40...140°F)
Temperature measurement output current:	-	-	0 (-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	-	-

Codes

p/n	description
SN560000	EWHS280
SN520000	EWHS300

Codes

p/n	description
SN510010	EWHS310-2



Applications

Drip protection for devices in the ID and IC series. Applied on the rear of the instrument, these are valid support tools in protecting electrical connectors against humidity.

Part number	Description
ZZ000270	Drip protection Pack of 20

EW BOX, INOX BOX



Applications

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

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

TF - Transformers



Applications

The TF series consists of resin-coated transformers in plastic containers, equipped with fixing tabs and screw terminals for wires $\leq 2.5\text{mm}^2$.

Models with different power supply voltages are available.

Code	Model	Details
TF111106	TF 100...115...120V	230V~/12...24V~ 9.6VA - protected PTC
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

TA - Through-bar ammeter transformers



Applications

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

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

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



Applications

The EWCFW08 series was designed for three-phase induction motors for speed control. They incorporate cutting-edge technology and a complete range of features, along with several additional functions, in a single compact product.

Specifications

Easy installation and operation

Optimised software can be configured from the keypad, allowing the drivers to process and control the devices

General features	EWCFW08
Power supply:	three-phase, 380V~ - 480V~ +10-15% 50-60Hz
Power rating at 400V~ three-phase:	1.5kW - 15kW (constant torque/5 kHz)
Type of control:	V/F vector control without sensors
Ambient operating temperature:	0...40°C
Output frequency:	0 - 300 Hz (resolution: 0.01Hz)
Switching cycle frequency:	2.5kHz, 5kHz, 10kHz, 15kHz
Analogue inputs:	2 x 0...10V _{DC} / 0/4...20mA, resolution: 8 bit
Analogue outputs:	1 x 0...10V _{DC} , 0/4...20mA, resolution: 8 bit
Digital inputs:	4 x 0/24V _{DC}
Digital outputs:	two relay outputs
Display & Keypad:	fitted into the device
Communication interface (optional):	ModBus RTU
Internal PID:	standard
Number of pre-set speeds:	8
Auto Adapt function (Vector Control):	standard
DC suppressor / Line reactance:	standard (internal)
Internal EMC filter:	present (Class A)
PTC input:	analogue input configured as PTC

Codes

p/n	description	details
EWCFW08004300	EWCFW08	1.5kW 4.3A 380V~ - 480V~ three-phase
EWCFW08006500	EWCFW08	2.2kW 6.5A 380V~ - 480V~ three-phase
EWCFW08010000	EWCFW08	4.0kW 10A 380V~ - 480V~ three-phase
EWCFW08013000	EWCFW08	5.5kW 13A 380V~ - 480V~ three-phase

Codes

p/n	description	details
EWCFW08016000	EWCFW08	7.5kW 16A 380V~ - 480V~ three-phase
EWCFW08024000	EWCFW08	11kW 24A 380V~ - 480V~ three-phase
EWCFW08030000	EWCFW08	15kW 30A 380V~ - 480V~ three-phase

ID and IC switches



Applications

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

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

PTC probe table

Ambient temperature		Temperature coefficient	KTY81-121			
(°C)	(°F)	(%/K)	Resistance (Ohm)			Temperature error
			Minimum	Standard	Pressure	
-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

NTC probe table

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

* standard NTC sensor used by Eliwell

NTC probe table - Extended range

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

Temperature probe tables

Pt100 probe table

Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)
-200	18.52	20	107.79	230	186.84	440	260.78	650	329.64
-190	22.83	30	11.67	240	190.47	450	264.18	660	332.79
-180	27.10	40	115.54	250	194.10	460	267.56	670	335.93
-170	31.34	50	119.40	260	197.71	470	270.93	680	339.06
-160	35.54	60	123.24	270	201.31	480	274.29	690	342.18
-150	39.72	70	127.08	280	204.90	490	277.64	700	345.28
-140	43.88	80	130.90	290	208.48	500	280.98	710	348.38
-130	48.00	90	134.71	300	212.05	510	284.30	720	351.46
-120	52.11	100	138.51	310	215.61	520	287.62	730	354.53
-110	56.19	110	142.29	320	219.15	530	290.92	740	357.59
-100	60.26	120	146.07	330	222.68	540	294.21	750	360.64
-90	64.30	130	149.83	340	226.21	550	297.49	760	363.67
-80	68.33	140	153.58	350	229.72	560	300.75	770	366.70
-70	72.33	150	157.33	360	233.21	570	304.01	780	369.71
-60	76.33	160	161.05	370	236.70	580	307.25	790	372.71
-50	80.31	170	164.77	380	240.18	590	310.49	800	375.70
-40	84.27	180	168.48	390	243.64	600	313.71	810	378.68
-30	88.22	190	172.17	400	247.09	610	316.92	820	381.65
-20	92.16	200	175.86	410	250.53	620	320.12	830	384.60
-10	96.09	210	179.53	420	253.96	630	323.30	840	387.55
0	100.00	220	183.19	430	257.38	640	326.48	850	390.48
10	103.90								

Pt1000 probe table

Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (Ohm)	Ambient temperature (°C)	Resistance (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								

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	-	-

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Check details and availability with sales department.

Notes

Sales and Support Phone Contact Numbers

ITALY

ELIWELL CONTROLS s.r.l. - Pieve d'Alpago (Belluno)

Telephone +39 0437 986 111
 Facsimile +39 0437 989 066
 Sales +39 0437 986 100
 E-mail saleseliwell@invensys.com
 Technical helpline +39 0437 986 300
 E-mail techsuppeliwell@invensys.com

ISO 9001



Printed in Italy

SPAIN - Eliwell Iberica S.A. - Valencia

Telephone +34 (0) 96 313 40 49
 Facsimile +34 (0) 96 350 07 87
 E-mail eliwell.comercial@momplet.com

FRANCE - Eliwell France - Paris

Telephone +33 (0) 1 41 47 71 71
 Facsimile +33 (0) 1 47 99 95 95

RUSSIA - Moscow Office - Moscow

Telephone +7 499 611 7975
 Facsimile +7 499 611 7829

GERMANY - Eliwell Deutschland

Postfach 13 01 53 D-90113 Nürnberg
 Klingenhofstraße 71 D-90411 Nürnberg
 Telephone +49 (0) 911 56 93 300
 Facsimile +49 (0) 911 56 93 536
 E-Mail eliwell.deutschland@invensys.com

www.eliwell.de

OTHER COUNTRIES

Telephone +39 0437 986 111
 Facsimile +39 0437 989 066
 Sales +39 0437 986 200
 E-mail saleseliwell@invensys.com
 Technical helpline +39 0437 986 300
 E-mail techsuppeliwell@invensys.com

www.eliwell.it

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