

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, 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 (TM) 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 the maximum efficiency of the refrigeration system in terms of energy saving. The vast range of sizes available makes Eliwell controllers suitable for all possible kinds of refrigeration system.



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MODBUS-RTU

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



RS-485

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



LINK

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



COPY CARD

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



TELEVISSYSTEM

TelevisSystem is a remote management and monitoring system for industrial and commercial systems, 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 form compatible with the most commonly used office IT softwares. 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 95...240V~ or from 12...24V~/12...36V~ gives the installer the possibility of covering most areas of application, thus reducing the number of models that would be necessary if a transformer-type power supply was used.



Applications

The EM 300(LX) is a device for measuring temperature, humidity and pressure in commercial refrigeration and industrial applications.

Common features

Front panel: IP65

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

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

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

Use temperature: -5...55°C

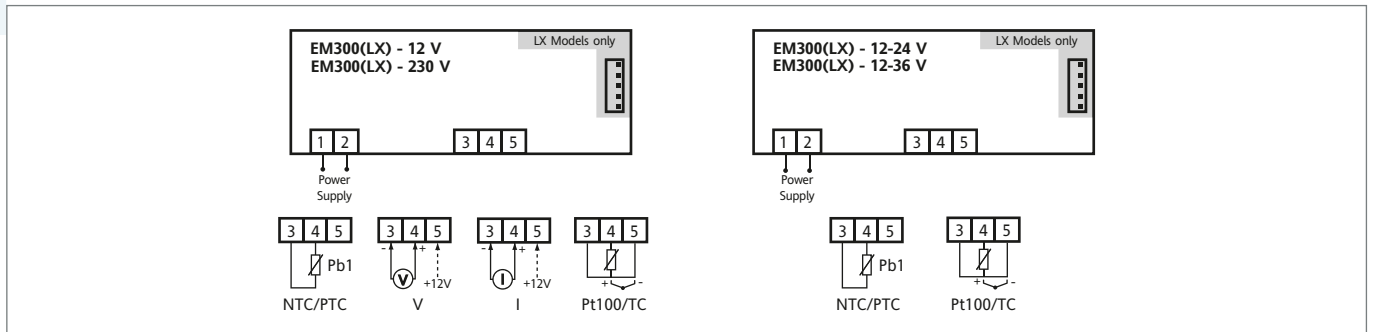
Storage temperature: -30...85°C

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

General features	EM 300(LX) PTC/NTC	EM 300(LX) V/I	EM 300(LX) Pt100/TCJ/TCK
Display range	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • -99...100 * • -99.9...100.0 * • 999...1000 * 	<ul style="list-style-type: none"> • probe Pt100: -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)	1 Pt100 / TCJ / TCK *
Measurement range:	from -55 to 140°C	from -999 to 1000	from -200 to 1350°C
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 to 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
Consumption:	<ul style="list-style-type: none"> • 230V~model: 1.8 W max • 12V~model: 0.5 W max • 12...24V~model: 3 W max 	<ul style="list-style-type: none"> • 230V~model: 1.8 W max • 12V~model: 0.5 W max 	<ul style="list-style-type: none"> • 230V~model: 1.8 W max • 12V~model: 0.5 W max • 12...24V~model: 3 W max
Power supply:	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~ ±10% 50/60Hz • 12...24V~ ±10% 50/60Hz 	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~/= ±10% 50/60Hz 	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~ ±10% 50/60Hz • 12...24V~ ±10% 50/60Hz
LX models			
Serial ports:	TTL for connection to Copy Card and TelevisSystem	TTL for connection to Copy Card and TelevisSystem	TTL for connection to Copy Card and TelevisSystem

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Power supply	Probe	p/n	descr.	Power supply	Probe
TM10D0000D700	EM 300	230V~	PTC/NTC	TM10I00000M700	EM 300	230V~	current
TM10D00X0D700	EM 300 LX	230V~	PTC/NTC	TM10V00000M700	EM 300	230V~	voltage
TM10Z00X0M700	EM 300 LX	230V~	Pt100/TC	TM10I00X0M700	EM 300 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

Common features

Measurement range: -20...70°C

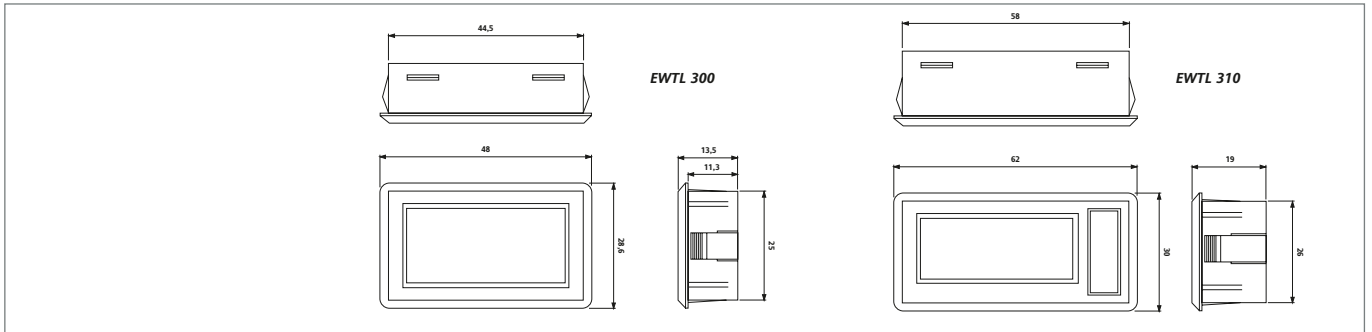
Battery life: about 12 months

Battery: one 1.5V LR 44 or equivalent

Installation: panel

General features	EWTL 300	EWTL 310
Display	2 and a half digit LCD	2 and a half digit LCD
Resolution:	1 or 0.1°C	1 or 0.1°C
Accuracy:	±1°C from 0 to 40°C	better than 0.5% of end of scale
Probe:	connected to instrument, cable length 1.5m	connected to instrument, cable length 0.5 m, 1 m, 2 m or 3 m
Display refresh:	10 seconds	12 seconds
Dimensions:	front panel 48x28.6 mm - depth 13.5 mm	front panel 62x30 mm, depth 19 mm

Dimensions



Codes

p/n	description	probe cable length
T1M1BT0100	EWTL 300	1.5m

Codes

p/n	description	probe cable length
T1M1BT0101	EWTL 310	1.5m



Applications

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

Common features

Front panel: IP65

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

Dimensions: front panel 32x74mm, depth 30mm

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

Use temperature: -5...55°C

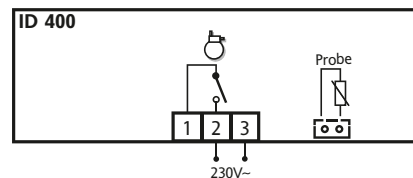
Storage temperature: -30...85°C

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

General features	ID 400
Display range	-5...99°C
Display	no decimal point*, 2 digits+sign
Analogue inputs:	1 NTC (probe included)
Digital outputs	1 SPST output 5(2)A 1/4Hp 250V~
Connections	<ul style="list-style-type: none"> • 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:	230 V~ ±10% 50/60Hz

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Notes
ID1LY000CA701	ID 400	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 plastic resin casing, UL94 V-0, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 32x74mm, depth 59mm

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

Use temperature: -5...55°C

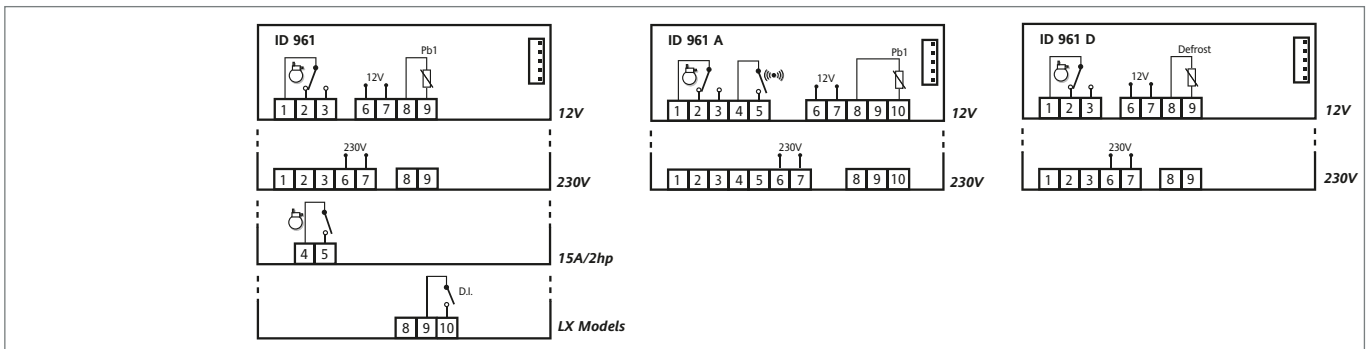
Storage temperature: -30...85°C

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

General features	ID 961(LX)	ID 961/A	ID 961/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)
Serial ports:	TTL for connection to Copy Card	TTL for connection to Copy Card	TTL 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
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			
Serial ports	TTL for connection to Copy Card and TelevisSystem		
Digital inputs	1 clean contact at safety extra low voltage		
Display	3 and a half digits + sign		
HACCP	optional		

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID11D00TCA700	ID 961	8A	230V~
ID16D00TCA700	ID 961	15A	230V~
ID17D00TCA700	ID 961	2HP	230V~
ID1AD00TCA700	ID 961/A	8A	230V~

Codes

p/n	descr.	Relay	Power supply
ID16D00TEH700	ID 961/D	15A	230V~
ID11D10XCH700	ID 961 LX	8A	230V~
ID16D10XCH700	ID 961 LX	15A	230V~



Applications

ID 970 controllers are suitable for any application on refrigeration units at normal or low temperature

Common features

Front panel: IP65

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

Dimensions: front panel 32x74mm, depth 59mm

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

Use temperature: -5...55°C

Storage temperature: -30...85°C

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

General features

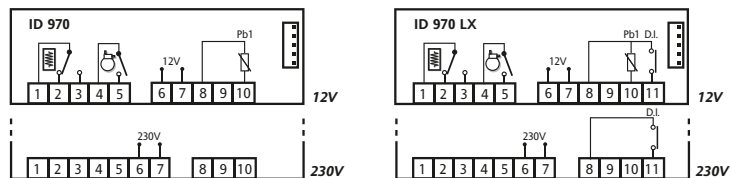
	ID 970(LX)
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C
Display	no decimal point * 3 digits + sign
Analogue inputs	1 PTC or NTC *
Serial ports:	TTL for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~, or SPDT 15A 250V~ + 1 SPDT 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
Consumption:	3VA max
Power supply:	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~/- ±10% 50/60Hz

LX models

Serial ports	TTL for connection to Copy Card and to TelevisSystem
Digital inputs	1 clean contact at safety extra low voltage

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
ID12D00TCD700	ID 970	8A/8A	230V~
ID18D00TCD700	ID 970	15A/8A	230V~
ID12DI0XCH700	ID 970 LX	8A/8A	230V~



Applications

ID 971 controllers are suitable for any application on refrigeration units at normal temperature

Common features

Front panel: IP65

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

Use temperature: -5...55°C

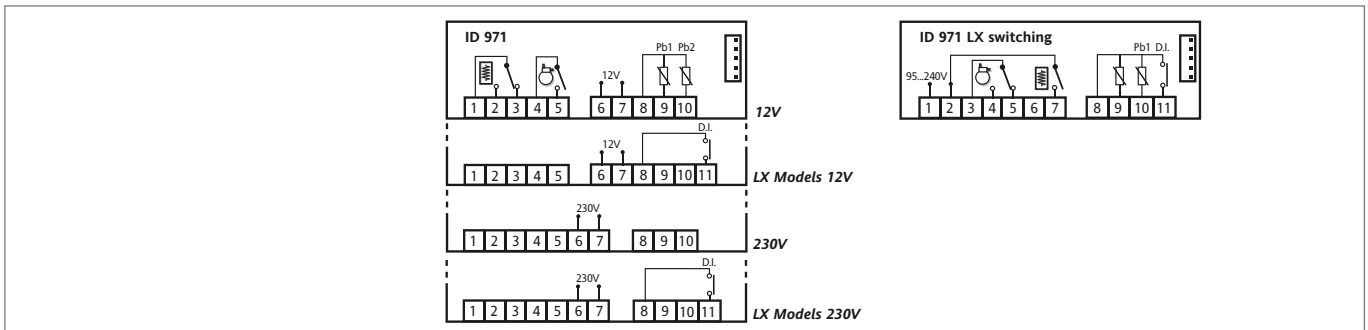
Storage temperature: -30...85°C

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

General features	ID 971(LX)	ID 971 LX switching
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card	TTL 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
Consumption:	<ul style="list-style-type: none"> • 230V model: 3VA max • 12V model: 1.5VA max 	3W max
Power supply:	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~/~ ±10% 50/60Hz 	95...240V~ ±10% 50/60Hz
Buzzer	optional	optional
Dimensions	Depth 59 mm (terminals excluded)	Depth 68 mm (terminals excluded)
LX models		
Serial ports	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card and to TelevisSystem
Digital inputs	1 clean contact at safety extra low voltage	1 clean contact at safety extra low voltage

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID22D00TCD700	ID 971	8A/8A	230V~
ID28D00TCD700	ID 971	8A/15A	230V~
ID29DI0TCH700	ID 971	8A/2HP	230V~
ID22DI0XCH700	ID 971 LX	8A/8A	230V~

Codes

p/n	descr.	Relay	Power supply
ID29DI0XCH700	ID 971 LX	8A/2HP	230V~
ID22DL0XCH300	ID 971 LX buzzer	8A/8A	12V~
ID29DI0XCHH81	ID 971 LX switching	8A/2HP	95...240V~



Applications

The ID 974(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

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

Dimensions: front panel 74x32mm, depth 59mm

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

Use temperature: -5...55°C

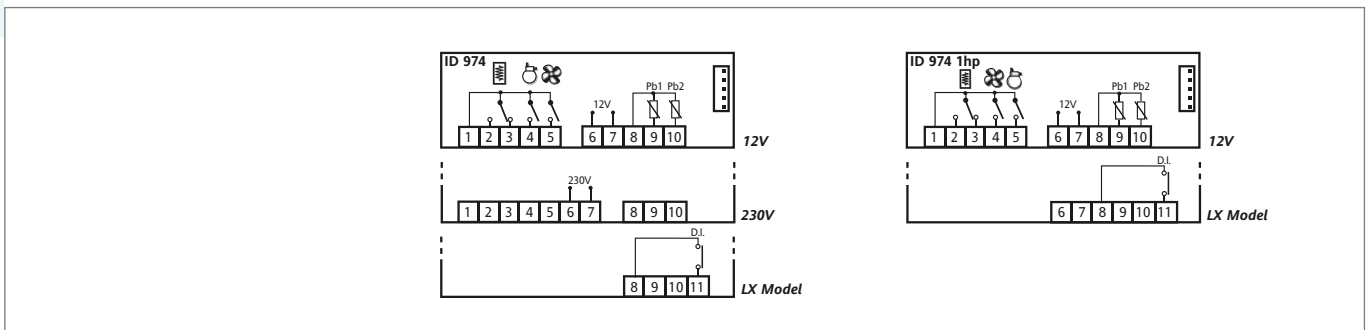
Storage temperature: -30...85°C

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

General features	ID 974(LX)	ID 974(LX) 1HP
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card	TTL for connection to Copy Card
Digital outputs:	1 SPDT 8(3)A 250V~ + 1 SPST 8(3)A 250V~ + 1 SPST 5(2)A 250V~	1 SPDT 15A 1HP 250V~ + 1 SPST 8(3)A 250V~ + 1 SPST 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
Consumption:	1.5VA max	1.5VA max
Power supply:	<ul style="list-style-type: none"> • 230V~ ±10% 50/60Hz • 12V~/- ±10% 50/60Hz 	<ul style="list-style-type: none"> • 12V~/- ±10% 50/60Hz
HACCP	available	available
LX models		
Serial ports	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card and to TelevisSystem
Digital inputs	1 clean contact at safety extra low voltage	1 clean contact at safety extra low voltage

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
ID23DB0TCH700	ID 974	8A/8A/5A	230V~
ID2CDB0TCH300	ID 974	8A/8/15A	12V~

Codes

p/n	descr.	Relay	Power supply
ID23DM0XCD700	ID 974 LX HACCP	8A/8A/5A	230V~
ID23DL0XCH700	ID 974 LX	8A/8A/5A	230V~



Applications

The range of ID 974 controllers is further extended by the addition of the new ID 974(LX) switching with universal power supply and the ID 974(LX) DCC (deep cooling cycle) that combines blast chilling control with temperature control for “ventilated” units

Common features

Front panel: IP65

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

Use temperature: -5...55°C

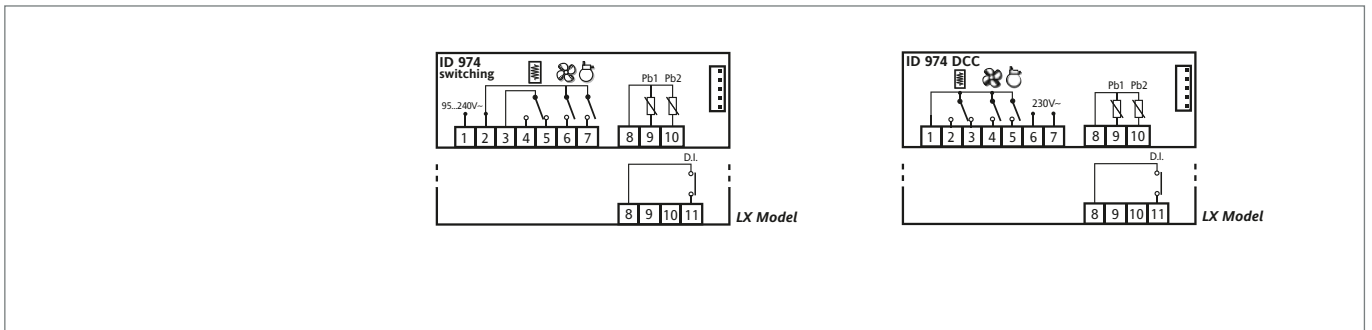
Storage temperature: -30...85°C

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

General features	ID 974(LX) switching	ID 974(LX) DCC
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card or systems based on Modbus protocol	TTL 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
Consumption:	3VA max	3VA max
Power supply:	95...240V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Dimensions:	depth 68 mm	depth 59 mm
LX models		
Serial ports	TTL for connection to Copy Card and to Televis System	TTL for connection to Copy Card and to Televis System
Digital inputs	1 clean contact at safety extra low voltage	1 clean contact at safety extra low voltage

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID2EDB0TCHH00	ID 974 switching	2HP/8A/5A	95...240V~
ID2EDLOXCHH00	ID 974 LX switching	2HP/8A/5A	95...240V~

Codes

p/n	descr.	Relay	Power supply
ID23WB0TGD702	ID 974 DCC	8A/8A/5A	230V~



Applications

ID 975 LX controllers are suitable for applications on refrigeration units at normal or low temperature

Common features

Front panel: IP65

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

Dimensions: front panel 74x32mm, depth 59mm

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

Use temperature: -5...55°C

Storage temperature: -30...85°C

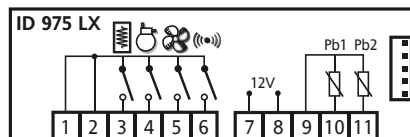
Ambient humidity for use and storage: 10...90% RH (non-condensing)

General features

General features	ID 975 LX
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C
Display:	no decimal point * 3 and a half digits + sign
Analogue inputs:	2 PTC or NTC *
Digital inputs:	1 clean contact at safety extra low voltage
Serial ports:	TTL for connection to Copy Card and to TelevisSystem
Digital outputs:	1 SPST 8(3)A 250V~ + 1 SPST 8(3)A 250V~ + 1 SPST 5(2)A 250V~ + 1 SPST 5(2)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
Consumption:	3VA max
Power supply:	12V~/±10% 50/60Hz
Buzzer:	optional

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Power supply
ID24D00XCD300	ID 975 LX	12V~/±

Codes

p/n	descr.	Power supply
ID24DB0XCD300	ID 975 LX buzzer	12V~/±

eliwell



Applications

IS 972 and IS 974 controllers are suitable for applications on normal or low temperature ventilated refrigeration units and are made up of a power slave unit, interconnected via a multipole cable with snap-on connector.

Common features

Front panel: IP65

Dimensions: front panel 74x32mm, depth 30mm

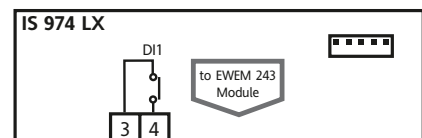
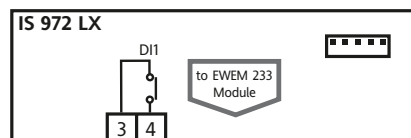
Container: PC+ABS plastic resin casing, UL94 V-0, polycarbonate window, thermoplastic resin keys

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

General features	IS 972 LX	IS 974 LX
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C
Display	no decimal point* 3 digit and ms + sign	no decimal point* 3 digits + sign
Digital inputs	1 clean contact at safety extra low voltage	1 clean contact at safety extra low voltage
Connections:	telephone connector for connection to EWEM 233 expansion module, screw-on terminal block for digital input	telephone connector for connection to EWEM 243 expansion module, screw-on terminal block for digital input
Serial ports:	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card and to TelevisSystem
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
Consumption:	see EWEM 233 module	see module EWEM 243
Power supply:	from EWEM 233 module	from module EWEM 243

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Configuration
IS23D10XCH000	IS 972 LX	EWEM 233

Codes

p/n	descr.	Configuration
IS24D10XCD000	IS 974 LX	EWEM 243
IS24DL0XCD000	IS 974 LX with buzzer	EWEM 243



Applications

Power modules for connection to IS 972 LX and IS 974 LX controllers via multipole cable with snap-on connector

Common features

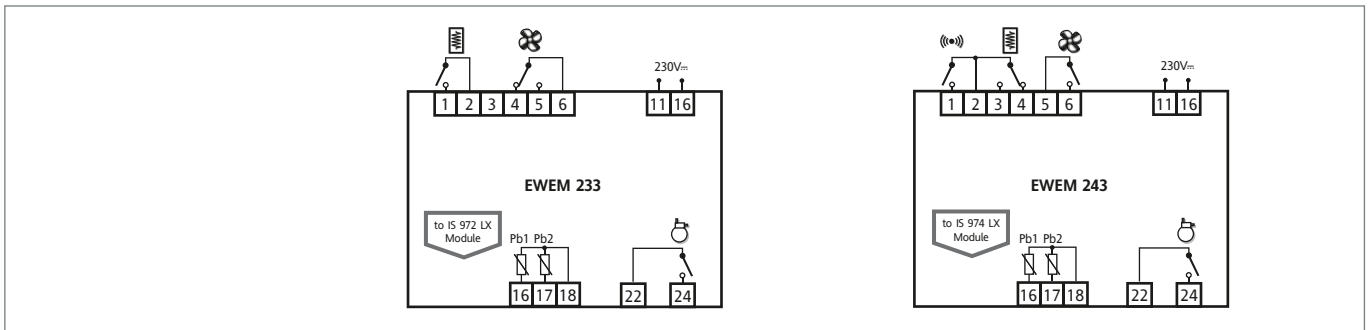
Storage temperature: -30...75°C

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

General features	EWEM 233	EWEM 243
Container:	plastic, 4 DIN modules	plastic, 4 DIN modules
Dimensions:	70x85 mm, height 53mm	70x85 mm, height 53mm
Installation:	on DIN rail (Omega 3) or wall-mounted	on DIN rail (Omega 3) or wall-mounted
Connections:	telephone connector for connection to main IS 972 LX module, together with screw-on terminal block for the other connections	telephone connector for connection to main IS 974 LX module, together with screw-on terminal block for the other connections
Use ambient temperature:	-5...50°C	-5...50°C
Analogue inputs:	2 PTC or NTC *	2 PTC or NTC *
Digital outputs:	1 SPST 15(12)A 250V~ + 1 SPDT 10(7)A 250V~ + 1 SPST 16(8)A 250V~	1 SPST 15(12)A 250V~ + 1 SPDT 10(7)A 250V~ + 1 SPST 8(3)A 250V~ + 1 SPST 8(3)A 250V~
Consumption:	3VA max	3VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Master:	IS 972 LX	IS 974 LX

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Power supply
DS340000DC700	EWEM 233	230V

Codes

p/n	descr.	Power supply
DS440000DC702	EWEM 243	230V



Applications

ID 981 and ID 983 controllers are suitable for any application on ventilated refrigeration units at normal or low temperature. The Echo is a remote signal repeater connectable to these controllers. ID 983 /S/E/CK units are compact electronic controllers specially designed for supermarket refrigeration systems; equipped with on-board integrated RS-485, connection for 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 plastic resin casing, UL94 V-0, polycarbonate window, thermoplastic resin keys

Dimensions: front panel 74x32mm, depth 66mm

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

Use temperature: -5...55°C

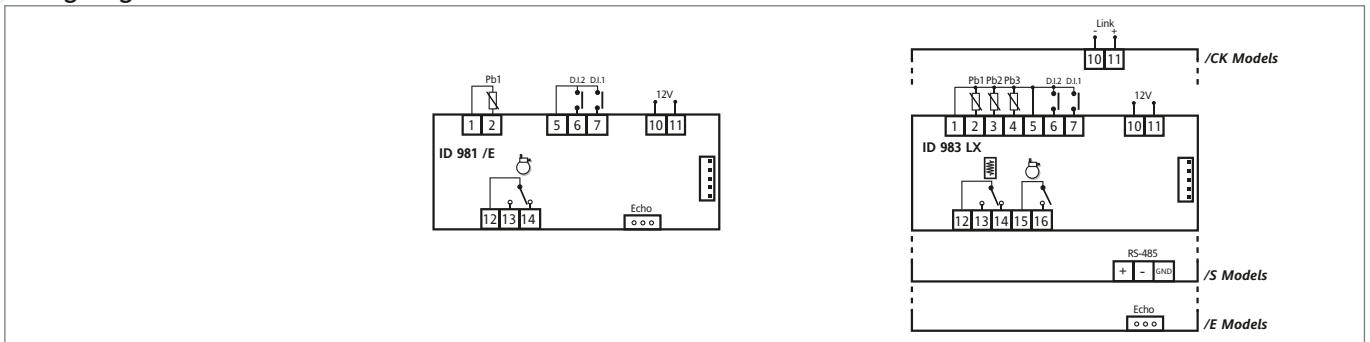
Storage temperature: -30...85°C

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

General features	ID 981/E	ID 983/S/E/CK
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *	3 PTC or NTC *
Digital inputs:	2 voltage-free inputs	2 voltage-free inputs
Serial ports:	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card + internal RS-485 for connection to TelevisSystem or systems based on Modbus protocol
Digital outputs:	1 SPDT 8(3)A 250V~	1 SPDT 8(3)A 1/2HP 250V~ + 1 SPDT 8(8)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
Consumption:	1.5VA max	2.5W max
Power supply:	12V~/±10% 50/60Hz	12...24V~/12...36V~ ±10% 50/60Hz or 95...240V~ ±10%
Output for Echo:	present	present
Link:	not available	present
Clock:	not available	present
HACCP:	not available	present

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Power supply
ID11DI3TCD380	ID 981/E /C	12V~

Codes

p/n	descr.	Plus	Power supply
ID32DF05CDH01	ID 983 /S /CK	RTC	95...240V~



Applications

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

ID 985 /S/E/CK units are compact electronic controllers specially designed for supermarket refrigeration systems; 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 plastic resin casing, UL94 V-0, polycarbonate window, thermoplastic resin keys

Use temperature: -5...55°C

Storage temperature: -30...85°C

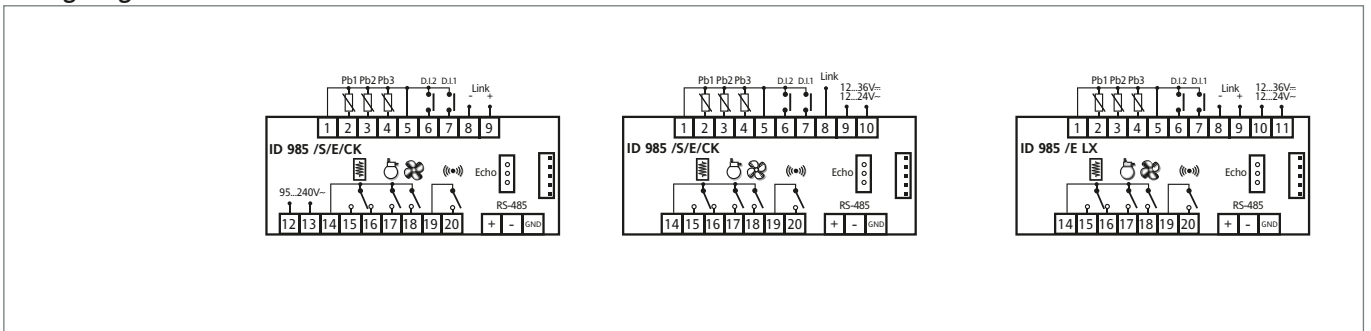
Ambient humidity for use and storage: 10...90% RH (non-condensing)

General features

General features	ID 985/S/E/CK	Echo
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -50.0...140.0°C 	<ul style="list-style-type: none"> • 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	-
Serial ports:	TTL for connection to Copy Card and to 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 quick-connection terminal block
Digital outputs:	1 SPDT 5(2)A 1/4HP 250V~ + 3 SPST 8(3)A 250V~	-
Measurement range:	from -55 to 140°C	-
Accuracy:	better than 0.5% of end of scale +1 digit	-
Resolution:	0.1°C	1 or 0.1°C
Consumption:	2.5W max	-
Power supply:	12...24V~/12...36V~ oR 95...240V~ ±10% 50/60Hz	from the instrument it is connected to
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	-
Link:	present	-
Clock:	present	-

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Plus	Power supply
ID34DR2SCD400	ID 985/S/E/CK	RTC+Link	12...24V~
ID34DR2SCDH00	ID 985/S/E/CK	RTC+Link	95...240V~

Codes

p/n	descr.
EH000010VE000	Echo



Applications

ID 983LX and ID 985LX controllers are specially designed for supermarket refrigeration systems.

Common features

Front panel: IP65

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

Dimensions: front panel 74x32mm, depth 66mm

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

Use temperature: -5...55°C

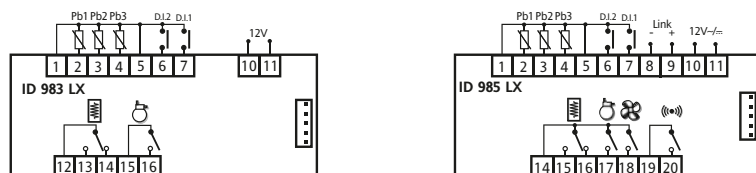
Storage temperature: -30...85°C

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

General features	ID 983 LX	ID 985 LX
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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
Serial ports:	TTL for connection to Copy Card and to TelevisSystem or systems based on Modbus protocol	TTL for connection to Copy Card and to TelevisSystem or systems based on Modbus protocol
Digital outputs:	1 SPDT 8(3)A 1/2HP 250V~ 1 SPST 8(3)A 1/2HP 250V~	1 SPDT 8(3)A 1/2HP 250V~ + 2 SPST 8(3)A 1/2HP 250V~ 1 SPST 5(2)A 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
Consumption:	1.5VA max	3VA max
Power supply:	12V~/~ ±10% 50/60Hz	12V~/~ ±10% 50/60Hz
Clock:	available	available
Link:	not available	available

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
ID32DF0XCD300	ID 983 LX	8A/8A	12V~/~

Codes

p/n	descr.	Relay	Power supply
ID34DF1XCD300	ID 985 LX	8A/8A/8A/5A	12V~/~



Applications

ID 985 LX HotGas controllers are specially designed for supermarket refrigeration systems, with hot gas defrosting.

Common features

Front panel: IP65

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

Dimensions: front panel 74x32mm, depth 59mm

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

Use temperature: -5...55°C

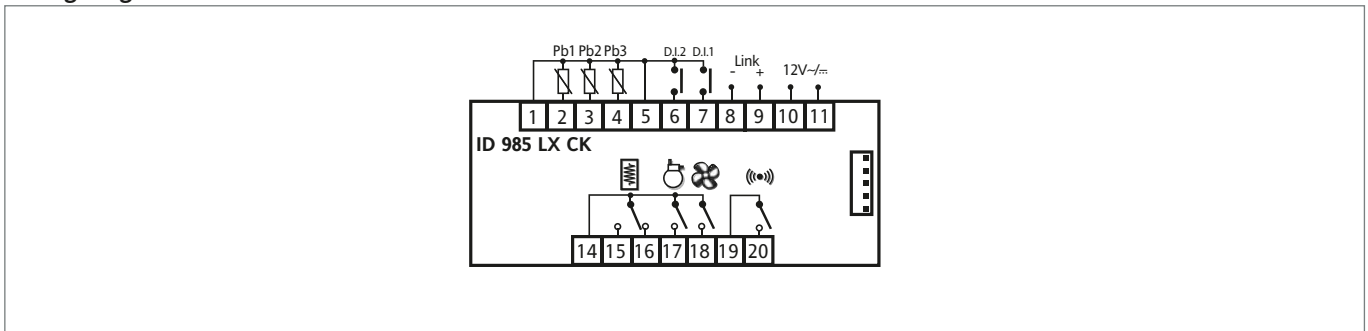
Storage temperature: -30...85°C

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

General features	ID 985 LX HotGas	ID 985 LX HACCP	ID 985 LX HACCP yearly calendar
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card and to TelevisSystem	TTL for connection to Copy Card and to 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
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

*(selectable by parameter).

Wiring diagrams



Codes

p/n	descr.	Relay	Power supply
ID34DF1XCD310	ID 985 LX HotGas	8A/8A/8A/5A	12V
ID34DP0XCD390	ID 985 LX HACCP	8A/8A/8A/5A	12V

Codes

p/n	descr.	Relay	Power supply
ID34DT0XCD380	ID 985 LX yearly calendar	8A/8A/8A/5A	12V



Applications

IWC 720 and IWC 730 devices are suitable for applications on ventilated refrigeration units at normal or low temperature

Common features

Front panel: IP65

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

Use temperature: -5...55°C

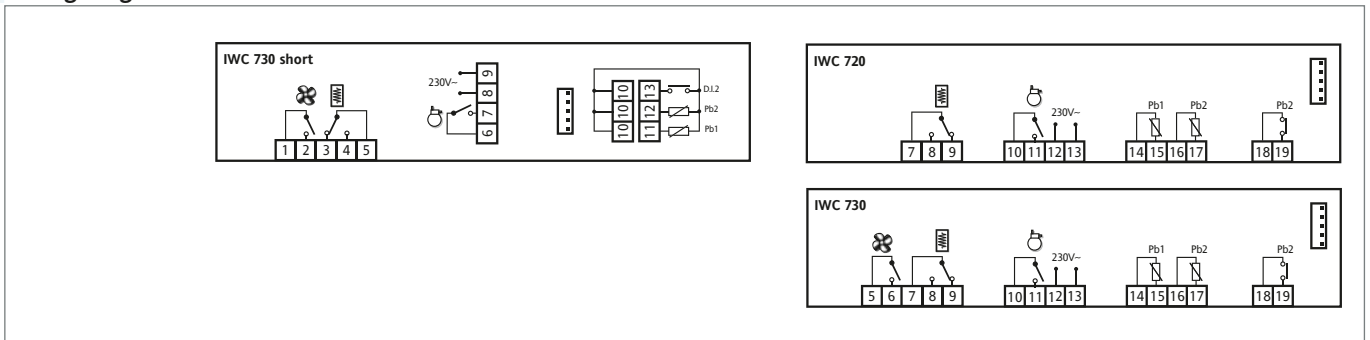
Storage temperature: -30...85°C

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

General features	IWC 730 short	IWC 720	IWC 730
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 safety extra low voltage	1 clean contact at safety extra low voltage	1 clean contact at safety extra low voltage
Serial ports:	TTL for Copy Card connection for connection to Televis System	TTL for connection to Copy Card for connection to Televis System	TTL for connection to Copy Card for connection to 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
Consumption:	6VA max	6VA max	6VA 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:	optionals	optionals	optionals
Buzzer:	optional	optional	optional
HACCP:	optional	optional	optional

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Relay	Power supply
WC23DI0TQD780	IWC 730 short	2HP/8A/8A	230V~
WC22DI0TCD790	IWC 720	2HP/1HP	230V~

Codes

p/n	descr.	Relay	Power supply
WC23DI0TCD790	IWC 730	2HP/8A/8A	230V~



Applications

IWC 740 and IWC 750 devices are suitable for applications on ventilated refrigeration units at normal or low temperature

Common features

Front panel: IP65
 Container: PC+ABS plastic resin casing, UL94 V-0, 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)

Use temperature: -5...55°C

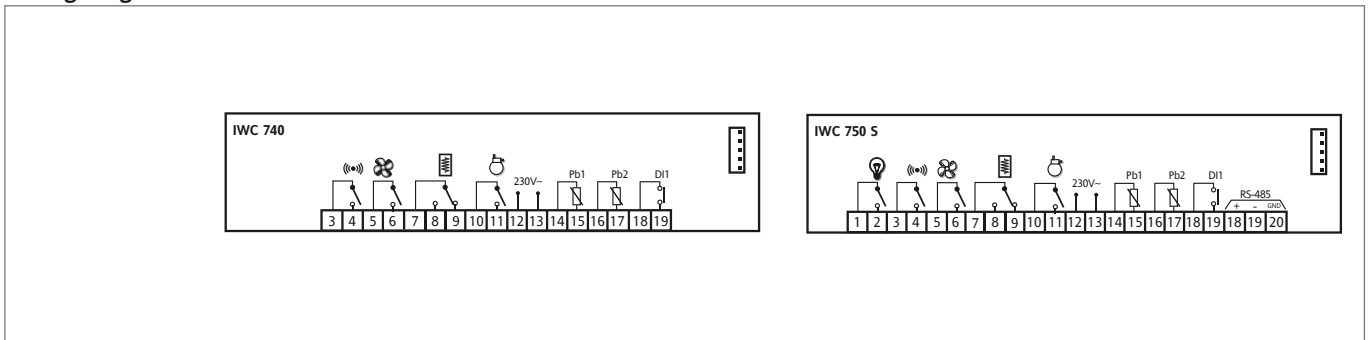
Storage temperature: -30...85°C

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

General features	IWC 740	IWC 750 /S
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -50.0...140.0°C 	<ul style="list-style-type: none"> • 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 safety extra low voltage	1 clean contact at safety extra low voltage
Serial port:	TTL for connection to Copy Card for connection to TelevisSystem	TTL for connection to Copy Card and internal RS-485 for connection to TelevisSystem 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
Consumption:	6VA max	6VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Removable terminals:	optionals	optionals

*(selectable by parameter).

Wiring diagram



Codes p/n	descr.	Relay	Power supply	Codes p/n	descr.	Relay	Power supply
WC24DI0TCD790	IWC 740	8A/1HP/8A/8A	230V~	WC25DI0TCD790	IWC 750	2HP/1HP/8A/8A/8A	230V~
WC24DL0TCD799	IWC 740 buzzer	8A/1HP/8A/8A	230V~	WC25DL0TCD799	IWC 750 buzzer	2HP/1HP/8A/8A/8A	230V~
				WC25DI0SCD700	IWC 750/S	2HP/1HP/8A/8A/8A	230V~

IWC 740 Common Line - IWC 750 Common Line



Applications

IWC 740 and IWC 750 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 the refrigeration systems used in the preservation and processing of food for kitchens and bakeries.

Common features

Front panel: IP65

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

Use temperature: -5...55°C

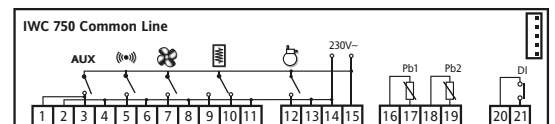
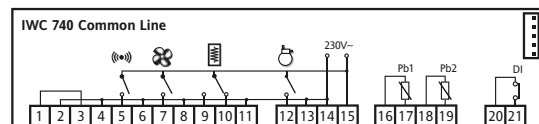
Storage temperature: -30...85°C

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

General features	IWC 740	IWC 750
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 safety extra low voltage	1 clean contact at safety extra low voltage
Serial ports:	TTL for connection to Copy Card	TTL 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
Consumption:	9VA max	9VA 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	IWC 740 Common Line	230V

Codes

p/n	descr.	Power supply
WC2GDL0TCD700	IWC 750 Common Line	230V



Applications

The IWC 750 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 IWC 750 Twin can set 2 different preservation temperatures.

Common features

Front panel: IP65

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

Use temperature: -5...55°C

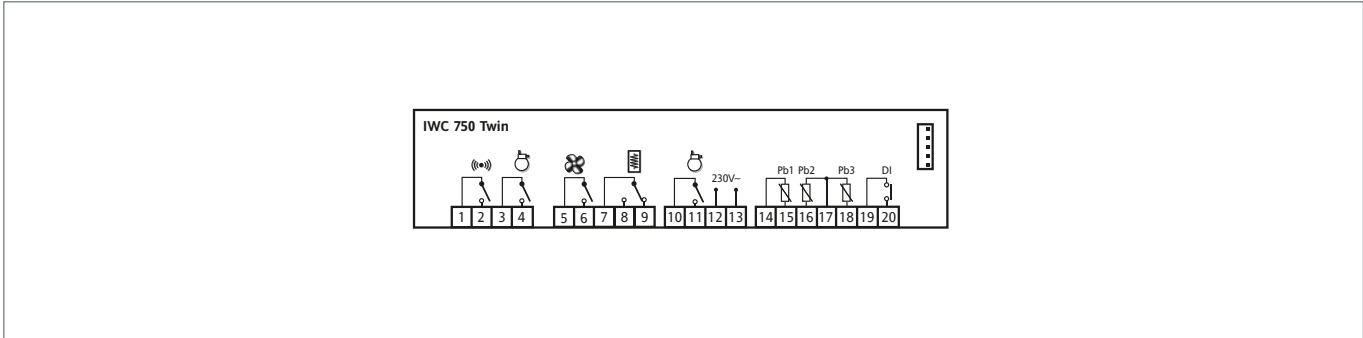
Storage temperature: -30...85°C

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

General features	IWC 750 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 safety extra low voltage
Serial ports:	TTL 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
Consumption:	6VA max
Power supply:	230V~ ±10% 50/60Hz
Buzzer	optional

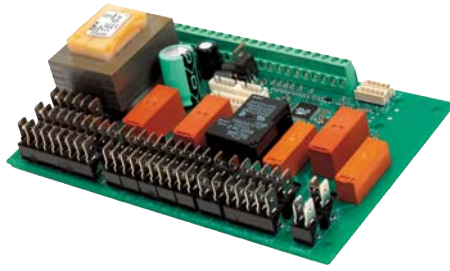
*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Power supply
WC35DL0TTD790	IWC 750 Twin	230V



Applications

The IWP family of 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: Card (no cover)

Installation: adaptable to container sizes that comply with DIN specifications (installed on DIN rail)

Use temperature: -5...55°C

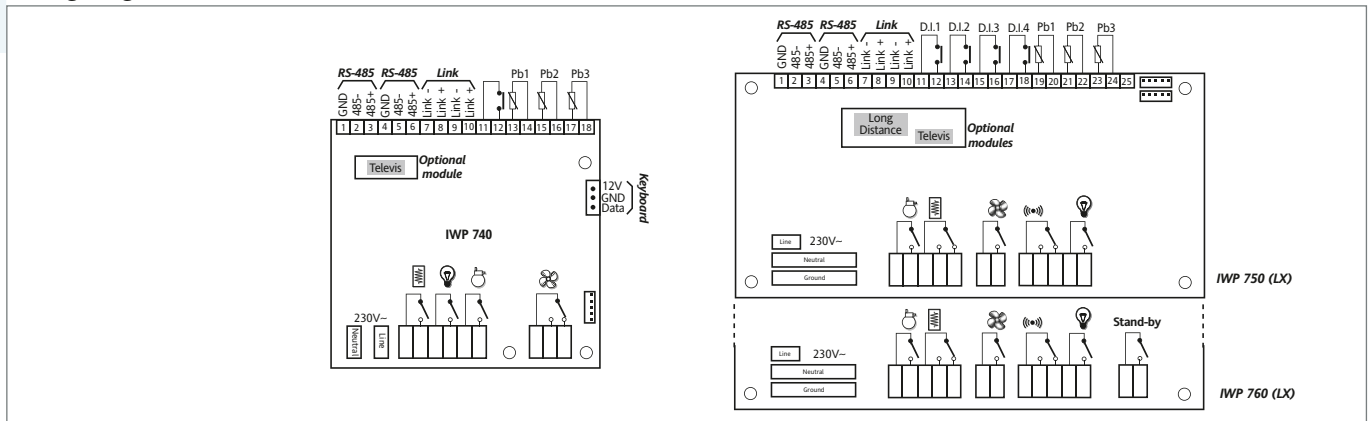
Storage temperature: -30...85°C

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

General features	IWP 740	IWP 750	IWP 760
Analogue inputs:	3 NTC or PTC *	3 NTC or PTC *	3 NTC or PTC *
Digital inputs:	1 clean contact at safety extra low voltage	4 clean contacts at safety extra low voltage	4 clean contacts at safety extra low voltage safety voltage
Serial ports:	1 TTL for connection to Copy Card + 1 optional RS-485 module for connection to TelevisSystem	1 TTL for connection to Copy Card + 1 TTL for connection to TelevisSystem 1 optional RS-485 module for connection to TelevisSystem	1 TTL for connection to Copy Card + 1 TTL for connection to TelevisSystem 1 optional RS-485 module for connection to TelevisSystem or systems based on Modbus protocol
Digital outputs:	2 SPST 15A 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~
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
Consumption:	6VA max	8VA max	8VA 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	IWP 740	1HP/1HP/8A/8A	230V	-
WP34DF1PCH790	IWP 740	1HP/1HP/8A/8A	230V	YES
WP35D11XCD700	IWP 750 LX		230V	-

Codes

p/n	descr.	Power supply	RTC
WP35DF1XCD700	IWP 750 LX	230V	YES
WP36D11XCD700	IWP 760 LX	230V	-
WP36DF1XCD700	IWP 760 LX	230V	YES



Applications

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

Common features

Use temperature: -5...55°C

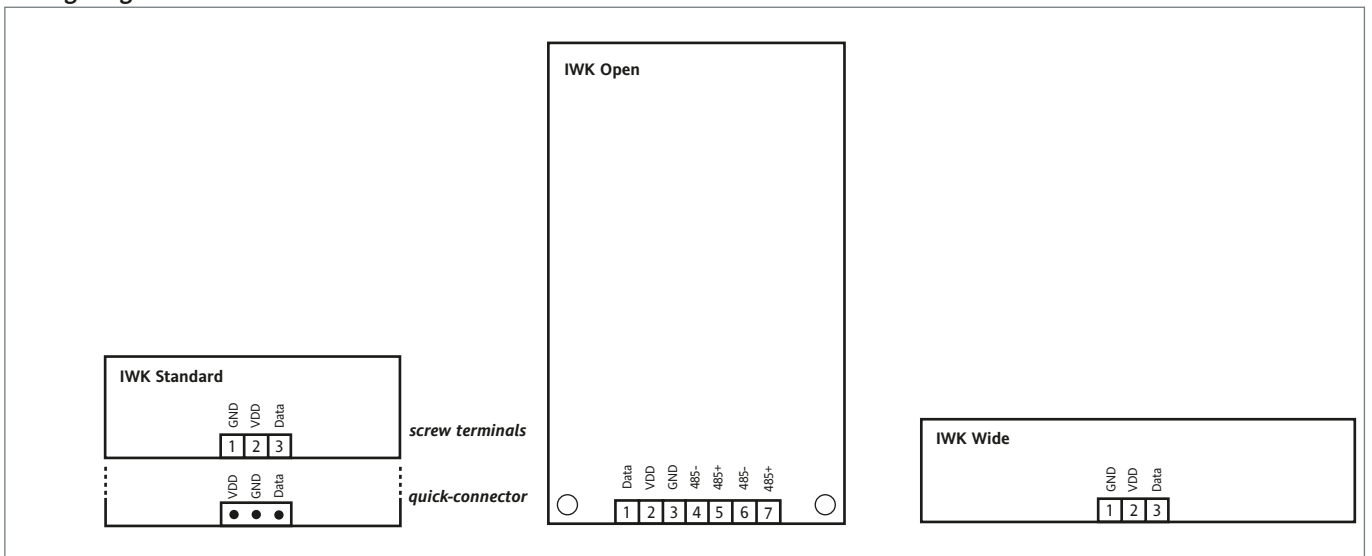
Storage temperature: -30...85°C

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

General features	IWK STANDARD	IWK OPEN	IWK WIDE
Container:	PC+ABS plastic resin casing, UL94 V-0, polycarbonate window, thermoplastic resin keys.	Card (no cover)	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
WK2600100H000	IWK Wide

Codes

p/n	descr.
WK0600100D000	IWK Open



Applications

The EWDR product line, available in 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 4 DIN modules

Dimensions: front panel 70x85mm, depth 61mm

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

Use temperature: -5...55°C

Storage temperature: -30...85°C

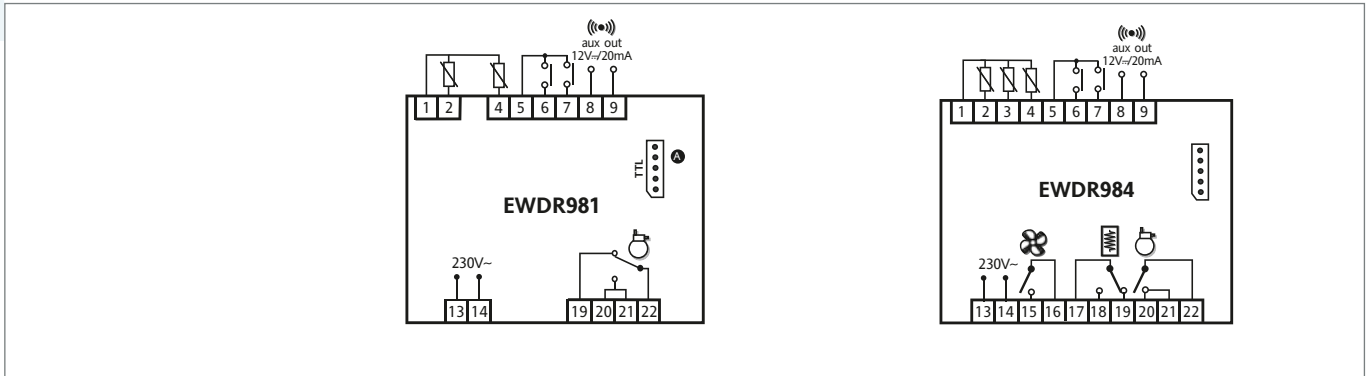
Ambient humidity for use and storage:
10...90% RH (non-condensing)

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

General features	EWDR 981	EWDR 984
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card	TTL 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
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	EWDR 981	230V~

Codes

p/n	descr.	Power supply
DR3CDI0TCD700	EWDR 984	230V~



Applications

The EWDR product line, available in 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 EWDR 983 LX and EWDR 985 LX devices are equipped with an internal clock (RTC) for the management of the defrostings and the RS-485 serial port for the connection to TelevisSystem.

Common features

Front panel: IP65

Container: plastic casing 4 DIN modules

Dimensions: front panel 70x85mm, depth 61mm

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

Use temperature: -5...55°C

Storage temperature: -30...85°C

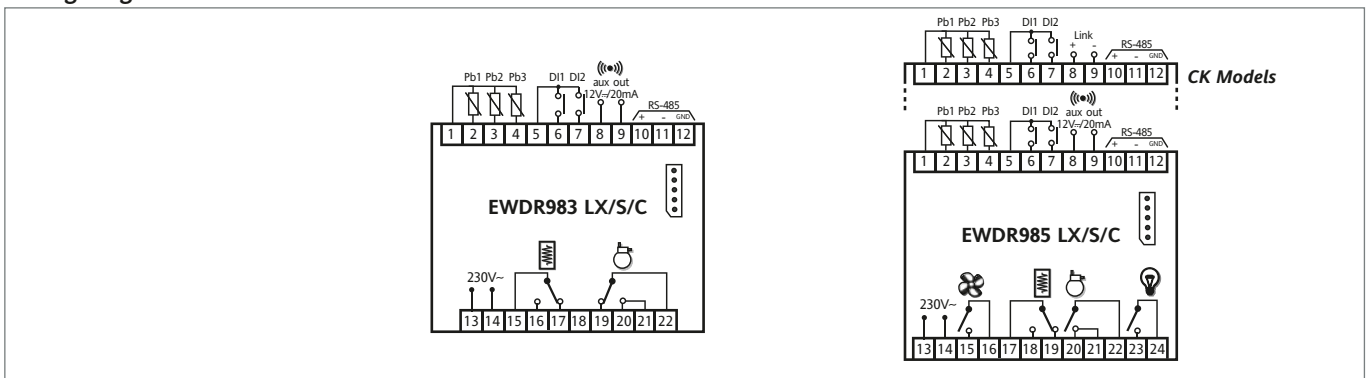
Ambient humidity for use and storage:
10...90% RH (non-condensing)

Connections: on screw-on terminal block for ≤ 2.5mm² wires
(one wire only per terminal for power connections)

General features	EWDR 983 LX /S/C	EWDR 985 LX /S/C/K
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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 *
Serial ports:	TTL for connection to Copy Card + RS485 for connection to TelevisSystem	TTL for connection to Copy Card + RS485 for connection to TelevisSystem
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
Consumption:	5VA max	5VA max
Power supply:	230V~ ±10% 50/60Hz	230V~ ±10% 50/60Hz
Link:	not available	available
Clock:	available	available

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Power supply
DR38DI0TCD700	EWDR 983	230V
DR38DF0TCD700	EWDR 983 /C	230V
DR38DF0SCD700	EWDR 983 LX	230V

Codes

p/n	descr.	Analogue output	Power supply
DR34DI0TCD700	EWDR 985		230V
DR35DR0SCD700	EWDR 985 LX	12V~/20mA	230V



Applications

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

Common features

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

Use temperature: -5...55°C

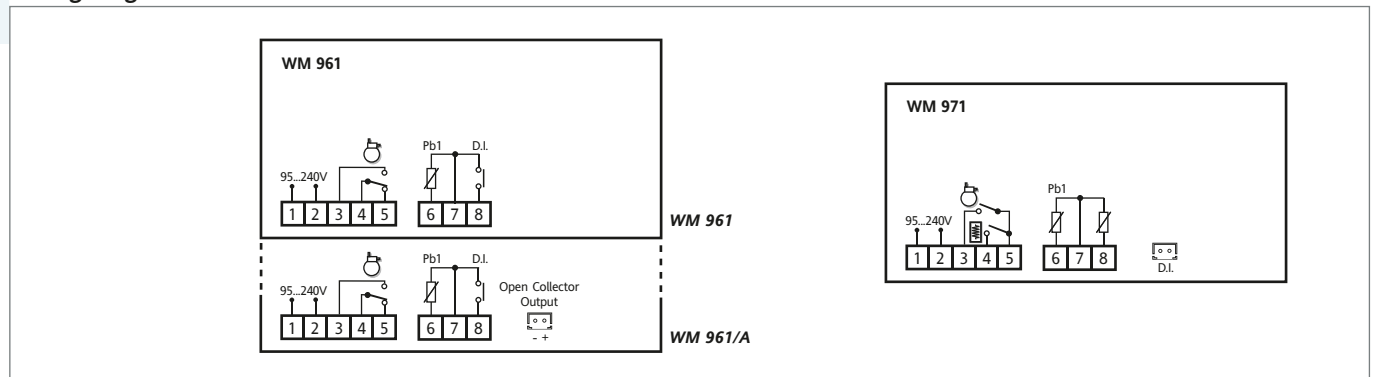
Storage temperature: -30...85°C

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

General features	WM 961 /A	WM 971
Display range:	<ul style="list-style-type: none"> • NTC probe: -50.0...110.0°C • PTC probe: -55.0...140.0°C 	<ul style="list-style-type: none"> • 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
Consumption:	2W max	2W max
Power supply:	95...240V~ ±10% 50/60Hz	95...240V~ ±10% 50/60Hz

*(selectable by parameter).

Wiring diagram



Codes

p/n	descr.	Power supply
WM1GDL00BHH00	WM 961/A	95...240V

Codes

p/n	descr.	Power supply
WM2IDB00CHH00	WM 971	95...240V