cod. 9IS44019
rel. 10/05 -GB-

IC 912 LX

NTC-PTC/ P R V-I I-V/ Pt100 Tc

electronic controller with single intervention point

BUTTONS

UP
Scrolls through the menu items
Increases the values
Par. programmable
(see par. H31)

DOWN
Scrolls through the menu items
Decreases the values
Parameter programmable
(see H32 parameter)

fnc
ESC function (quit)
Parameter programmable
(see par. H33)

set
Accesses the set point and Menus
Activates functions
Confirms the commands
Displays the alarms (if active)

LED

Relay OUT
ON for relay on (energized);blinking for delay, protection or enabling blocked.

Alarm
ON for active alarm; blinking for silenced alarm

Soft Start (and Set Point setting)
ON for reduced Set Point;
blinking when Soft Start function is on;

MACHINE STATUS MENU

a) Press the 'set' button and release it to access the machine status menu. In normal conditions, the label for the Set point value can be found in the menu. Once the 'SP1' label has been displayed, press the "set" button to display the Setpoint value.

The Setpoint value appears on the display. To change the Set point value, use the "UP" and "DOWN" buttons within 15 seconds. If you press the "set" button again, when the fnc button is pressed or 15 seconds elapse, the last value displayed will be stored and the "SP1" label will reappear on the display.

b) If alarms are present, the "AL" label appears.

By using the "UP" and "DOWN" buttons, you can scroll through all the folders in the menu:
-AL: alarm folder (if alarms present, except for faulty probes/probe errors);
-SP1: Set point 1 setting folder.

c) If an alarm condition exists when the Machine Status menu is accessed, the "ALfolder label appears.

(example: when maximum and minimum temperature alarms are present)

Use the UP and DOWN buttons to scroll through the list of active alarms and press 'set' to display the selected alarm.

PROGRAMMING MENU

The menu is divided into 2 levels; once users have pressed the 'set' button for 5 seconds, they can access the user level folders (1)

Navigation at user level(1):

• By using the 'UP' / 'DOWN' buttons you can scroll through all the folders in the programming menu that only contain user level parameters (1)

How to access the installer level (2):

• By using the 'UP' / 'DOWN' buttons, scroll through the user level folders (1) until the folder with the "CnF" label is displayed. Then press 'set' to access the parameters contained in it.

• By using the 'UP' / 'DOWN' all the parameters in the user level (1) in 'CnF' are displayed, continue until the 'PA2' label is not longer displayed and press 'set'.

• By pressing the 'set' button next to 'PA2' the first folder containing installer level parameters will be displayed and then the 'rE1' folder.

Navigation at installer level(2):

• By using the 'UP' / 'DOWN' buttons you can scroll through all the folders in the programming menu that only contain installer level parameters (2)

How to modify the parameter value (on both levels):

• When the 'set' button is pressed, the first folder in the menu is displayed. (e.g.: "rE1" folder)

• By using the 'UP' / 'DOWN' buttons you can scroll through all the folders in current level.

• By pressing the 'set' button next to the selected folder (in this case "SFt") the first parameter in the current level will be displayed. Select the desired parameter using the 'UP' / 'DOWN' keys.

• By pressing the 'set' button the value of the selected parameter is displayed and by using the 'UP' and 'DOWN' buttons it can be modified.

PASSWORD

Access to parameter handling both at user level and installer level can be limited by using passwords. The passwords can be enabled by setting the PA1 (user password) and PA2 (installer password) in the 'dIS' folder. The passwords are enabled if the value of the 2 parameters PA1 and PA2 is not 0.

• To access the "Programming" menu hold down the "set" button for more than 5 seconds.
If specified, the user level(1) access PASSWORD will be requested

• If password 1 is enabled (not 0) you will be asked to enter it. Perform the operation by selecting the correct value using the 'UP' and 'DOWN' keys and press the 'set' button to confirm.

Installer level (2) parameters

In the programming menu scroll through the folders containing the user level parameters using the UP' and 'DOWN' buttons until the CnF folder is displayed.

- Press the 'set' button to enter the 'CnF' folder where the 'PA2' label is present.
- Scroll through the folder parameters and press the 'set' button next to the 'PA2' label, '0' will appear on the display.

- Use the 'UP' / 'DOWN' buttons to select the correct value of the installer password and then press the 'set' button to access the installer level parameters (2).

If the password is not entered correctly, the device will display the 'PA2' label again and the operation will have to be repeated.

At each level in both menus, when the "fnc" button is pressed or the 15 second time out elapses, you are taken back to the higher display level and the last value on the display is stored.

COPY CARD

The Copy Card is an accessory connected to the TTL serial port used for quick programming of the unit parameters (upload and download parameter map to one or more units of the same type). Upload (UL label), download (dL label) and copy card formatting (Fr label) operations are performed in the following way:

- The 'FPr' folder contains the commands necessary for use of the Copy Card. Press 'set' to access the functions.

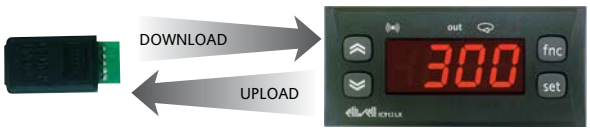
- Use the 'UP' / 'DOWN' buttons to display the required function. Press the 'set' and uploading (or downloading) will be performed.

- If the operation is successful 'y' will be displayed, if it is not successful, 'n' will be displayed.

Download from reset

Connect the copy card when the instrument is OFF. The programming parameters are downloaded when the device is switched on. At the end of the lamp test, the following messages are displayed for about 5 seconds:

- dLY label if copy operation is successful
- DLn label if operation fails



Uploading and Downloading parameters from instrument

NOTE:

- after the parameters have been downloaded, the device uses the downloaded parameter map settings.
- **see** "FPr folder" in Parameter Table and Description of parameters

FUNCTIONS

The following functions are available in the FnC folder (last folder visible from the Programming Menu, level 1):

Function	Function label ACTIVE	Function label NOT ACTIVE	D.I.	Button	Active function signalling
soft start	SOn	SOF*	1	1	LED blinking
economy set point	OSP	SP*	2	2	LED ON
shut-down	bOn*	bOF	3	3	LED ON
stand-by	On*	OF	6	6	LED ON
maintenance request	Atn	AtF*	7	7	UnP lampeggiante

***** indicates default

NOTE: to modify the status of a specified function press the 'set' button

NOTE: If the unit is switched off, the function labels go back to their default status.

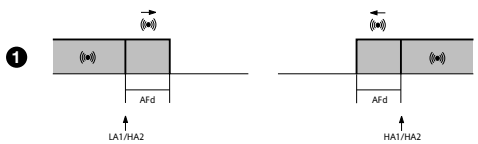
ALARMS

LABEL	ALARM	CAUSE	EFFECTS*	Resolving problems	IC 912 LX MODELS NTC/PTC	V-I	Pt100-Tc
E1	Probe 1(control) faulty	• measuring of values outside the nominal reading range • control probe faulty/shorted/open probe	"E1" label appears on display; Controller enabled as indicated by the On1 and OF1 parameters if programmed for the Duty Cycle	• check the probe wiring • replace the probe	●	●	●
AH1	High temperature alarm	• value read by probe 1 > HA1 after time equal to "tAO". (see " MIN MAX ALARMS" and description of "HA1", "Att" and "tAO" parameters)	Alarms created in the "AL" folder with the AH1 label	• Wait for temperature value read by probe 1 to fall below HA1	●		●
AL1	Low temperature alarm	• value read by probe 1 < LA1 after time equal to "tAO". (see " MIN MAX ALARMS" and description of "LA1", "Att" and "tAO" parameters)	Alarms created in the "AL" folder with the AL1 label	• Wait for temperature value read by probe 1 to go above LA1	●		●
EA	External alarm	• control of alarm from active D.I. if "H11" = 8 or 9 (see description of "H11" parameter)	Alarms signalled in the "AL" folder with the EA label It only blocks the controllers if "H11"=9	• Manual silencing by pressing button	●		●

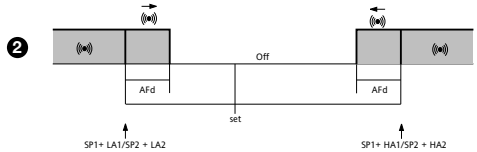
***** Effects common to all alarms: Alarm LED permanently on; Buzzer activated (if present);;

MAX-MIN ALARMS

Temperature expressed as an absolute value (par "Att"=0) Abs(olute)



Temperature in relation to set point (par "Att"=1) rEL(ative)



Minimum temperature alarm	Temperature lower than or equal to LA1 (LA1 with sign)	Temperature lower than or equal to set point +LA1 (LA1 positive only)
Maximum temperature alarm	Temperature higher than or equal to HA1 (HA1 with sign)	Temperature lower than or equal to set point +HA1 (HA1 positive only)
Minimum temperature alarm back swing	Temperature higher than or equal to LA1+AFd	Temperature higher than or equal to set point + LA1 + AFd set point -|LA1|+AFd
Maximum temperature alarm back swing	Temperature lower than or equal to HA1-AFd	Temperature lower than or equal to set point+HA1-AFd

if Att=reL(ative) LA1 must be negative: therefore set point+LA1<set point because set point+(-\|LA1\|)=set-\|LA1\|

PARAMETER TABLE

	PAR.		RANGE	DEFAULT	LEVEL	M.U.
	SP1		LS1...HS1	0.0		°C/°F
Controller 1 - rE1 label	**HC1**		H/C	H/C*	1	Flag
	OS1		-30.0...30.0	0*	**2**	°C/°F
	db1		0...30.0	0	1	°C/°F
	dF1		0...30.0	1*	1	°C/°F
	HS1		LS1...HdL	*	1	°C/°F
	LS1		LdL...HS1	*	1	°C/°F
	HA1	**IC 912 LX NTC/PTC**	LA1...350	140*	1	°C/°F
		IC 912 LX V-I	LA1...150.0	*		
		IC 912 LX Pt100-Tc	LA1...1999	*		
	LA1	**IC 912 LX NTC/PTC**	-99.9...HA1	-50*	1	°C/°F
		IC 912 LX V-I	-150...HA1	*		
		IC 912 LX Pt100-Tc	-328...HA1	*		
	dn1		0...250	1	1	°C/°F
	dO1		0...250	0	1	sec
	di1		0...250	0	1	min
	dE1		0...250	0	1	min
	On1		0...250	0	1	sec
	OF1		0...250	1	1	min
SFt label	**dSi**		0...25.0	0	**2**	°C/°F
	dSt		0...250	0	**2**	hours/mm/sec
	Unt		0/1/2	0	**2**	hours/mm/sec
	SEn		0/1/2/3	0	**2**	num
	Sdi		0...30.0	0	**2**	°C/°F
Alarms-AL label	**Att**		AbS/rEL	AbS	**2**	flag
	Afd		1.0...50.0	2.0	**2**	°C/°F
	PAO (1) (!)		0...10	0	**1**	°C/°F
	SAO		0...10	0	1	hours
	tAO (1)		0...250	0	1	min
Add label	**dEA (!)**		0...14	0	1	num
	FAA (!)		0...14	0	1	num
Display - diS label	**LOC**		n/y	n	1	flag
	PA1		0...250	0	1	num
	PA2 **		0...250	0	**2**	num
	ndt	**IC 912 LX NTC/PTC**	n/y	n	1	flag
		IC 912 LX V-I	n/y/int			
		IC 912 LX Pt100-Tc	n/y			
	CA1		-30.0...30.0	0	1	°C/°F
	CAI		0/1/2	2	**2**	num
	LdL	**IC 912 LX NTC/PTC**	-67.0...HdL	-50	**2**	°C/°F
		IC 912 LX V-I	-99...HdL	*		
		IC 912 LX Pt100-Tc	-328...HdL	*		
	HdL	**IC 912 LX NTC/PTC**	LdL...302	140	**2**	°C/°F
		IC 912 LX V-I	LdL...100	*		
		IC 912 LX Pt100	LdL...1999	*		
	dro	**IC 912 LX NTC/PTC**	°C/°F	°C	1	flag
		IC 912 LX Pt100				

	PAR.		RANGE	DEFAULT	LEVEL	M.U.
Configuration - CnF label	**H00 (!)**	**IC 912 LX NTC/PTC**	PtC/ntC	PtC/ntC*	1	flag
		IC 912 LX V-I	420/020/010/05/01	*		num
		IC 912 LX Pt100-Tc(2)	Pt1/JtC/HtC	Pt1/JtC/HtC*		num
	H02		0...15	5	2	sec
	H03	**IC 912 LX V-I**	(ndt=n) -99...100 (ndt=y) -99.0...100.0 (ndt=int) -990...1000	*	1	°C/°F
	H04	**IC 912 LX V-I**	(ndt=n) -99...100 (ndt=y) -99.0...100.0 (ndt=int) -990...1000	*	1	°C/°F
	H05		-2/-1/0/+1/2	0	**2**	num
	H06		n/y	y	**2**	flag
	H08		0/1/2	2	**2**	num
	H10		0...250	0	1	min
	H11	**IC 912 LX NTC/PTC** **IC 912 LX Pt100-Tc**	0...9	0	**2**	num
	H13	**IC 912 LX NTC/PTC** **IC 912 LX Pt100-Tc**	no/nc/noP/nCP	no	**2**	num
	H14	**IC 912 LX NTC/PTC** **IC 912 LX Pt100-Tc**	0...250	0	**2**	num
	H31		0...7	0(2?)	**2**	num
	H32 (!)		0...7	0	**2**	num
	H33 (!)		0...7	0	**2**	num
	rEL		/	/	1	/
	tAb		/	/	1	/

PA2 label
In the CnF folder you can access all level 2 parameters with the PA2 label by pressing the "set" button

label FPr	**UL**	/	/	1	/
	dL	/	/	1	/
	Fr (3)	/	/	**2**	/

FUNCTIONS (folder with "FnC" label)
The FnC folder (last folder visible from the Programming Menu) contains several functions that are activated using the "set" button.

NOTES:
(1) Refers exclusively to high and low temperature alarms.
(2) The Pt100 model only works with the Pt100 input (3 wires) whereas Tcj/TcK models, on the basis of this parameter, can work with the Tc input and the Pt100 input.
(3) If the Fr command is used, the data entered in the card will be permanently lost. This operation cannot be undone. After the operation with the Copy Card, the controller must be switched off and then switched back on

WARNING (!)
If one or more parameters marked with (!) are modified, the controller must be switched off after the modification and then switched back on

PLEASE NOTE:
The parameters dro, H11, H13 and H14 are only present in IC 915 LX NTC/PTC and Pt100/TcJ-TcK models.
Parameters H03 and H04 are only present in the IC 915 LX V-I model
* The default value depends on the model
** Visible at level 1 **in the CnF folder** and can be set at level 2 **in the diS folder**

DESCRIPTION OF PARAMETERS

CONTROLLER 1 (folder with "rE1" label)

HC1 If set to H, the controller operates in heating mode. If set to C, the controller operates in cooling mode.
OS1 Offset Setpoint
db1 Operating band 1 **See ON-OFF control diagram**
dF12 Relay OUT1 intervention differential. The load will stop when Set point is reached (as indicated by the control probe) and will restart at a temperature equal to setpoint plus (or minus, depending on HC1 the value of the differential. **See ON-OFF adjustment diagram**
HS1 Maximum value for set point
LS1 Minimum value for set point
HA1 Maximum alarm OUT1 **See Max/Min. Alarm diagram**
LA1 Minimum alarm OUT1 **See Max/Min. Alarm diagram.**

dn1 Start-up delay. The specified time must elapse between the controller relay start-up request and actual start-up.
do1 Delay after shut-down. The specified time must elapse between shut-down of the controller 1 relay and a subsequent start-up
di1 Delay between start-ups. The specified time must elapse between two subsequent start-ups of controller
dE1 Shut-down delay. The specified time must elapse between shut-down of the controller 1 relay and a subsequent start-up
NOTE: for parameters dn1, do1, di1, dE1 0= not active
On1 Controller start-up time if probe is faulty. If set to "1" with Of1 at "0" the controller is always on whereas if Of1 >0 it operates in duty cycle mode.
OF1 Controller shut-down time if probe is faulty. If set to "1" with On1 at "0" the controller is always on whereas if On1>0 it operates in duty cycle mode.

SOFT START (folder with "SFt" label)

N.B.: The SOFT START function is button, D.I. or function selectable.
The Soft Start controller can be used to set the temperature gradient required to reach a specific set point in a specific period of time. This function automatically gives you a progressive increase of the control set point from the Ta value (ambient temperature at start-up) to the value actually displayed. This means that a rise in temperature can be immediately stopped and the risk of overshooting reduced.

dSi Value (in degrees) of each of subsequent increases (dynamic) of adjustment point 0=disables the SOFT START function.
dSt Time between two subsequent increases (dynamic) of set point
Unt Unit of measurement (hours, minutes, seconds)
SEn Enabled outputs. Establishes which outputs the function must be enabled on: 0 = disabled; 1 = OUT 1; 2 = 3 = not used;
Sdi Function reinsertion threshold. Establishes the threshold beyond which the SOFT START function is automatically re-inserted

ALARMS (folder with "AL" label)

Att Parameter "HA1" and "LA1" modes, as absolute temperature values or as differential compared with the Set point.
0 = absolute value; 1 = relative value.
AFd Alarm differential.
PAO Alarm exclusion time on device start-up after a power failure.
SAO Alarm exclusion time after reaching the Set point. 0 = disabled. If >0, an alarm will be generated if the Set point is not reached after the time (in hours) set by this parameter.
tAO Temperature alarm signal delay time.

COMMUNICATION (folder with "Add" label)

dEA Device address: indicates the device address to the management protocol.
FAA Family address: indicates the device family to the management protocol.

DISPLAY (folder with "diS" label)

Keyboard Lock
Keyboard operating can be locked by programming the "Loc" parameter (see folder with "diS" table). If the keyboard is locked you can access the Programming Menu by pressing the "set" button. The Set point can also be displayed.

LOC Keyboard locked (set point and buttons). However, you can still access the parameter programming menu and modify the parameters including the status of this parameter to allow keyboard unlocking. y = yes; n = no.

PA1 Password 1. When enabled (value is not 0) it represents the access key to level 1 parameters.
PA2 Password 2. When enabled (value is not 0) it represents the access key to level 2 parameters.
ndt number display type. Display with decimal point.
y = yes, range = -99...10
n = no, range = -99,9 ... 100,0
int = integer, range = -990...1000
CA1 Calibration 1. Positive or negative temperature value that is added to the value read by control probe (probe 1) before being displayed or used for control.
CAI Offset intervenes on display, thermostat control or both.
0 = only modifies the temperature displayed
1 = adds to the temperature used by controllers not the temperature displayed that remains unchanged;
2 = adds to temperature displayed that is also used by the controllers
LdL Minimum value the instrument is able to display.
HdL Maximum value the instrument is able to display.
dro Select °C or °F to display temperature read by probe.
N. B.: switching from °C to °F or vice versa DOES NOT modify set points, differentials, etc. (e.g. set point=10°C becomes 10°F)

CONFIGURATION (folder with "CnF" label)

H00 Selection of probe type.
H01 Output link. 0 = independent; 1 = dependent; 2 = Neutral Area (or window)
H02 Button activation time if buttons are configured for a second function. For the ESC, Up and DOWN buttons configured for a second function (defrost, aux, etc) the time for quick enabling is set. Fa Aux is an exception and has a set time of 1 second
H03 Minimum value of current input
H04 Maximum value of current input
H05 Window filter. -2=very fast; -1=fast; 0=normal; 1=slow; 2=very slow
H06 button/aux input/door switch light active when instrument is off (but powered)
H08 Stand-by operating mode. 0= only display is switched off; 1= display on and controllers disabled; 2= display off and controllers disabled;
H10 Output delay from power-on Attention! If = 0 is not active; if ≠ 0 the output will not be activated before this time has expired
H11 Configuration of digital inputs
0 = disabled; 1 = SOFT START; 2 = Set point Offset;
3 = outputs shut down; 4 = periodic cycle; 5 = auxiliary output;
6 = stand-by 7 = maintenance request
8 = external alarm 9 = external alarm disables controllers.
H13 Polarity and priority Digital Input
no= normally open/ nc= normally closed /
noP= normally open with polarity / ncP= normally closed with polarity
see "H13 parameter configuration" table
H14 Digital input enabling delay
H31 UP button configurability.
0 = disabled; 1 = SOFT START;
2 = Set point Offset; 3 = outputs shut down;
4 = periodic cycle; 5 = auxiliary output (aux);
6 = stand-by; 7 = maintenance request
H32 DOWN button configurability. Same as H31.
H33 fnc button configurability. Same as H31.
rEL Device version. Read only parameter.
tAb Reserved. Read only parameter.

COPY CARD (folder with "Fpr" label)

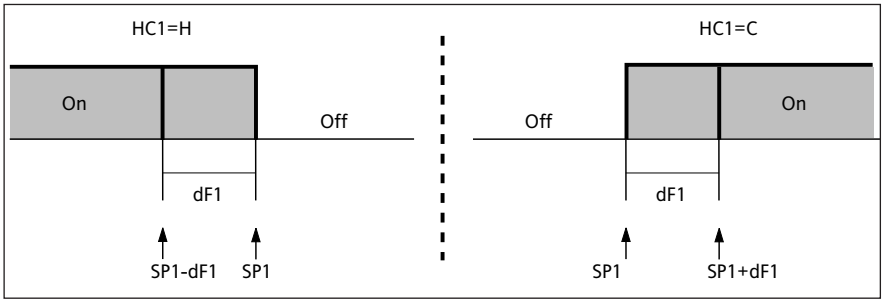
UL UpLoad: transfer of programming parameters from instrument to Copy Card.
dL downLoad: transfer of programming parameters from Copy Card to device.
Fr Format. Cancelling all data entered in the copy card.
N.B.: if the "Fr" parameter is used (copy card formatting) the data entered in the card will be permanently lost. This operation cannot be undone. After the operation with the Copy Card the controller must be switched off and then on again

H13 PARAMETER CONFIGURATION

H13	D.I. STATE	WITH BUTTON OR MENU ENABLED	WITH BUTTON OR MENU DISABLED	FUNCTION STATE	COMMENTS
NO	open	YES	YES	ON	enabled/disabled with each mode
NO	closed	YES	YES	OFF	enabled/disabled with each mode
NC	open	YES	YES	OFF	enabled/disabled with each mode
NC	closed	YES	YES	ON	enabled/disabled with each mode
NOP	open	YES	YES	ON	enabled only from D.I. / disabled with each mode
NOP	closed	NO	N/A	OFF	enabled only when D.I. / is reopened
NCP	open	YES	YES	OFF	enabled with each mode / disabled only from D.I.
NCP	closed	N/A	NO	ON	enabled with each mode / disabled only from D.I.

ON-OFF CONTROL DIAGRAM

HC1 Heat/Cool Mode
SP1 Setpoint 1
dF1 Relay 1 tripping differential.



TECHNICAL DATA	IC 912 LX NTC/PTC	IC 912 LX P/R/V-I/I-V	IC 912 LX Pt100/TC
Front protection	IP65	IP65	IP65
Casing	PC+ABS plastic resin body PC+ABS UL94 V-0, polycarbonate front, thermoplastic resin buttons	PC+ABS plastic resin body PC+ABS UL94 V-0, polycarbonate front, thermoplastic resin buttons	PC+ABS plastic resin body PC+ABS UL94 V-0, polycarbonate front, thermoplastic resin buttons
Dimensions	front keypad 74x32 mm, depth 59mm (excluding terminals)	front keypad 74x32 mm, depth 59mm (excluding terminals)	front keypad 74x32 mm, depth 59mm (excluding terminals)
Assembly	each panel with drilling template 71x29mm (+0.2/-0.1mm)	each panel with drilling template 71x29mm (+0.2/-0.1mm)	each panel with drilling template 71x29mm (+0.2/-0.1mm)
Operating temperature	-5°C...55°C	-5°C...55°C	-5°C...55°C
Storage temperature	-30°C...85°C	-30°C...85°C	-30°C...85°C
Ambient operating and storage humidity	10...90% RH (non-condensing)	10...90% RH (non-condensing)	10...90% RH (non-condensing)
Display range	NTC: -50...110°C (-58...230°F) / PTC: -50...140°C(-58...302°F) on display 3 1/2 digits plus sign	-99...100 (ndt=n), -99,9...100,0 (ndt=y), -999...1000 (ndt=int) on display 3 1/2 digits plus sign	Pt100: -150...650°C / TcJ: -40...750°C / TcK: -40...1350°C* on display 3 1/2 digits plus sign
Digital Input	1 voltage-free parameter-configurable digital input	1 voltage-free parameter-configurable digital input	1 voltage-free parameter-configurable digital input
Analogue input	1 NTC or 1 PTC (parameter selectable)	1 V-I (0-1V, 0-5V, 0-10V, 0-20...mA, 4...20mA par.H00)	Pt100 or 1 TcJ or TcK (depending on model)
Serial	TTL for connection to Copy Card or Televis**System**	TTL for connection to Copy Card and Televis **System**	TTL for connection to Copy Card or Televis**System**
Digital outputs (configurable)	1 SPDT 8(3)A 1/2 hp 250 V~	1 SPDT 8(3)A 1/2 hp 250 V~	1 SPST 8(3)A 1/2 hp 250 V~
Buzzer output	only in specific models from	only in specific models from	only in specific models from
Measurement range	from -50 to 140°C	from -999 to 1000	from -150 to 1350
Accuracy	better than 0.5% of full scale value + 1 digit	better than 0.5% of full scale value + 1 digit	**see "Pt100/TcJ/TcK models" table**
Resolution	0,1°C (0,1°F up to +199,9°F; 1°F over)	1 or 0.1 digits depending on parameter settings	**see "Pt100/TcJ/TcK models" table**
Power consumption	1,5 W max(mod. 12V) / 3 VA max (mod. 230V)	1,5 W max(mod. 12V) / 3 VA max (mod. 230V)	1,5 W max(mod. 12V) / 3 VA max (mod. 230V)
Power supply	12V~/⎓, 12/24 V~/⎓, 24V~/⎓ 10%, 110/115V~, 220/230 V~ 10% 50/60 Hz	12V~/⎓, 12/24 V~/⎓, 24V~/⎓ 10%, 110/115V~, 220/230 V~ 10% 50/60 Hz	12V~/⎓, 12/24 V~/⎓, 24V~/⎓ 10%, 110/115V~, 220/230 V~ 10% 50/60 Hz

0/ TcJ/ TcK MODELS

Pt100:

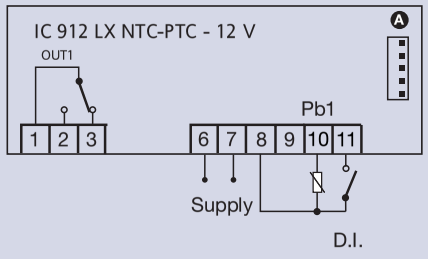
Accuracy:
0,5% for full scale value + 1 digit;
0.2% from -150 to 300°C
Resolution:
0.1°C (0.1°F) up to 199.9°C; 1°F over

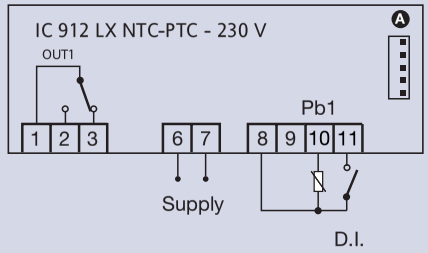
TcJ:

Accuracy:
0.4% for full scale value + 1 digit;
Resolution:
1°C (1°F)

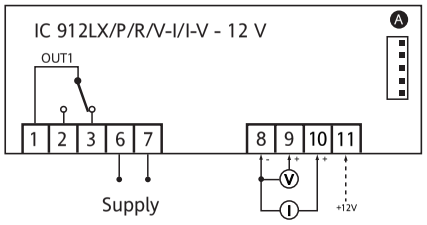
TcK:

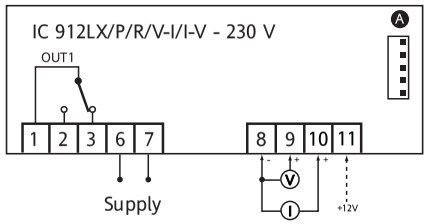
Accuracy:
0,5% for full scale value + 1 digit;
0.3% from -40 to 800°C
Resolution:
1°C (1°F)





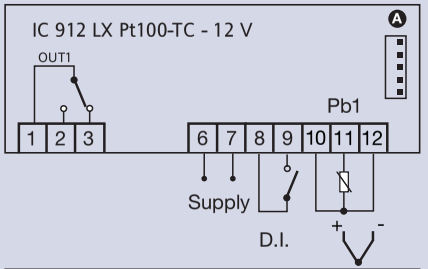
1-2	N.O. controller relay OUT1
1-3	N.C. controller relay OUT1
6-7	Power supply
8-10	Pb1 probe input (control)
8-11	Digital input D.I.
A	TTL input for Copy Card and connection to to Televis**System**

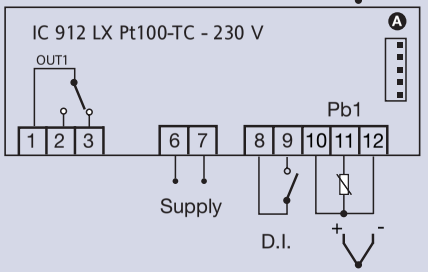




1-2	N.O. controller relay OUT1
1-3	N.C. controller relay OUT1
6-7	Power supply
*8-9-11	Voltage input (8=ground; 9=signal; 11=12V)
*8-10-11	Current input (8=ground; 9=signal; 11=12V)
A	TTL input for Copy Card and Televis **System**

* depending on model



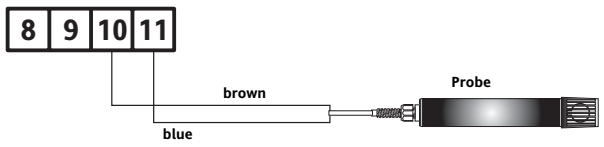


1-2	N.O. controller relay OUT1
1-3	N.O. controller relay OUT1
6-7	Power supply
8-9	Digital input D.I.
*10-11-12	Probe input Pt100 3 wires Pb1
*11-12	TcJ/TcK input
A	TTL input for Copy Card and Televis **System**

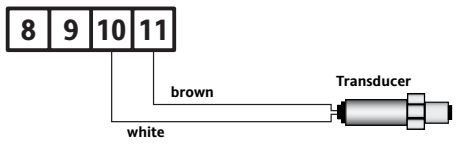
* depending on model

EWPA-EWHS PROBES CONFIGURATION

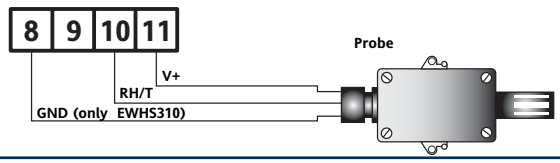
EWHS 280 2 wires



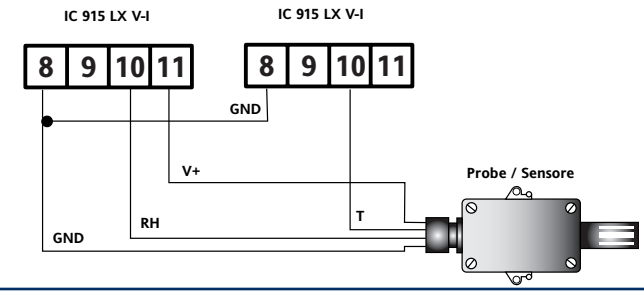
EWPA 007/030 2 wires / Transducer



EWHS 300/310 3 wires



EWHS 310 4 wires



MECHANICAL ASSEMBLY

The unit has been designed for panel-mounting: Drill a 29x71 mm hole, insert a tool and fix it in place with the brackets provided. Do not assemble the instrument in excessively humid or dirty locations since it is designed to be used in locations with normal pollution levels. Always make sure that the area next to the cooling openings of the tool is adequately ventilated.

ELECTRICAL CONNECTIONS

Warning! Always switch off machine before working on electrical connections. The instrument has screw terminals for connecting electrical cables with a maximum diameter of 2.5 mm² (only one conductor per terminal for power connections): for terminal capacity, see instrument label.The relay contacts are voltage-free. Do not exceed the maximum current allowed. For higher loads, use a suitable contactor. Make sure that the power voltage complies with the device voltage. The sensor has no connection polarity and can be extended using an ordinary bipolar cable (note that extending the probe may affect the electromagnetic compatibility (EMC) of the instrument: special care must be used when wiring). Probe cables, power supply cables and the TTL serial cable should be kept separate from power cables.

RESPONSIBILITY AND RESIDUAL RISKS

Eliwell shall not be liable for any damages deriving from:

- installation/use other than that prescribed and, in particular, which does not comply with the safety standards specified in the regulations and/or those given herein;
- use on boards which do not guarantee proper protection against electric shock, water or dust when assembled;
- use on boards which allow dangerous parts to be accessed without the use of tools;
- tampering with and/or alteration of the product;
- installation/use on boards that do not comply with the standards and regulations in force.

DISCLAIMER

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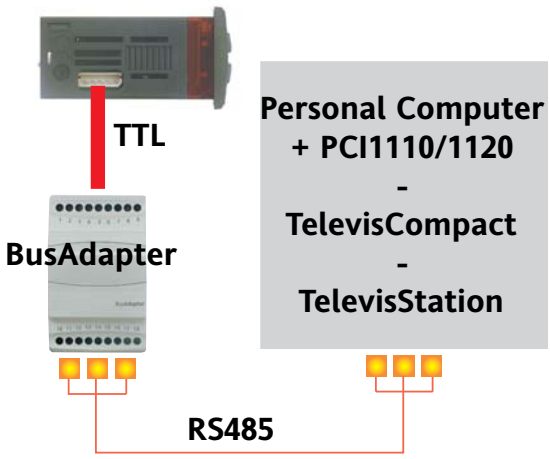
The technical characteristics in this document concerning measurements (range, accuracy, resolution, etc.) refer to the instrument in the strictest sense and not to any accessories provided such as probes, for example. This means, for example, that an error introduced by the probe is added to any error that is typical of the instrument.

TELEVIS SYSTEM



The Televis remote control systems can be connected using the TTL serial port (the 130 or 150 485 BUS ADAPTER TTL-RS interface module must be used). To configure the instrument to do this, you need to access the “Add” folder and use the “dEA” and “FAA” parameters.

CONDITIONS OF USE

PERMITTED USE

For safety reasons the instrument must be installed and used in accordance with the instructions supplied. Users must not be able to access parts with dangerous voltage levels under normal operating conditions. The device must be suitably protected from water and dust according to the specific application and only be accessible using special tools (except for the front keypad). The device can be fitted to equipment for household use and/or similar use in the refrigeration sector and has been tested with regard to safety in accordance with the European harmonized reference standards: It is classified as follows:

- as an automatic electronic control device to be integrated as regards its construction;
- as a 1 B type operated control device as regards its automatic operating features;
- as a Class A device in relation to the category and structure of the software.

UNPERMITTED USE

The use of the unit for applications other than those described above is forbidden. It should be noted that the relay contacts supplied with the device are functional and therefore exposed to potential faults. Any protection devices required to comply with product requirements or dictated by common sense due to obvious safety reasons should be installed externally.

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