

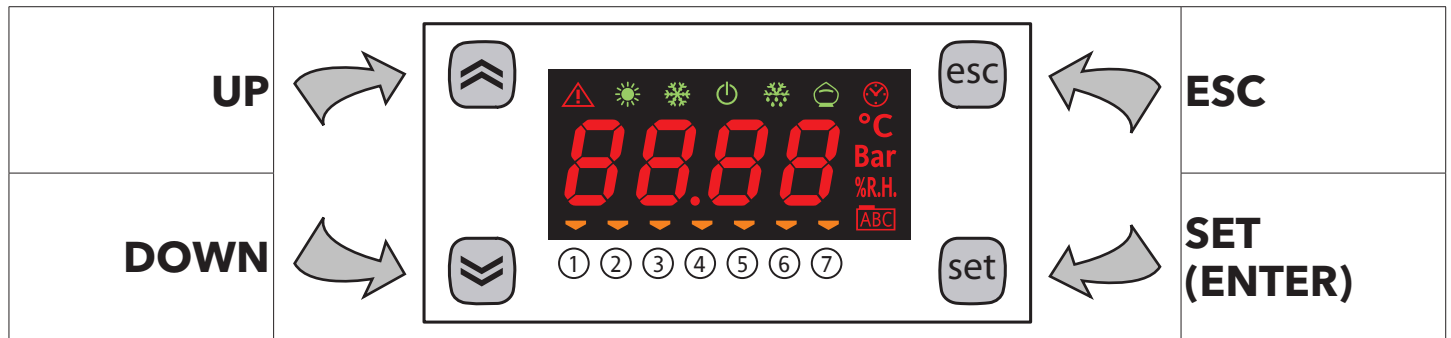
TelevisIn & TelevisOut

Data acquisition and alarm signalling modules.



Parametric controller to capture plant variables in real time and signal alarm conditions when connected to a supervisor system, both dedicated (Televis) or standard market ones (MODBUS protocol).

USER INTERFACE



KEYS

	UP • Increase values • Go to next label		ESC • Exit without saving new settings • Go back to previous level
	DOWN • Decrease values • Go to previous label		SET (ENTER) • Confirm value / exit and save new settings. • Go to next level (access to folder, sub-folder, parameter, value) • Open State Menu
	ON/OFF Pressing and holding these keys at the same time for 5 seconds or a remote command activates the ON/OFF function. In OFF mode, the screen shows the word OFF . All alarms are disabled, including active and communication ones. Probe data capture remains active.		LOCK Pressing and holding both keys together for 5 seconds or a Supervisor command locks / unlocks the keypad. The icon blinks when the keypad is locked; nothing will happen when a key is pressed, not even the setpoint will be displayed.

LED

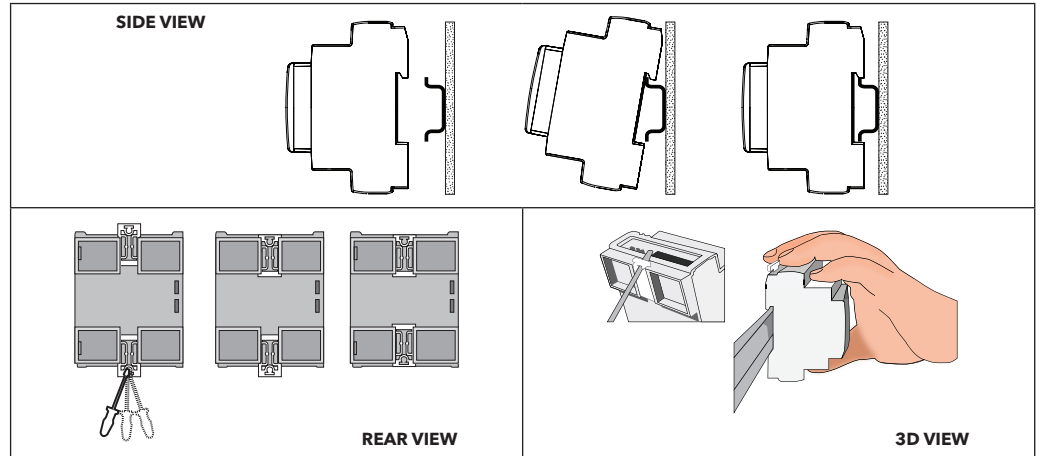
Icon	Description	Colour	Note
	Permanently on: alarm active and output set for this alarm Flashing: { alarm silenced and output set for this alarm alarm active and output not set for this alarm	red	silenced from remote and/or DI
	Blinks when serial communication is on	green	
	NOT USED	green	
	ON when the device is powered on but not when it is OFF	green	
	NOT USED	green	
	NOT USED	green	
	NOT USED	red	
°C	Temperature unit of measurement	red	
Bar	Pressure unit of measurement	red	
%R.H.	Units of measure for relative humidity	red	
	Permanently on: during navigation Flashing: keypad locked	red	
	Manages utilities connected to the device.		
(1) ... (7)	TelevisIn: indicates if Digital Inputs are active (ON) TelevisOut: indicates if Digital Outputs are active (ON)	Amber	

MECHANICAL INSTALLATION

The instrument is intended for DIN rail mounting.

For GUIDA DIN installation, follow the steps described below:

- Move the two spring docking devices to their standby position (use a screwdriver to press against the relative compartments)
- Then mount the controller on the DIN RAIL, pressing on the spring docking devices which will go to the closing position.



TECHNICAL SPECIFICATIONS (EN 60730-2-9)

Classification:	electronic automatic control (not safety) device for incorporation
Mounting:	Omega DIN rail.
Type of action:	1.C - 1.Y
Pollution class:	2
PTI of materials used for insulation:	PTI 250V (device made with class IIIa material)
Overvoltage category:	II
Nominal pulse voltage:	2500V
Temperature:	Use: -20 ... +55°C • Storage: -40 ... +85°C
Power supply:	SMPS 100-240 V~ ±10% 50/60 Hz
Power consumption:	5W max
Fire resistance category:	D
Software class:	A
RTC battery life:	In absence of external power, the clock battery will last 4 days.

FURTHER INFORMATION

TeleviIn Characteristics

Measurement range:
Accuracy:

NTC: -50.0...+110°C; **PTC:** -50.0...+150°C; **PT1000:** -50.0...+400°C (on display with 3 digits + sign)
NTC, PTC: ±0.5% e.o.s. + 1 digit
PT1000: ±1°C (-30°C ... 30°C) e ±1% e.o.s. (-50°C ... 400°C)
0-1V: ±2% e.o.s.

Impedance:
Resolution:
Analogue Inputs:

0-5V, 0-10V, 0...20mA, 4...20mA: ±1% e.o.s.
0-1V: 110kΩ; **0-5V:** 110kΩ; **0-10V:** 21kΩ; **0...20mA:** 100Ω; **4...20mA:** 100Ω
NTC, PTC, PT1000: 0.1°C; **0-1V, 0-5V, 0-10V, 0...20mA, 4...20mA:** 0,1
PB1, PB2, PB5: NTC, PTC, PT1000 inputs or configurable DIs
PB3, PB4: DI, NTC, 0-1V, 0-5V, 0-10V, 0...20mA or 4...20mA configurable inputs
DI1, DI2: Multifunctional digital inputs
OUT1: SPST relay 2A max 250V~

Digital Inputs:
Digital Outputs:

TeleviOut Characteristics

Digital Outputs:

OUT1, OUT2, OUT3: SPST relay 2A max 250V~
OUT4: SPDT relay 2A max 250V~
OUT5/DI1: OC Analogue Output or voltage-free Digital Input
OUT6/DI2: OC Analogue Output or voltage-free Digital Input
 The two analogue outputs are low voltage (SELV) Open Collector (OC) ones: PWM with
 - Precision: **2%**;
 - Nominal range: **0...16.9V** (12V~ rectified); closure **12V**~;
 - Maximum current: **35mA** (min load of 340Ω @12V~)

OC outputs/Digital Inputs:

NOTA: ** Outputs OUT5 and OUT6 (typically connected to the device's auxiliary 12V~ output) cannot deliver more than **70mA** in total. Any other loads connected to the same 12Vc auxiliary output must also be taken into account.

Mechanical Characteristics

Container:
Dimensions:
Terminals:
Connectors:

PC+ABS resin casing, UL94 V-0
 4 DIN-rail
 removable screw terminals with 2.5mm² cross-section.
TTL for MFK / Device Manager connection (via DMI)
RS485 to connect to TeleviSystem/Modbus supervisor.
 Usage / Storage: 10...90% RH (non-condensing)

Humidity:

Regulations

Electromagnetic compatibility:
Safety:
Food Safety:

The device complies with Directive 2004/108/EC
 The device complies with Directive 2006/95/EC
 The device complies with standard EN13485 as follows:
 - suitable for storage
 - application: air
 - climate range: A
 - measurement class 1 in the range from -25°C to 15°C (*)

(*with Eliwell probes only)

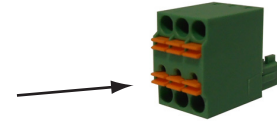
NOTE: The technical specifications stated in this document regarding the measurement (range, accuracy, resolution, etc.) refer strictly to the instrument and not to any accessories provided, such as the probes. This means, for example, that the error introduced by the probe must be added to the error of the instrument.

SUPERVISION

The connection to supervisor systems is via the **RS-485** port and can use Televis or Modbus protocols.

The protocol to be used must be configured to ensure the proper function of Televis**In** and/or Televis**Out**. The parameters to be set are in the "Add" folder, under the "Installer" parameters (see section entitled "Password"), as listed below.

- N.B.:** 1) All communication parameters in the "Add" folder are not in the vectors.
 2) A double terminal clip is provided as an RS485 connection accessory RS485 to connect two RS-485 in parallel.



COMMUNICATION PARAMETERS (Add)

PAR.	Description	UM	Range	Value
PtS	Select protocol (t = Televis; d = ModBus).	flag	t/d	t
dEA	Device address: indicates the device address to the management protocol.	num	0 ... 14	0
FAA	Family address: indicates the device family to the management protocol.	num	0 ... 14	0
Adr	Modbus protocol controller address	num	1 ... 250	1
Pty	Sets Modbus parity bit (n = none; E = even; o = uneven).	num	n/E/o	n
StP	Sets Modbus stop bit: (1b = 1 BIT; 2b = 2 BIT).	flag	1b/2b	1b

LOADING DEFAULT APPLICATIONS

The procedure for loading one of the default applications is:

- At power-on of the device, keep the **set** key pressed: the label "AP1" will appear.
- Scroll through the various applications ("AP1"... "AP8") using the **up** and **down** keys.
- Select the application you want using the **set** key ("AP3" in the example) or cancel the operation by pressing the **esc** key or by timeout.
- If the operation is successful, the display will show "y", if not it will show "n".
- After a few seconds the instrument will return to the main display.

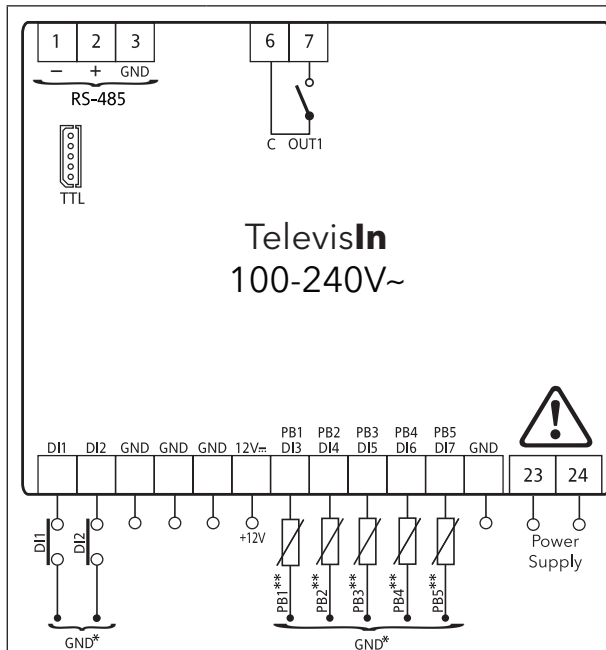
RESET PROCEDURE

Televis**In** & Televis**Out** can be RESET and the default factory settings restored in a simple and user-friendly way. This is done by simply reloading one of the basic applications (see "Loading default applications").

You may need to **RESET** the instrument in circumstances in which the normal operation of the instrument is compromised or if you decide to restore the instrument to its default configuration (e.g. Application "AP1" values).

IMPORTANT! This operation resets the instrument to its initial state, returning all the parameters to their default values. This means that all changes made to operating parameters will be lost.

TelevisIn (Connections and Default applications)



No.	Label	Description
1-2-3	RS-485	Serial RS-485 (1 = "-"; 2 = "+" and 3 = "GND")
6	C	Common
7	OUT1	NO relay output OUT1 - high voltage (2A - 230V~)
	DI1	Digital Input 1
	DI2	Digital Input 2
	GND	Ground
	12V~	Auxiliary power supply 12V~
	PB1/DI3	Analogue input 1 configurable as: DI, NTC, PTC and PT1000
	PB2/DI4	Analogue input 2 configurable as: DI, NTC, PTC and PT1000
	PB3/DI5	Analogue input 3 configurable as: DI, NTC, V*** and I***
	PB4/DI6	Analogue input 4 configurable as: DI, NTC, V*** and I***
	PB5/DI7	Analogue input 5 configurable as: DI, NTC, PTC and PT1000
	GND	Ground
23-24	Power supply	Power supply 100-240V~

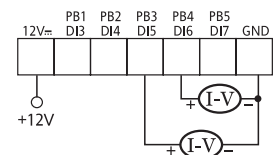
NOTES

* Connect the terminal to one of the GND terminals.

** Analogue Inputs PB1...PB5 can also be configured as DIs (H4x="DI")

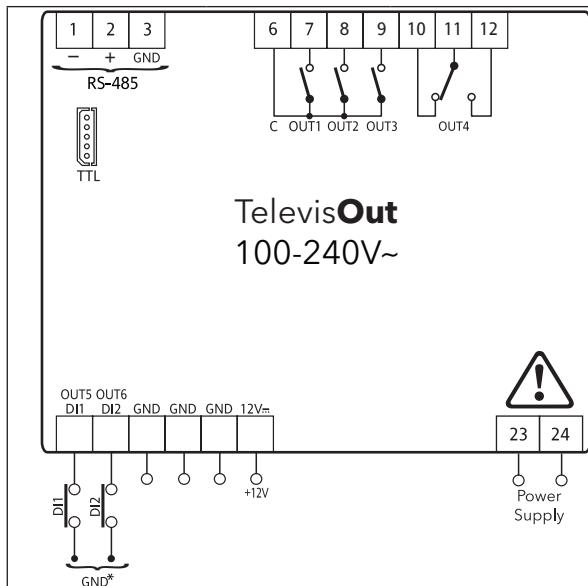
*** The **V** and **I** configurable inputs (PB3 e PB4) are:

- V = 0-1V; 0-5V and 0-10V
- I = 0...20mA and 4...20mA



Function	Label	Parameters	AP1	AP2	AP3	AP4	AP5...AP8	Note
Input	DI1	H11			(●)		Applications can be configured by users	<ul style="list-style-type: none"> • Use sensor SEMITEC 103 AT with NTC analogue inputs (10KOhm / 25°C). • Digital inputs DI1/DI2 are low voltage digital inputs and the closing current for ground is 0.5mA.
Input	DI2	H12			(●)			
Input	Pb1 / DI3	H41, H13**	PTC		DI - (●)	NTC		
Input	Pb2 / DI4	H42, H14**	PTC					
Input	Pb3 / DI5	H43, H15**		4...20mA		4...20mA		
Input	Pb4 / DI6	H44, H16**		4...20mA				
Input	Pb5 / DI7	H45, H17**	PTC					
Output	OUT1	H21						

TelevisOut (Connections and Default applications)



No.	Label	Description
1-2-3	RS-485	Serial RS-485 (1 = "-"; 2 = "+" and 3 = "GND")
6	C	Common
7	OUT1	NO relay output OUT1 - high voltage (2A - 230V~)
8	OUT2	NO relay output OUT2 - high voltage (2A - 230V~)
9	OUT3	NO relay output OUT2 - high voltage (2A - 230V~)
10	OUT4	NC relay output OUT4 - high voltage (2A - 230V~)
11	OUT4	Common relay output OUT4 - high voltage (2A - 230V~)
12	OUT4	NO relay output OUT4 - high voltage (2A - 230V~)
	OUT5/DI1	Low voltage digital input 1, also configurable as Analogue Output OUT5 - low voltage (SELV) OC: PWM
	OUT6/DI2	Low voltage digital input 2, also configurable as Analogue Output OUT6 - low voltage (SELV) OC: PWM
	GND	Ground
	12V~	Auxiliary power supply 12V~
23-24	Power supply	Power supply 100-240V~

NOTES

* Connect the terminal to one of the GND terminals.

** SELV: SAFETY EXTRA LOW VOLTAGE

Function	Label	Parameters	AP1	AP2...AP8	Note
Input/Output	DI1 / OUT5	H11		Applications can be configured by users	<ul style="list-style-type: none"> Digital inputs DI1/DI2 are low voltage digital inputs and the closing current for ground is 0.5mA.
Input/Output	DI2 / OUT6	H12			
Output	OUT1	H21	NO-LINK		
Output	OUT2	H22	(●)		
Output	OUT3	H23			
Output	OUT4	H24			

PASSWORDS

Password **PA1**: allows access to the "User" parameters. By default the password is disabled (**PS1=0**).

Password **PA2**: allows access to "Installer" parameters. By default the password is enabled (**PS2=0**).

(For more details, see the User Manual which can be downloaded from the Eliwell website).

The visibility of "PA2" is:

1) **PA1** and **PA2≠0**: Press and hold **set** for longer than 5 seconds to display **PA1** and **PA2**. You can then decide whether to access the "User" parameters (PA1) or the "Installer" parameters (**PA2**).

2) **Otherwise**: Password **PA2** is at the end of the level1 parameters. If enabled, it will be required when accessing the "Installer" parameters.

NOTE: If the value entered is incorrect, label PA1/PA2 will be shown again and the procedure must be repeated.

MACHINE STATE MENU

Press the **set** once to open this menu.

Use the **▲** and **▼** keys to browse the menu. Press **set** to access the parameters or values it contains.

The visibility of folders depends on the configuration:

- AL**: alarms (always present, if there are no active alarms, the display readsd "----")
- Pb**: **Pbx** values (for configured inputs only) and **dEP** (dewpoint)
- di**: DI state (configured inputs only)
- do**: DO state (configured outputs only)

Pb, **di** and **do** are only visible if there is at least one configured input/output.

PROGRAMMING MENU







To access the "Programming" menu hold down the **set** key for more than 5 seconds. If enabled, the instrument will request an access PASSWORD, either PA1 for "User" parameters or PA2 for "Installer" parameters (see "PASSWORD" section).


"User" parameters: When accessed the display will show the first parameter (e.g. "**diF**"). Press **▲** and **▼** to scroll through all parameters in the current level. Select the desired parameter by pressing **set**. Press **▲** and **▼** to change it and **set** to save changes.

"Installer" parameters: When accessed the display will show the first folder (e.g. "**diF**").
(For the list of "Installer" parameters, see the User Manual which can be downloaded from the Eliwell website).

NOTE: It is strongly recommended that you switch the device off and on again each time parameter configuration is changed, in order to prevent the configuration and/or ongoing timings from malfunctioning.

COPY CARD / UNICARD

When connected to the serial port (TTL), the Copy Card/Unicard allows instrument parameters to be programmed rapidly. Enter PA2 to access "Installer" parameters, scroll through the folders using  and  until folder **FPr** is displayed. Press  to select it, scroll through the parameters using  and  then press  (e.g. UL) to select the function.

- **Upload (UL):** select UL and press . This function uploads the programming parameters from the instrument to the card. If the operation is successful, the display will show "y", otherwise it will show "n".
- **Format (Fr):** This command is used to format the copy card (which is necessary when using the card for the first time).
Important: the Fr parameter deletes all data present. This operation cannot be reversed.
- **Download (dL):** Connect the Copy Card when the instrument is switched off. At power-on, data will automatically start downloading from the USB key to the instrument. At the end of the lamp test, the display will show "dLy" if the operation was successful and "dLn" if not.

NOTE: After the download, the instrument will use the newly uploaded map settings.

ELECTRICAL CONNECTIONS

Important! Make sure the machine is switched off before working on the electrical connections.

The instrument is equipped with screw connectors to connect power cables with a maximum cross-section of 2.5mm² (one wire per terminal). Make sure that the power supply is of the correct voltage for the device.

Temperature probes (NTC, PTC, PT1000) have no connection polarity and can be extended using a normal bipolar cable (note that the extension of the probes influences the instrument's EMC electromagnetic compatibility: take great care with the wiring).

Ratiometric or pressure probes (4...20mA), have a connection polarity.

Probe cables, power supply cables and the RS485 serial cable should be routed separately from power cables.

DISCLAIMER

This document is the exclusive property of ELIWELL CONTROLS SRL and may not be reproduced or circulated without the express permission of ELIWELL CONTROLS. While all possible care has been taken to ensure the accuracy of this document, ELIWELL CONTROLS SRL cannot accept liability for any damage resulting from its use. The same applies to any person or company involved in preparing and editing this document. ELIWELL CONTROLS SRL reserves the right to make aesthetic or functional changes at any time without notice.

LIABILITY AND RESIDUAL RISKS

ELIWELL CONTROLS SRL declines all liability for damage due to:

- installation/use other than expressly specified and, in particular, in conflict with the safety prescriptions set down in regulations and/or specified in this document;
- use on panels that do not provide adequate protection against electric shocks, water or dust in the adopted mounting conditions;
- use on panels allowing access to dangerous parts without having to use tools;
- tampering with and/or modification of the product;
- installation/use on panels that do not comply with statutory laws and regulations.

CONDITIONS OF USE

Permitted use

For safety reasons, the device must be installed and used according to the instructions provided. In particular, parts carrying dangerous voltages must not be accessible in normal conditions. The device must be adequately protected from water and dust with regard to the application, and must only be accessible using tools (with the exception of the front panel). The device is suitable for use in household refrigeration appliances and/or similar equipment and has been tested for safety aspects in accordance with the harmonized European reference standards.

Improper use

Any use other than that expressly permitted is prohibited. The relays provided are of a functional type and can be subject to failure: any protection devices required by product standards, or suggested by common sense for obvious safety requirements, must be installed externally to the controller.

eliwell

Eliwell Controls s.r.l.

Via dell'Industria, 15 • Z.I. Paludi
32010 Pieve d'Alpago (BL) - ITALY
Telephone: +39 0437 986 111
Fax: +39 0437 989 066

www.eliwell.com

Technical Customer Support:

Technical helpline: +39 0437 986 300
E-mail: techsuppeliwell@invensys.com

Sales:

Telephone: +39 0437 986 100 (Italy)
+39 0437 986 200 (other countries)
E-mail: saleseliwell@invensys.com



ISO 9001

