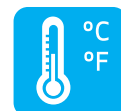# B24-T   Temperature meter

°C
°F

Large format meter with 4 digits and 60 mm digit height, for reading up to 25 meters for industrial applications. Temperature meter for Pt100 (2 and 3 wires) and thermocouple probes J, K, T, E, S, R, N, C, L and X. Versatile and configurable instrument, with reading in ºC or ºF, configurable manual offset, thermocouple cold junction compensation and broken probe detection. Front keypad for easy access to the configuration menu and connection for remote keypad. Two universal high and low power supply options for AC and DC. Optional output and control modules for relay output, transistor output, SSR control, analog output retransmission and communications for Modbus RTU and RS-485 ASCII protocols. Sturdy metallic housing with full IP65 protection, for panel mount, wall mount or hanging mount.

Front view

Technical specifications

Reading

Digits	4
Reading	9999 / -1999
Decimal point	configurable
Led color	red or green
Digit height	60 mm
Type of digit	7 segment
Angle of vision	120º

Input signal

Pt100	2 and 3 wires
Pt100 resolution	1º or 0.1º
Measuring range	800 to -200 ºC (1562 to -328 ºF)
Accuracy	±0.2º
Cable compensation	automatic up to 14 Ohm
Thermocouples	J, K, T, E, S, R, N, C, L, X
Thermocouple resolution	1º
Measuring ranges	see user's manual
Accuracy	±2º to ±4º depends on thermocouple type
Thermocouple cold junction	automatic (configurable)
Offset drift	0.05º/º for Pt100, 0.05º/º to 0.2º/º for thermocouples
Span drift*	0.10º/º for Pt100, 0.02º/º to 0.2º/º for thermocouples
	span drift value includes offset drift
Signal wire diameter	max. 0.5 mm²

Outputs and configuration

Output and control options	relays, analog output, serial communications, ...
Configuration	3 button front keypad (connection for remote keypad)

Power

Power 'H'	85 to 265 Vac and 120 to 370 Vdc (isolated 2500 Vac)
Power 'L'	11 to 36 Vdc (isolated 1500 Vdc)
Consumption	<3.0 W (meter only)
	<5.0 W (meter with options)
Power wire diameter	max. 2.5 mm²

Mechanical

Housing	metallic (textured black painted iron)
Front filter	methacrylate
IP protection	full IP65 housing
Connections	cable gland output
	internal plug-in screw terminals
Weight	<2200 grams
Mounting	panel, wall, hanging
Front size	340 x 135 mm
Panel cut-out	322 x 117 mm
Deep	80 mm (including terminals)
Operating temperature	0 to 50 ºC
Storage temperature	-20 to 70 ºC

Order reference

Format	Model	Power	Color	Option 1	Option 2	Option 3	Custom
B24	- T	- H	- R	-	-		-

- H *(85-265 Vac and 120-370 Vdc)*
- L *(11-36 Vdc)*

- R *(red led)*
- G *(green led)*

- R1 *(1 relay output)*
- AO *(analog output)*
- RTU *(Modbus RTU)*
- S4 *(RS-485)*
- S2 *(RS-232)*
- T1 *(1 transistor output)*
- SSR *(1 SSR control output)*
- 0 *(empty)*

* Option 3 available with formats B26 and B46

Rear view

45 YEARS 1969-2014

Q ISO 9001 Certified Quality

CE EN-61010-1 Security

CE EN-61326-1 Electromagnetic C.

5 YEARS Extended Warranty

Output and control options

Format	Model	Power	Color	Option 1	Option 2	Option 3	Custom
B24	- T	- H	- R	-	-	-	

	Function	Installable options	Isolation
R1	1 relay output	2	yes
T1	1 transistor output	2	yes
SSR	1 control for SSR relay	2	yes
AO	1 analog output	2	yes
RTU	1 Modbus RTU port	2	yes
S4	1 RS-485 port	2	yes
S2	1 RS-232 port	2	yes
	Option 3 available with formats B26 and B46		

Mounting options

hanging

wall

panel
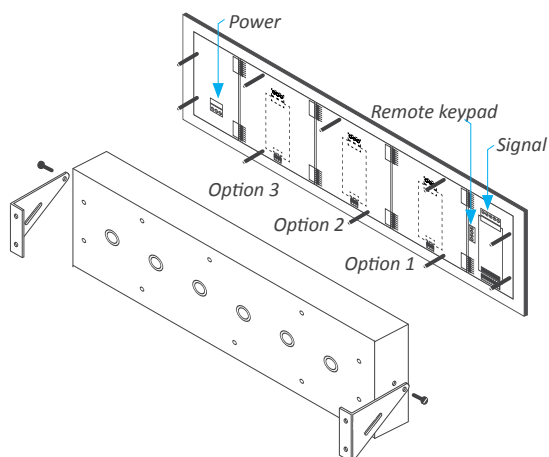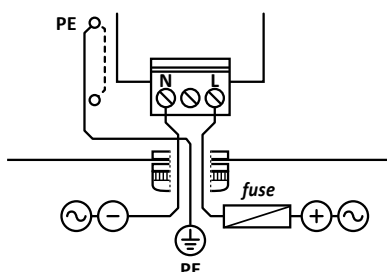

side fixations (included)
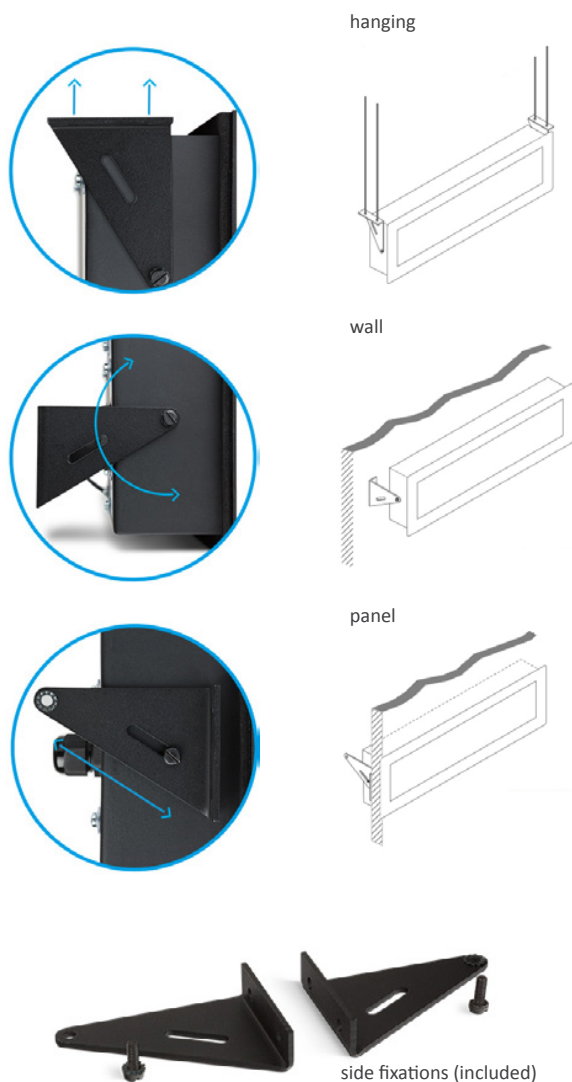
Functions included

'**Fast access**' menu	a single press on the front keypad gives access to alarm setpoint modification, special functions, memories, …
'**On power-up**' function	protects systems at cold start-up.
Function '**Manual offset**'	allows to add a number of counts to the display reading.
Function '**Cold junction**'	allows to enable or disable the automatic compensation of the thermocouple cold junction.
Function '**Sensor break**'	allows to define the behavior of the display in case of sensor break.
Alarms	with one or two setpoints, independent activation and deactivation delays, hysteresis, optional manual deactivation of the relay.
Inverted relay	for security applications
Display filters.	recursive filters for unstable signals
Memory.	maximum, minimum
Brightness	5 levels of brightness intensity.
Password	blocks access to configuration menu.

Dimensions

340 mm

135 mm

Cable glands

Power   Remote keypad
Option 2   Option 1   Signal

80 mm   3 mm

Panel cut-out
117 (±1) mm
322 (±1) mm

Connections

Internal structure for a B26 instrument

Power

Remote keypad

Signal

Option 3

Option 2

Option 1

Power connections

PE

N L

fuse

PE

Signal connections

Pt100

tc+

tc-

3 2 1

3 2 1
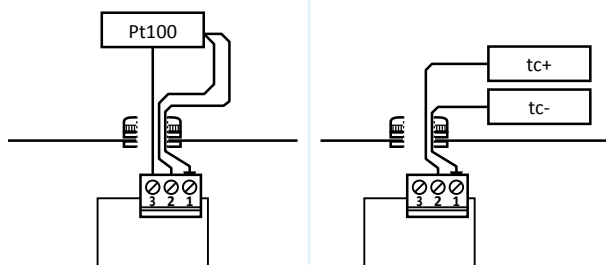
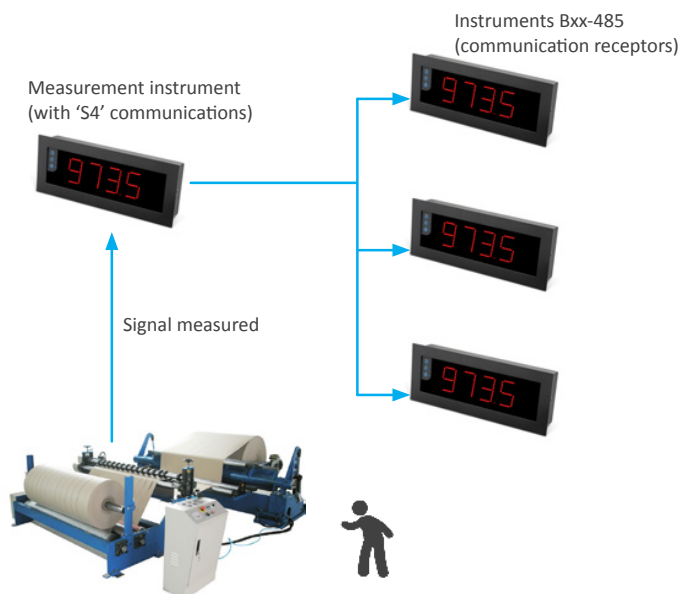### Connections for remote keypad

GND

SQ (■)

UP (▲)

LE (◄)
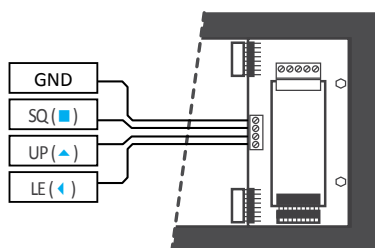
Example of application with control

Temperature reading from a thermocouple with control of a relay alarm in case of temperature exceeding a predefined limit. The relay can directly control a visual alarm. Reading values are then sent to a central SCADA system for storage through the Modbus RTU communication.

Modbus RTU (isolated)

25 m.

Thermocouple

Relay 1

Alarm
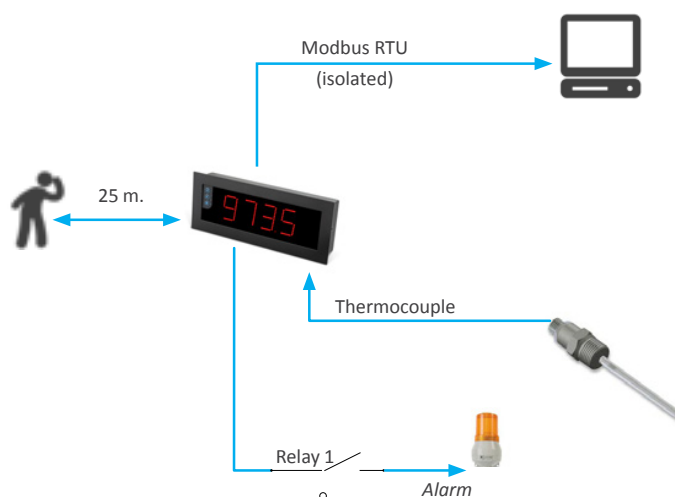
One measure, multiple information points

The large format meters from Series B can measure a wide variety of signals, and can integrate multiple output and control options. Option 'S4' for communications can be configured to transmit the measure directly to remote information points.

Instruments Bxx-485 (communication receptors)

Measurement instrument (with 'S4' communications)

Signal measured

45 YEARS 1969-2014

Q ISO 9001 Certified Quality

CE EN-61010-1 Security

CE EN-61326-1 Electromagnetic C.

5 YEARS Extended Warranty

Other options

Red color
JPG

Red leds

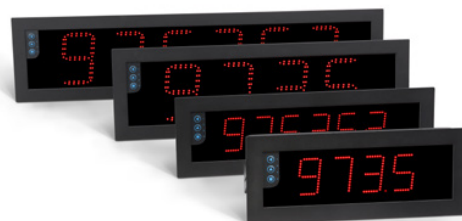### Green color
JPG

Green leds

White color
JPG

White leds

Cable output
JPG

Preinstalled cable, 2 meters

Accessories

RKB
Remote keypad

IPB24
JPG

IP65 protection for the B24 panel junction

IPB26
JPG

IP65 protection for the B26 panel junction

IPB44
JPG

IP65 protection for the B44 panel junction

IPB46
JPG

IP65 protection for the B46 panel junction

Others formats within the Series B

	Digit height	Digits	Reading distance
Format B24	60 mm	4	up to 25 meters
Format B26	60 mm	6	up to 25 meters
Format B44	100 mm	4	up to 50 meters
Format B46	100 mm	6	up to 50 meters

Other temperature meters

Series M

DIGITAL PANEL METER
SERIES M
Full Signal Ranges Available

4, 5 and 6 digits
digit height . . . . . . 14 mm
color . . . . red, green
vision . . . . 5 meters
size . . . . 96 x 48 mm

Series K

DIGITAL PANEL METERS
SERIES K
20 mm Digit Size

Further view
digit height . . . . . . 20 mm
color . . . . red
vision . . . . 8 meters
size . . . . 96 x 48 mm

Series S

DIGITAL PANEL METERS
SERIES S
Compact Size 72x36 mm

Compact size
digit height . . . . . . 14 mm
color . . . . red, green
vision . . . . 5 meters
size . . . . 72 x 36 mm