

ITXPlus

Universal, loop powered signal isolating converter

The ITXPlus is a compact signal isolating converter that is loop-powered, programmable and electrically isolated. On the input side, you can connect DC-current/voltage signals, 2-, 3-, or 4-wire PT100s, and thermocouples. The ITXPlus measures, filters and separates the input signals. It converts them into a proportional signal from 4 to 20 mA. The ITXPlus is supplied using a 4 to 20 mA current loop on the output side. For linear temperature measurements, you can connect all standard types of thermocouples and resistance temperature detectors (RTDs). The ITXPlus can also process signals from any non-linear resistance setpoint device, such as the NTC, PTC, or log. potentiometer. The appropriate characteristic is programmed in a configurable table containing up to 101 measured values.

Furthermore, the ITXPlus can be connected to resistors, potentiometers and sensors which operate in the mV/mA range. The internal program also features many square-root, linear and x3/2-/x5/2-transfer functions. Other characteristic curves which have not been pre-programmed can be entered directly using a PC. In this way you can reproduce any sensor's characteristic curve.

The T-Set software can be used for configuration or for showing measurement trends. The CBX100 interface connects the ITXPlus with the PC. It implements complete electrical isolation between the serial port and the signal converter.

Technical data

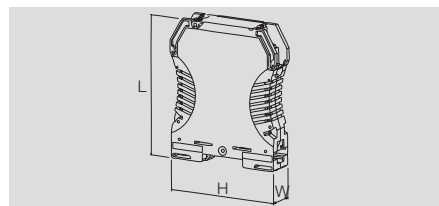
Inputs		
Type		
Thermocouple inputs	Type	Standard
	B	
	C	
	E	IEC584
	J	
	K	
	L	DIN 43710
	N	
	R	IEC584
	S	
	T	
	W3, W5	ASTM E98890
	User-defined Input	
	Cold-junction compensation	
Wire-break recognition		
mA		
Volt		
mV		
2, 3, 4-wire RTD	Type	Standard
	PT 100	DIN 43710
	PT 100	JIS
	PT 200	DIN 43710
	PT 200	JIS
	NI 120	DIN 43710
	CU 100	DIN 43710
	Cable resistance	
	Sensor current	
	Influence of cable resistance sensor (3/4 wire)	
Resistance		
Accuracy		
Type	Range	
E,J,K,L,N,T,U	< 500 °C	
	> 500 °C	
B, C, R, S, W3, W5		
mV, V, mA		
PT100/RTD	All	
Resistance		

Thermocouple, PT100/RTD, mA, volt, mV, resistance		
Lower limit	Upper limit	Min. range
400 °C	1828 °C	200 °C
0 °C	2000 °C	
-100 °C	1000 °C	
-100 °C	1200 °C	50 °C
-180 °C	1372 °C	
-100 °C	900 °C	
-180 °C	1300 °C	100 °C
-50 °C	1760 °C	
-50 °C	1760 °C	200 °C
-200 °C	400 °C	50 °C
0 °C	2300 °C	200 °C
2-101 values		
± 1.0 °C		
yes		
- 10 mA to + 20 mA to 40 Ω input resistance (min. range 1 mA)		
- 5 V to + 10 V to 2 M Ω input resistance (min. range 0,5 V)		
- 100 mV to + 200 mV to 2 M Ω input resistance (min range 4 mV)		
Lower limit	Upper limit	Min. range
-200 °C	850 °C	
-200 °C	630 °C	
-200 °C	850 °C	50 °C
-200 °C	630 °C	
-80 °C	320 °C	
-100 °C	260 °C	100 °C
5 Ω max.		
0.1 mA		
< 0.002 Ω per Ω wire resistance		
0 to 10 k Ω (min. range 10 Ω)		
Temperature coefficient		Accuracy
± 0.02 °C per C° ambient temperature		≤ ± 1.0 °C
± 0.01 % of end value per °C ambient temperature		
± 0.02 °C per C° ambient temperature		≤ ± 2.0 °C
		≤ ± 0.1 % of end value
		≤ ± 0.5 °C
		≤ ± 0.1 % of end value

ITXPlus

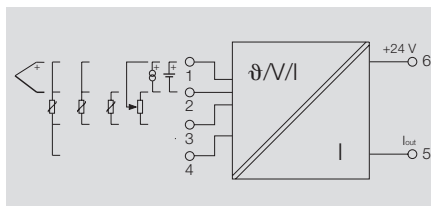
Universal signal isolator/converter with 2-wire technology

- Current, voltage and temperature inputs (RTD, TC)
- Supply via output loop (Output loop-powered)
- PC-programmable with T-SET, download at www.weidmueller.com
- Pluggable connection terminals



ITXPlus

Programmable with T-SET



Technical data

Input	
Type	Type, thermocouple
Input current	
Input voltage	
Input resistance, voltage/current	
Output	
Type	
Output current	
load impedance current	
General data	
Supply voltage	
Humidity	
Temperature coefficient	
Ambient temperature / Storage temperature	
Long-term drift	
Step response time	
Insulation coordination	
Impulse withstand voltage	
Rated voltage	
Insulation voltage	
EMC standards	
Approvals	

Universal signal isolator / signal amplifier, thermocouple, RTD B / C / E / J / K / L / N / R / S / T / W3 / W5 - 200...+ 2300 °C depending on thermocouple -10...+20 mA (min. span 1 mA) -5...+10 V / -100...+200 mV (min. span 0.5 V / 4 mV) 2 MΩ / 40 Ω	
Current output 4...20 mA typ. 700 Ω @ 24 V DC	
10...40 V DC, loop powered 10...90 % (no condensation) typ. 0.02 % / °C -10 °C...+70 °C / -20 °C...+70 °C 0.1 % / 10.000 h Typ. 200 ms (10...90%)	
4 kV (1.2/50 μs) 300 V _{eff} 2 kV input / output DIN EN 61326 cULus; CE	

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Screw connection	
1.5 / 0.5 / 2.5	
92.4 / 12.5 / 112.4	

Ordering data

Universal input

Type	Qty.	Order No.
ITX+ 4-20mA/4-20mA	1	7940016563

Note

Accessories

CBX100 USB configuration interface - 7940025031 Refer to Accessories for markers

Connections

Terminal	Signal	
5	Loop -ve	Supply voltage
6	Loop +ve	
1	Signal + Power supply Sensor	Thermocouple
2	Signal + Power supply Storage (only for programming)	
1	A-Sense	4-wire PT100/RTD (or resistance)
3	A	
2	B	
4	B-Sense	3-wire PT100/RTD (or resistance)
1	A-Sense	
3	A	
2	B	2-wire PT100/RTD (or resistance)
3	A	
2	B	Voltage (mV or V)
1	Signal +	
2	Signal -	Current (mA)
1	Signal +	
2	Signal -	Potentiometer
3	A	
1	Wiper	
2	B	