

ITXPlus

Universal loop-powered (two-wire) signal isolator/converter

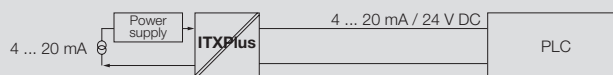
The ITXPlus is a compact, loop-powered, electrically-isolated, programmable signal isolator/converter. On the input side, optionally DC-current/voltage signals, 2-, 3-, or 4-wire PT100s, and thermocouples can be connected. The ITXPlus measures, filters and isolates the input parameters. It converts them into a proportional 4...20 mA signal.

For linear temperature measurements, all standard types of thermocouples and resistance temperature detectors (RTDs) can be connected. The ITXPlus can also process signals from any non-linear resistance device, such as an NTC, PTC, or log. potentiometer. For this, the appropriate characteristic may be programmed into a table containing up to 101 measurement values.

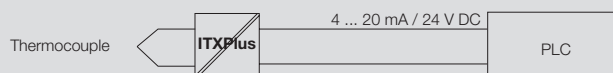
If the sensor is replaced or changed on the input side, then a fully-automatic calibration may be performed. The internal program also features many square-root, linear and $x^{3/2}$ -/ $x^{5/2}$ -transfer functions. Other characteristics which have not been pre-programmed can be entered directly using a PC. In this way, any sensor may be reproduced.

The configuration software is user-friendly and runs on any PC after installation. It also allows the ITXPlus to be configured during active operations. The CBX100 interface connects the ITXPlus with the PC. It implements complete electrical isolation between the serial port and the signal transmitter.

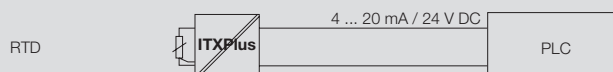
Application 1:



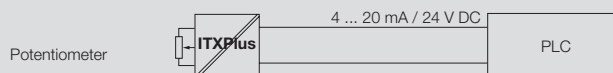
Application 2:



Application 3:



Application 4:



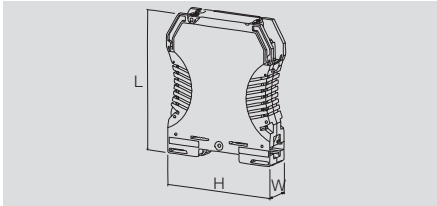
The ITXPlus signal converter, which is rail mounted, and the CBX100 interface have the following technical characteristics:

- A universal input for DC signals/thermocouples and RTD sensors
- Complete electrical isolation
- Loop-powered output
- Programmable via PC
- Automatic cold-junction compensation for thermocouple inputs
- Automatic wire-length compensation for resistance temperature detector (RTD) inputs
- Sensor wire-break detection
- Pre-set and user-defined linearisation
- Compact design - 12.5 mm width
- Mounts on TS35 rail

ITXPlus Series

Universal signal isolator / amplifier in 2-wire design

- Output loop-powered
- Programmable with PC
- Pluggable connection terminals
- Compact housing

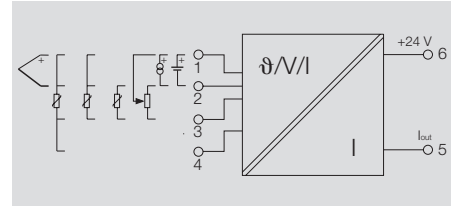


ITXPlus

Programmable with T-Set



- Current or voltage input
- Thermocouple
- Temperature resistance
- Conversion, isolation and filtering of all standard types of signals and sensors



Technical data

Input	
Type	Type, thermocouple
Input current	
Input voltage	
Input resistance	
Output	
Type	
Output current	
Limits of range	
Residual ripple	
Load resistance	
Calibration / set-up	
General data	
Voltage supply	
Influence on the voltage supply	
Humidity	
Temperature coefficient	
Long-term drift	
Cycle time	
Digital filter factor	
Interference radiation	
Step response time	
Impulse withstand voltage	
Isolation voltage	
Rated voltage	
Transmit function	
Operating temperature/Storage temperature	
EMC standards	
Approvals	

Universal signal isolator / amplifier, thermocoupler, RTD
B / C / E / J / K / L / N / R / S / T / W3 / W5
-200...+ 2300 °C depending on thermocoupler
-10...+20 mA (min. span 1 mA)
-5...+10 V / -100...+200 mV (min. span 0.5 V / 4 mV)
2 MΩ (Voltage input) or 40 Ω (current input)
Current output
4...20 mA
+ 22 mA
< 20 mV _{SS}
[(V _s - 10) / 0.02] Ω (Typically 700 Ω @ 24 V DC)
PC and CBX100 Interface required 7940010208
10...40 V DC, powered by loop current
0.005 % / V
10...90 % (no condensation)
typ. 0.02 % / °C
0.1 % / 10,000 h
20...200 ms
1...100
< ± 0,5 %
Typically 200 ms (10 to 90 %)
4 kV (1.2/50 μs)
2 kV between ports
300 V _{eff}
direct or reverse
-10 °C...+70 °C / -20 °C...+70 °C
DIN EN 61326
CE, cULus

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	3-wire PT100/RTD (or resistance)
3	A	
2	B	2-wire PT100/RTD (or resistance)
3	A	
1	Signal +	Voltage (mV or V)
2	Signal -	
1	Signal +	Current (mA)
2	Signal -	
1	Wiper	Potentiometer
2	B	

Data of Housing	
Clamping range (rating- / min. / max.)	mm²
Type of connection / Terminal rail	
Type of Housing / Weight	
Length x width x height	mm
Note	

1.5 / 0.5 / 2.5
Screw connection / TS 35
Plastic housing / 83 g
92.4 x 12.5 x 112.4

Ordering data

Type	
	Universal input
	Special adjustment
Note	

Type	Qty.	Order No.
ITX+ 4-20mA/4-20mA	1	7940016563
ITX+ variable	1	8944980000
Note		
Additional input and output versions available on request		

Accessories

Note

CBX100 Interface - 7940010208
Connects the ITX+ with the PC for calibration

MANN SERIES

MANN SERIES – Signal transmitter

ITXPlus Series

Universal signal isolator / amplifier in 2-wire design

- Output loop-powered
- Programmable with PC
- Pluggable connection terminals
- Compact housing

ITXPlus

- Current or voltage input
- Thermocouple
- Temperature resistance
- Conversion, isolation and filtering of all standard types of signals and sensors

D

Technical data

Inputs

Typ	Typ	Standard
Thermocouple inputs	B	
	C	
	E	IEC584
	J	
	K	
	L	DIN 43710
	N	
	R	IEC584
	S	
	T	
	W3	ASTM E98890
	W5	
	User-defined Input	
	Cold-junction compensation	
	Wire-break recognition	

mA	
volt	
mV	

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	All
PT100/RTD	
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	50 °C
-100 °C	1200 °C	
-180 °C	1372 °C	
-100 °C	900 °C	
-180 °C	1300 °C	100 °C
-50 °C	1760 °C	200 °C
-50 °C	1760 °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	50 °C
-200 °C	630 °C	
-200 °C	850 °C	
-200 °C	630 °C	
-80 °C	320 °C	
-100 °C	260 °C	100 °C
Cable resistance	5 Ω max.	
Sensor current	0.1 mA	
Influence of cable resistance sensor (3/4 wire)	< 0.002 Ω per Ω wire resistance	
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

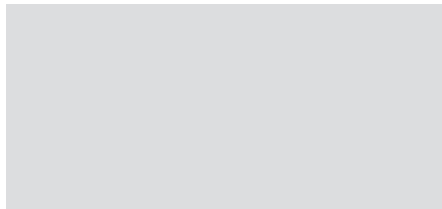
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Weidmüller

CBX100 USB



- Interface for ITXPlus configuration
- USB port for PC
- Tx and Rx status displays



Technical data

Display

Status indicator

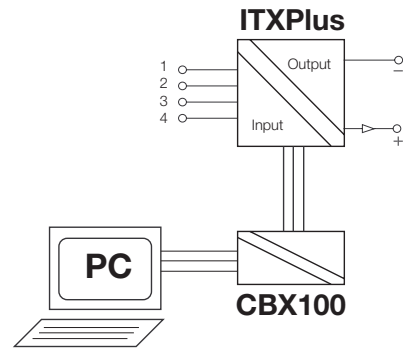
General data

Isolation voltage
 Operating temperature / storage temperature
 Air humidity
 Software
 Interface
 Approvals

LED (send / receive)

500 V for 60s
 -20 °C...+70 °C / -25 °C...+70 °C
 10...90 % (no condensation)
 T-Set as of V.4.2 (can be downloaded from www.mannseries.com)
 USB
 CE, cULus

Connections



Note: Disconnect the charging unit before operating the CBX100

Note:

Ordering data

Type	Interface device
CBX100 USB	

Type	Qty.	Order No.
CBX100 USB	1	7940025031

Note:

Accessories

Note: