

ITXPlus

Available from

 BREWSSUPPLY.COM

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

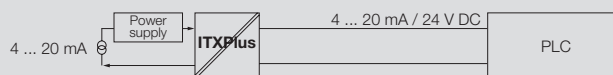
The ITXPlus is a compact, loop-powered, electrically-isolated, programmable signal isolator/converter. On the input side, optionally DC-current/voltage signals, 2-, 3-, or 4-wire PT100s, and thermocouples can be connected. The ITXPlus measures, filters and isolates the input parameters. It converts them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

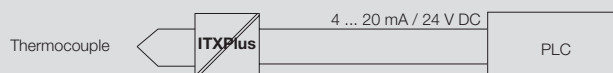
If the sensor is replaced or changed on the input side, then a fully-automatic calibration may be performed. The internal program also features many square-root, linear and $x^{3/2}$ -/ $x^{5/2}$ -transfer functions. Other characteristics which have not been pre-programmed can be entered directly using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

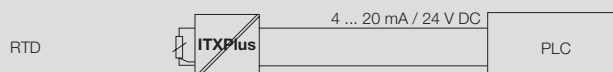
Application 1:



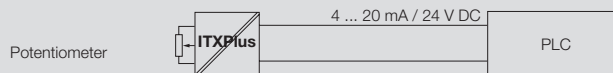
Application 2:



Application 3:



Application 4:



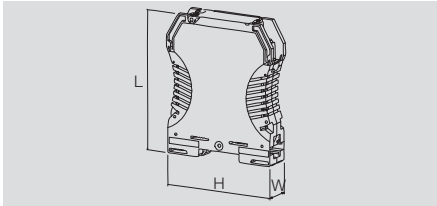
The ITXPlus signal converter, which is rail mounted, and the CBX100 interface have the following technical characteristics:

- 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

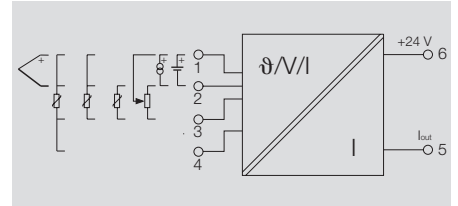


ITXPlus

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

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

Ordering data

Type	
Universal input	
Special adjustment	

Note

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}
[(Vs - 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

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

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	

Accessories

Note

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

MANN SERIES – Signal transmitter

ITXPlus Series

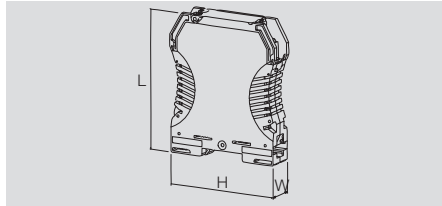
Universal signal isolator / amplifier in 2-wire design

- 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



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		

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		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)

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)			

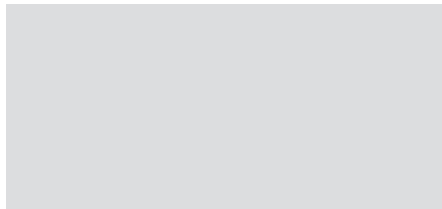
Lower limit	Upper limit	Min. range
-200 °C	850 °C	50 °C
-200 °C	630 °C	
-200 °C	850 °C	
-200 °C	630 °C	
-80 °C	320 °C	
-100 °C	260 °C	100 °C

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

CBX100 USB



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



Technical data

Display

Status indicator

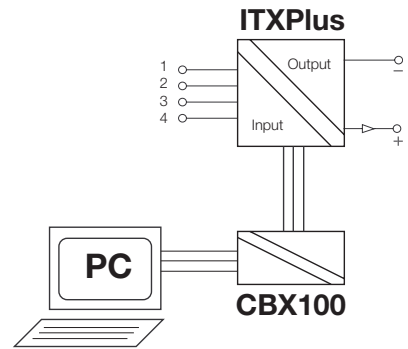
General data

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	

Type	Qty.	Order No.
CBX100 USB	1	7940025031

Note:

Accessories

Note:

Available from
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 BREWSSUPPLY.COM