XZ7 Series Universal Four-Wire Transmitters

- ***Universal design – can be configured for nearly any sensor input***
- ***Low cost handheld programmer permits easy field changes***
- ***Choice of voltage, current, or frequency outputs***
- ***Thermocouple or RTD linearization***
- ***CSA approved general purpose/FM approved non-incendive***
- ***Fully isolated input/output/power***
- ***Surface or rack mounting***
- ***Accepts any of 10 thermocouples, 6 RTDs, AC and DC current and voltage, frequency, and variable pulse duration inputs***

mTech's XZ7 universal, microprocessor-based, four-wire transmitter can convert a wide range of customer-selectable inputs into any of six output options. Inputs and outputs are easily set or field changed by using a low cost, handheld programmer, which displays codes representing range selection and calibration data in engineering units.

The XZ7 accepts inputs from 10 different thermocouple types, six RTD types, AC and DC current and voltage, resistance, frequency, and variable pulse duration. Once chosen, the input span and zero can be selected anywhere within the range of the input type. Thermocouple and RTD linearization is provided.

The Canadian Standards Association (CSA) has approved the XZ7 as general purpose instrumentation. Factory Mutual (FM) has approved it as non-incendive for use in Class I, Division 2, Groups A, B, C, and D, and suitable for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 hazardous areas. Other operating safeguards include full isolation of inputs, outputs, and power, automatic self calibration for long-term stability, and thermal characterization to eliminate drift due to ambient temperature changes. All programmed data is held in non-volatile memory and retained when power is removed.

The XZ7 is available two ways: for stand-alone surface mounting and for 19" rack mounting. Options include a 4½ digit indicator to display input or output values and an 8 digit totalizer for tracking scaleable 0 – 120 Hz outputs in flow applications.

Specifications

INPUT RANGES

Thermocouples:
J, K, T, E, R, S, B and N
5 mV minimum span

RTDs (2 or 3-wire)
*Pt*100 (DIN and REF), *Ni*100, *Ni*120, *Cu*10, *Pt*500-DIN

Resistance:
0 to 19.999 ohms
0 to 199.99 ohms
0 to 1.9999 K ohms
0 to 16 K ohms

DC Voltage:
-10 mV to 120 mV
0 to 1 V
0 to 10 V
0 to 400 V

DC Current:
0 to 50 mA
0 to 5 A

AC Voltage, 50/60 Hz:
0 to 10 mV
0 to 1 V
0 to 8 V
0 to 300 V

AC Current, 50/60 Hz:
0 to 10 mA
0 to 5 A

Frequency:
0 to 19.999 Hz
0 to 199.99 Hz
0 to 1.9999 KHz
0 to 5 KHz

Pulse Width:
0 to 19.999 ms
0 to 199.99 ms
0 to 1.9999 s
0 to 16.777 s
0 to 134.21 s

Input Impedance (Zin):
Thermocouple: 100 M ohms
RTD/Resistance: Current source – dissipates 16 mW in input resistor
Voltage DC: 100 M ohms
(1 M ohm for 400 V input range)
Voltage AC: 100 M ohms
(1 M ohm for 300 V input range)
Current DC: 100 M ohms for 0 – 50 mA dc
(use external shunt for inputs > 50 mA)
Current AC: External shunt required
Frequency: 100 M ohms
Zero and span can be set anywhere within the input and output selected.

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Outputs:
0 – 10 Vdc into 10 K ohms (e.g. 1 – 5 V)
0 – 10 mA dc into 0 – 2 K ohms (e.g. 1 – 5 mA)
0 – 20 mA dc into 0 – 1 K ohms (e.g. 4 – 20 mA)
0 – 40 mA dc into 0- 500 ohms (e.g. 0 – 30 mA)
0 – 50 mA dc into 0 – 400 ohms (e.g. 10 – 50 mA)

Standard with preceding outputs
0 – 120 Hz/Alarm: NPN with 4.7K ohms pull-up to 5 Vdc can be connected to 30 V, 100 mA max external.

Output Signal Resolution:
12 bits on full range

Input Protection:
Current limiting with diode clamping

Performance:
Ref Accuracy: ± 0.1%
Temperature Effect: ±0.006%/ºC (0-45ºC)
Line Voltage Effect: Nil
Response Time: 200 ms typical, 400 ms Max per sample
Ambient Temperature Conditions:
Operating: -20 to 45ºC (-4 to 113ºF)
Storage: -40 to 80ºC (-40 to 176ºF)
Humidity: 95% non-condensing

Isolation:
Input/Output/Power Supply 500 Vdc
1 minute

Classification:
CSA approved – General purpose
FM approved – non-incendive for use in Class I, Division 2, Groups A, B, C, and D, and suitable for use in Class II, Division 2, Group G and Class III, Divisions 1 and 2 hazardous areas.

Power Supply
115 V, 230 Vac, 50/60 Hz ±10%, 8 VA
24 Vdc ±10%, 8 W

Mounting
Individual surface or high-density 19" rack mounting

Dimensions:
Surface: 7" (177.8 mm) H x 4.20" (106.7 mm) W x 2.62" (66.6 mm) L
Rack: 5.22" (132.5 mm) H x 9.42" (239.2 mm) W x 19" (483 mm) L

Weight:
Surface Model: 2.5 lbs (1.14 kg)
Rack Model: 1 lb (0.45 kg)
Rack (less mounting): 1.5 lbs (0.68 kg)

PROGRAMMER
The XZ9D programmer is powered by the XZ7 Transmitter when it is plugged into the program socket. A 4½ digit LCD displays a code representing range selection and calibration data in engineering units. A membrane keypad with audible feedback selects input type, range, etc.

INDICATOR
An optional 4½ digit indicator (XZ9-IND) replaces the terminal cover of the XZ7S and is used to indicate the input or output values.

TOTALIZER
An optional 8 digit totalizer (XZ9-TOT) replaces the terminal cover of the XZ7S and is used to totalize from the scaleable 0-120 Hz output for flow applications.

Ordering Information

When ordering, please specify the full model number and options(s) desired:

Part Number	Description
XZ7S	Surface model
XZ7R	Rack model

Power	Description
P1	115 V, 50/60 Hz
P2	230 V, 50/60 Hz
P3	24 Vdc

Options	Description
ZB	Downscale T/C burnout
ZF	External shunt resistor, 1A
ZG	External shunt resistor, 5A
XH	Conformal coating of PC boards
XT2	Lamecoid engraved tag
XT3	Stainless steel engrave tag
XT1	Standard plastic tag
ZP	17 Vdc @ 40 mA max power for xmtr
XH4	NEMA 4 water tight enclosure (for XZ7S)
XE7	Explosion-proof enclosure (for XZ7S)
XM7	"Z" conduit/cable bracket (for XZ7S)

Racks/ Accessories	Description
XZ19-DIN	10 UNIT PLUG-IN 19" RACK
XZ19-DINF	DIN rack with front access terminations
XZ19-BL	Single unit blank front plate
XZ19-SVC	Module extender service card
XZ19-N1	NEMA 1 general purpose enclosure (for XZ19-DIN)
XZ19-N4	NEMA 4 water tight enclosure (for XZ19-DIN)
XZ19-N12	NEMA 12 oil-tight enclosure (for XZ19-DIN)
XZ9D-PROG	Handheld programmer

REPRESENTED BY:

XZ7 Rev 1/091202