XLE/XLEe & XLT/XLTe - Model 5

12 DC In, 12 DC Out, 2 – 14/16-bit Analog In (mA/V/Tc/mV/RTD), 2 – 12-bit Analog Out

MAN1116_23_EN_XLET_Mod5



Find the user manual via the Documentation Search page on the Horner website.

Part Numbers

Global Part Numbers	
XLE - Model 5	HE-XE105
XLEe - Model 5 with Ethernet	HE-XE1E5
XLT - Model 5	HE-XT105
XLTe - Model 5 with Ethernet	HE-XT1E5
European Part Numbers	
XLE - Model 5	HEXE220C115
XLEe - Model 5 with Ethernet	HEXE221C115
XLT - Model 5	HEXT240C115
XLTe - Model 5 with Ethernet	HEXT241C115

Accessories and Add-Ons

Part #	Description
HE-BAT009	CR2450 Lithium Coin Battery
HE-XCK	Programming Cables
HE-XDAC	2 channel Analog Output I/O option kit, selectable 0-10V, +/-10V, 4-20mA.
HE-XDAC107	4 channel Analog Output I/O option kit, selectable 0-10V, +/-10V, 4-20mA.
HE-XKIT	Blank I/O Board
HE200MJ2TRM	Adapter, RJ45 (8P8C) male to 8-position terminal strip.
HE-FBD001	Ferrite core for filtering out electrical noise.

XLE/XLT User Manual - MAN0878

Find the user manual via the Documentation Search page on the Horner website.

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TECHNICAL SPECIFICATIONS

General Specifications

Primary Power Range	10-30VDC
Maximum Current	500mA, Class 2 750mA, Class 2 with heater*
Required Power (Steady State)	130mA @ 24VDC
Inrush Current	30A for < 1ms
Typical power backlight 100%	136mA @ 10V (1.36 W) 64mA @ 24V (1.53 W)
Power Backlight Off	15mA @ 24V (0.36 W)
Power Ethernet Models	35mA @ 10V (0.35 W) 20mA @ 24V (0.48 W)
Heater Option*	250mA @ 24VDC with heater*
Real Time Clock	Battery backed; lithium coin cell CR2450
Clock Accuracy	+/- 90 Secs/Month
Relative Humidity	5 to 95% Non-condensing
Operating Temperature	-10°C to +60°C
Operating Temperature (-22)	-40°C to +60°C
Storage Temperature	-20°C to +70°C
Storage Temperature (-22)	-40°C to +70°C
Weight	0.75 lbs/ 340 g (without I/O)
Altitude	Up to 2000m
Rated Pollution Degree	Evaluated for Pollution Degree 2 Rating
Certifications (UL/CE)	North America or Europe
Enclosure Type	1, 3R, 4, 4X, 12, 12K & 13

*Heater Option (Model # plus "-22")

Control and Logic

Control Language Support	Register-Based Advanced Ladder; Variable-Based Advanced Ladder; IEC 61131-3 Languages
Logic Program Size	256kB
Scan Rate	0.7ms/kB logic (XLE) 0.8ms/kB logic (XLT)
Digital Inputs	2048
Digital Outputs	2048
Analog Inputs	512
Analog Outputs	512
General Purpose Registers	9,999 (words) Retentive 2,048 (bits) Retentive 2,048 (bits) Non-retentive

User Interface

Display Type	Transflective LCD Sun- light Readable
Resolution	128 x 64 pixels (XLEe) 160 x 128 pixels (XLTe)
Color	Monochrome
Built-In Storage	16 MB
User-Program. Screens	1023 Maximum pages; 50 objects per page
Backlight	LED
Backlight Lifetime	30,000+ hrs
Brightness Control	0-100% (XLT) via System Register %SR57 On/Off (XLE) via System Register %SR57
Number of Keys	20 (XLE) 5 (XLT)
Touchscreen (XLTe)	Resistive 1,000,000+ touch life

Connectivity

Serial Ports	RS-232 full handshaking or RS-485 half duplex on first Modular Jack (MJ1) RS-232 or RS-485 on second Modular Jack (MJ2)
Serial Protocols	Modbus RTU, GE SNP, GPS (See Cscape for additional protocols)
USB Mini-B	Programming only
CAN	1 x CAN Port, Isolated 1 kV
CAN Protocols	CsCAN, CANopen, DeviceNet Controller, J1939
Ethernet	Ethernet versions only (XLEe & XLTe)
Ethernet Protocols	TCP/IP, Modbus TCP, FTP, SRTP, EGD, ICMP, ASCII
Remote I/O	SmartRail, SmartStix, SmartBlock, SmartMod
Removable Memory	MicroSD, SDHC, SDXC, IN FAT32 format, support for 32 GB Maximum Application Updates, Datalogging
Audio (XLTe only)	Beeper, System or Software Controlled

HORNER AUTOMATION GROUP

Analog Inputs, High Resolution

Number of Channels	2
Input Ranges (Selectable)	0-10VDC; 0-20mA; 4-20mA; 100mV PT100 (-200 to 850˚C); J, K, N, T, E, R, S, B Thermocouples
Safe Input Voltage Range	10VDC: -0.5V to +15V; 20mA: -0.5V to +6V RTD / T/C: +/- 24VDC
Nominal Resolution	10V, 20mA, 100mV: 14 Bits; RTD, Thermocouple: 16 Bits
Input Impedance (Clamped @ -0.5VDC to 12VDC)	**Current Mode:**100Ω , 35mA Max. Continuous **Voltage Mode:**500k, 25mA Max. Continuous
%AI Full Scale	**10V, 20mA, 100mV**: 32,000 counts full scale **RTD / TC**: 20 Counts / ˚C
Max. Over-Current	35mA
Open Thermocouple Detec Current	50nA
Thermocouple: B / R / S E T J K / N	**Temperature Range**: 32˚F to 2,912˚F (0˚C to 1,600˚C) -328˚F to 1,652˚F (-200˚C to 900˚C) -400˚F to 752˚F (-240˚C to 400˚C) -346˚F to 1,382˚F (-210˚C to 750˚C) -400˚F to 2,498˚F (-240˚C to 1, 370˚C)
Thermocouple Common Mode Range	+/- 10V
Converter Type	Delta Sigma
Max. Error at 25˚C **(*excluding zero)**	*4-20mA +/- 0.10% of full scale *0-20mA +/- 0.10% of full scale *0-10VDC +/- 0.10% of full scale RTD (PT100) +/- 1.0 C˚ of full scale 0-100mV +/- 0.05% of full scale
Max. Thermocouple Error (After Warm up of 1 Hour)	+/-0.2% (+/-0.3% below -100°C) of full scale
Conversion Speed, Both Channels Converted	**10V, 20mA, 100mV**: 30 Times/Second **RTD Thermocouple**: 7.5 Times/Second
Conversion Time per Channel	**10V, 20mA, 100mV**: 16.7 ms; RTD, Thermocouple: 66.7 ms
RTD Excitation Current	250µA
Conversion Speed	Once per ladder scan

Analog Outputs

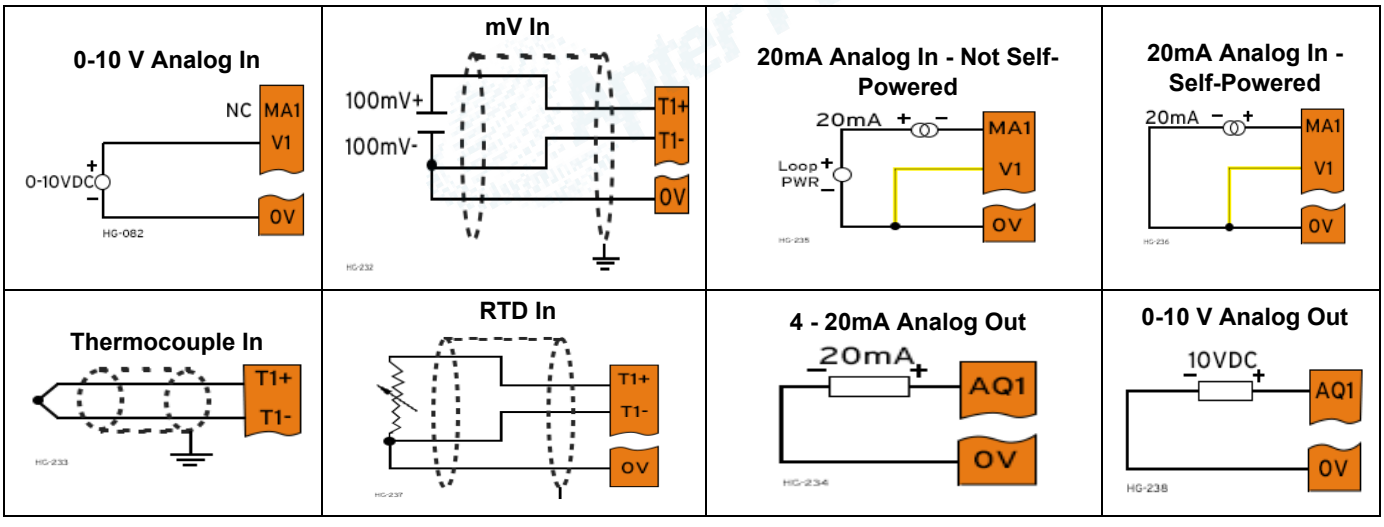
Number of Channels	2
Output Ranges	0-10VDC , 0-20mA
Nominal Resolution	12 Bits
Update Rate	Once per PLC scan

Wiring Details

Solid/Stranded Wire: 12-24 awg (2.5-0.2mm2).
Strip Length: 0.28" (7mm).
Torque, Terminal Hold-Down Screws: 4.5 – 7 in-lbs (0.50 – 0.78 N-m).

J3 Wiring - TC & RTD

Pin	Digital Model
T1+ (%AI1)	TC (1+) or RTD (1+) or 100mV (1+)
T1- (%AI1)	TC (1-) or RTD (1-) or 100mV (1-)
T2+ (%AI2)	TC (2+) or RTD (2+) or 100mV (2+)
T2- (%AI2)	TC (2-) or RTD (2-) or 100mV (2-)
AQ1 (%AQ9)	10 V or 20mA OUT (1)
AQ2 (%AQ10)	10 V or 20mA OUT (2)
0V	Common
MA1 (%AI1)	0-20mA IN (1)
V1 (%AI1)	0-10V IN (1)
0V	Common
MA 2(%AI2)	0-20mA IN (2)
V2 (%AI2)	0-10V IN (2)
0V	Common

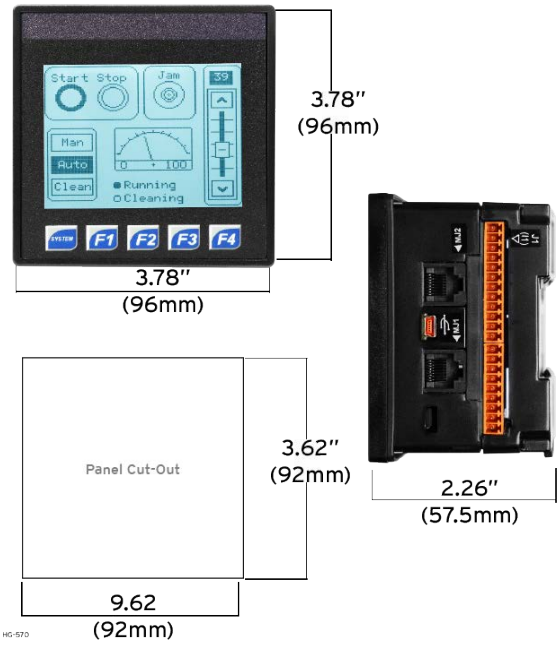


Built-In I/O

The I/O is mapped into OCS Register space, in three separate areas: Digital/Analog I/O, High-Speed Counter I/O, and High-speed Output I/O. Digital/Analog I/O location is fixed starting at 1, but the high-speed counter and high-speed output references may be mapped to any open register location .

DIMENSIONS & INSTALLATION

Dimensions & Panel Cutout



*+/- 0.1mm cutout tolerance

Installation Information

- The XLE/XLT utilizes a clip installation method to ensure a robust and watertight seal to the enclosure. Please follow the steps below for the proper installation and operation of the unit.
- This equipment is suitable for Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.
- Digital outputs shall be supplied from the same source as the operator control station.
- Jumpers on connector JP1 shall not be removed or replaced while the circuit is live unless the area is known to be free of ignitable concentrations of flammable gases or vapors.
- **WARNING**- The USB ports are for operational maintenance only. Do not leave permanently connected unless area is known to be non-hazardous.