



CURTIS

A KOHLER COMPANY



Digital Instrumentation

enGage® NXI Model 3150R





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The Curtis enGage® NXI (NX1) is a 1.54 inch (39.1 mm), bright color display packaged in a 52 mm gauge form factor. The LCD enables visualization of critical information and allows for a unique brand identity through a fully customizable user interface. The NX1 offers a range of input options including CAN, serial and IO to meet the needs of various markets and OEMs.

FEATURES

- ▶ A 1.54 inch (39.1 mm), 240 x 240 pixel LCD enables visualization of critical information and a unique brand identity through a fully customizable user interface.
- ▶ The 52 mm gauge form factor allows for easy panel mounting in new and existing applications.
- ▶ Out-of-the-box application software targeting electronic vehicles. Curtis engineers may customize the software to meet specific OEM or market needs.
- ▶ Multiple pre-configured user interfaces.
- ▶ Message center feature enables configurable runtime messages communicated over CAN.
- ▶ 1x CAN 2.0 with full J1939* and CANopen support and an optionally integrated terminating resistor.
- ▶ Three digital inputs and one low-side output.
- ▶ Serial communication interface.
- ▶ Wide voltage range supports a variety of applications.
- ▶ Integrated BDI and hour meter.
- ▶ Updateable firmware over the CAN bus or through the Curtis Integrated Toolkit™ (CIT).
- ▶ Easily operates in demanding conditions with an operational temperature range of -40°C to +70°C.
- ▶ IP67 front and IP65 rear ingress protection for electronic components.
- ▶ CE compliance*, UL recognition* and RoHS3 compliance ensure compatibility with global regulatory safety.

*Pending





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SPECIFICATIONS

Electrical

Voltage Ranges:

Nominal	Min.	Max.
12–48V	9V	60V

Operating Currents:

Voltage	LCD Heater Idle (mA)	LCD Heater Working (mA)
B+ (9V)	100	350
B+ (12V)	72	390
B+ (24V)	36	200
B+ (36V)	25	140
B+ (48V)	20	100
B+ (60V)	16	80

Baud Rate:

100 Kbps to 1 Mbps

Inputs

Switch Input Characteristics:

Switch Input Characteristics	Min.	Max.	Units
Input Active High Threshold Voltage	6.0	B+ MAX	Volts
Input Impedance	148	152	Ohms

Outputs

Lift Lockout Output Specifications:

Parameter	Min.	Max.	Condition
Continuous Current	0	.5A	
Off Voltage	–	75V	
On Voltage	0	1V	I = 1A DC



Environmental

Operating Temperature:

With LCD Heater Enabled: –40° to +70°C

Without LCD Heater Enabled: –20° to +70°C

Storage Temperature:

–40° to +85°C

Humidity:

Soak

Designed to meet EN 60068-2-78

Cyclic

Designed to meet EN 60068-2-30

Ingress Protection:

Designed to meet EN 60529

- ▶ IP65 for electronic components and IP54 for connector (mating with TYCO sealed connector).
- ▶ IP65 for electronic components and IP40 for connector (mating with TYCO unsealed connector).

Shock:

Designed to meet EN 60068-2-27

Vibration:

General: Designed to meet EN 60068-2-6

Random: Designed to meet EN 60068-2-64

Resonance: Designed to meet EN 60068-2-6

EMC

Emissions:

Designed to meet EN 12895:2015+A1:2019

Immunity:

Designed to meet EN 12895:2015+A1:2019

Regulatory Approvals

UL*: UL recognition to UL 583

CE*: The product complies with the requirements of the EMC Standards and RoHS directive 2015/863/EU (RoHS 3).

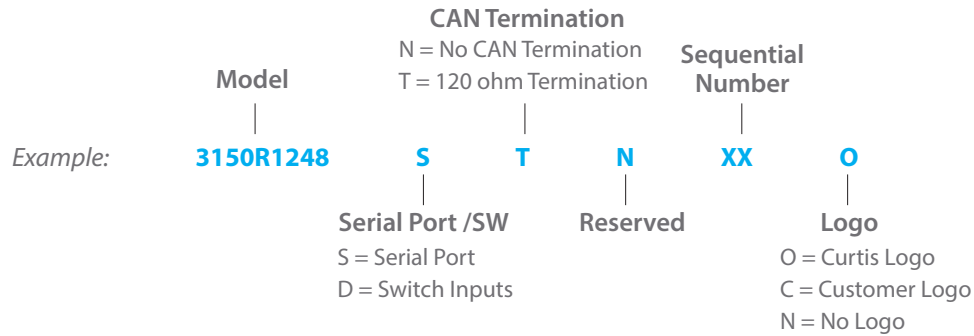
- ▶ EMC: EN 12895:2015+A1:2019
- ▶ RoHS: 2015/863/EU (RoHS 3)

*Pending

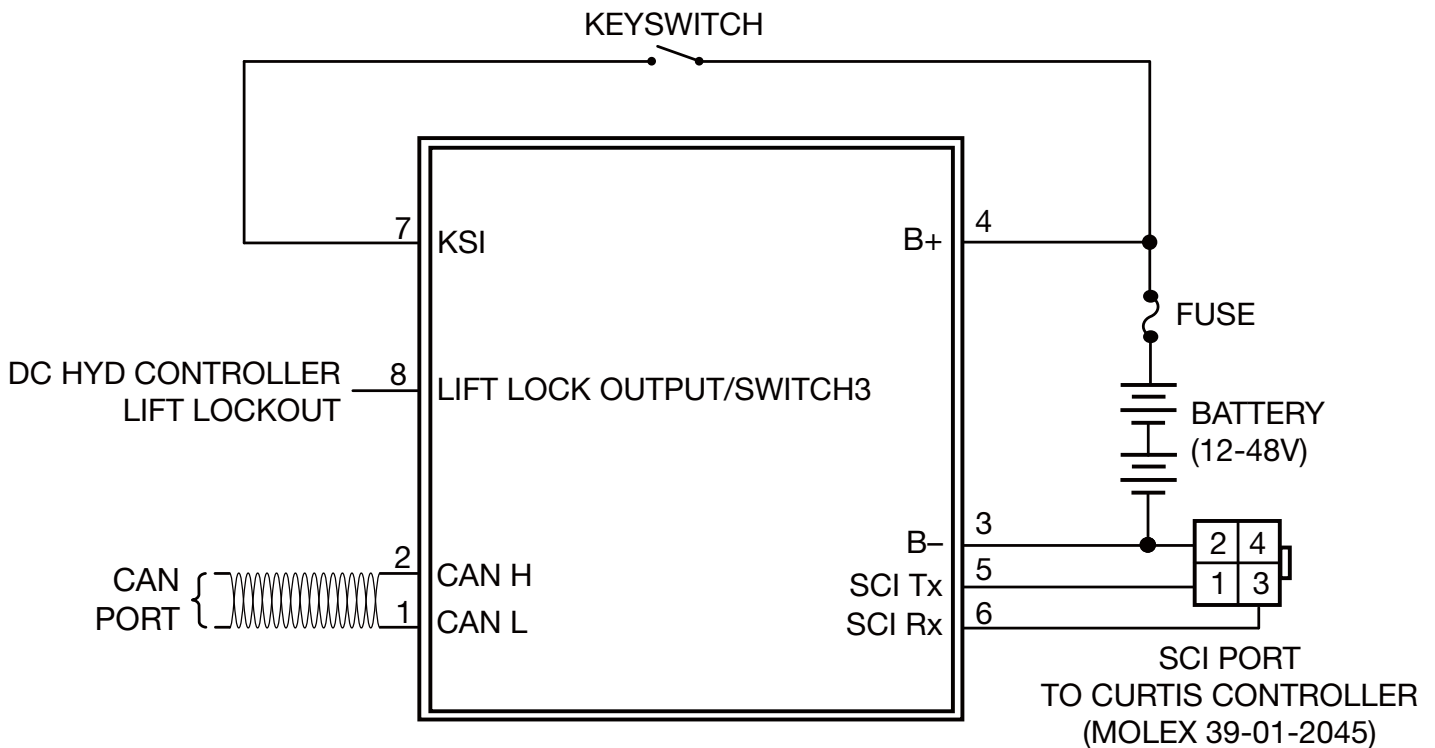


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MODEL ENCODEMENT



TYPICAL WIRING DIAGRAM





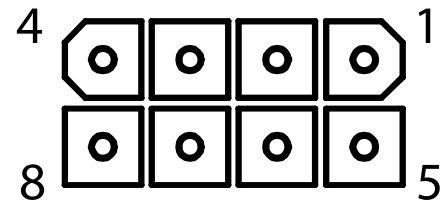
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CONNECTOR

The signals are assigned as shown in the table below.

Pin	Signal Name	Description
1	CAN Low	CANbus Low Signal
2	CAN Hi	CANbus High Signal
3	B-	Battery Common
4	B+	Battery Positive
5	SCI Tx / SW1*	Serial Communication Interface Tx/ Switch Input1
6	SCI Rx / SW2*	Serial Communication Interface Rx/ Switch Input2
7	KSI	Keyswitch Input
8	Lift Lock Output/SW3	Lift Lock Output/Switch Input3

*Note: SCI and SW1 & 2 are stuff optional in hardware



MATING CONNECTOR

The mating connector for 3150 is an 8-pin Mini-Universal MATE-N-LOK housing from Tyco Connectivity. The Tyco part numbers to assemble a mating assembly are shown in the table to the right (Mating Connector: IP40).

Mating Connector Part Numbers: IP40

Item	Part Description	Tyco P/N
1	Connector Housing	770579-1
2	Terminal (18 – 22 AWG)	770904-X

The ingress protections of 3150 connector may be improved to IP54 (from IP40) by replacing the mating connector part numbers in the table above (Mating Connector: IP40) with the part numbers shown in the table to the right (Mating Connector: IP54).

Mating Connector Part Numbers: IP54

Item	Part Description	Tyco P/N
1	Connector Housing	794821-1
2	Terminal (18 – 22 AWG)	770904-X
3	Interface Seal	794772-8
4	Single Wire Seal or Gang Seal	794758-1 or 1586359-8
5	Cavity Plug Seal (for unused terminal positions)	794995-1

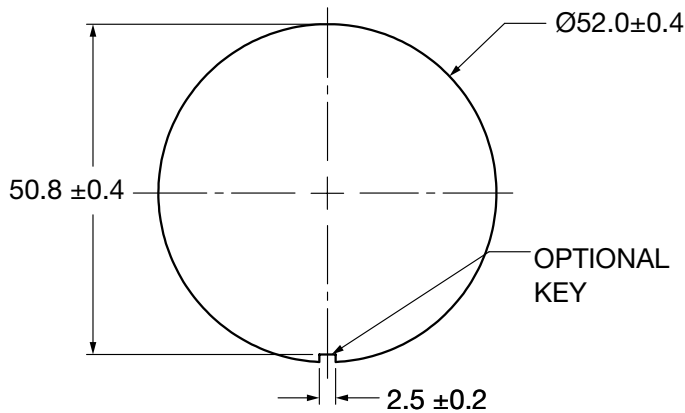
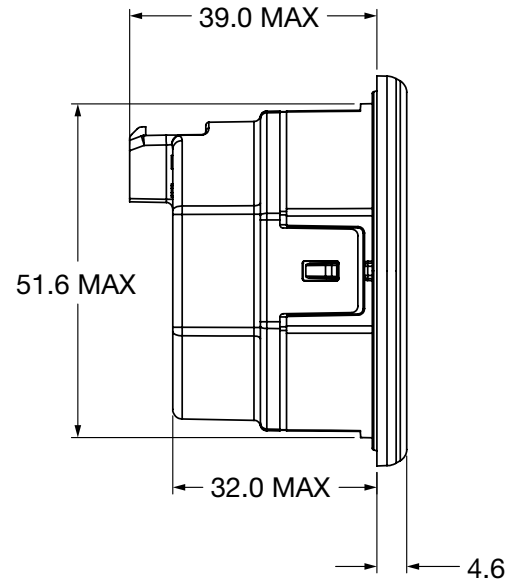
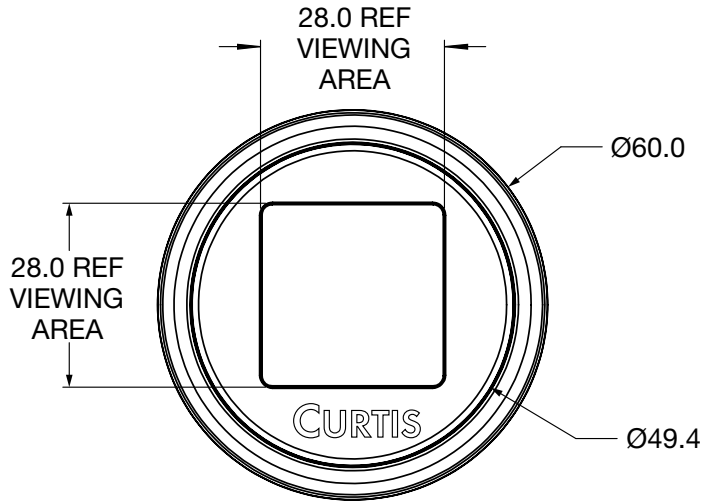
The electronic components of 3150 are sealed to IP67 in the front and IP65 in the rear.



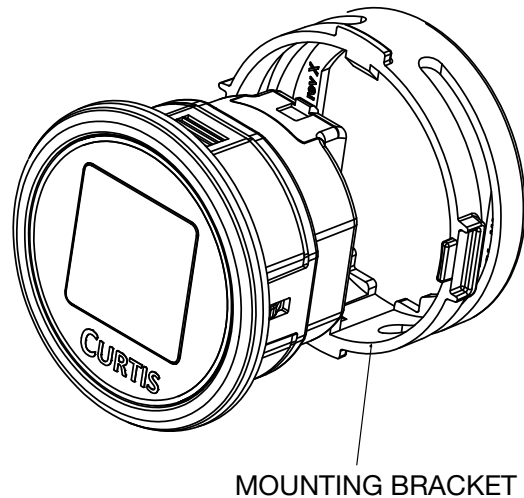


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DIMENSIONS mm



RECOMMENDED PANEL CUTOUT
PANEL THICKNESS: 0.8 to 6.4 mm



WARRANTY Two year limited warranty from time of delivery.

The Curtis Difference 
You feel it when you drive it