



CURTIS

A **KOHLER** COMPANY



## Digital Instrumentation

enGage® NXI Model 3150





## Digital Instrumentation

The Curtis enGage 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	6.0V	B+ MAX	Volts
Input Impedance	148	152	Ohms

#### Outputs

##### MOSFET Output Specifications:

Parameter	Min.	Max.	Conditions
Continuous Current	0	1A	
Off Voltage	--	75V	
On Voltage	0	0.5V	I = 1A DC



#### Environmental

##### Operating Temperature:

–40° 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

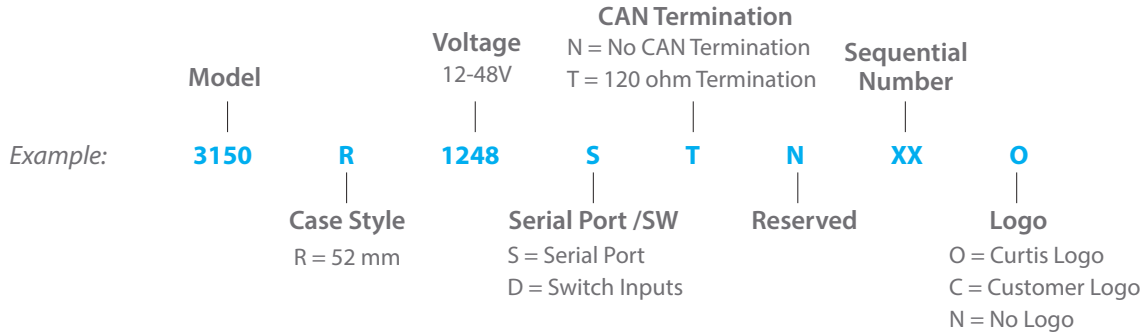
**CE:** The product complies with the requirements of the EMC Standards and RoHS directive 2015/863/EU (RoHS 3).

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

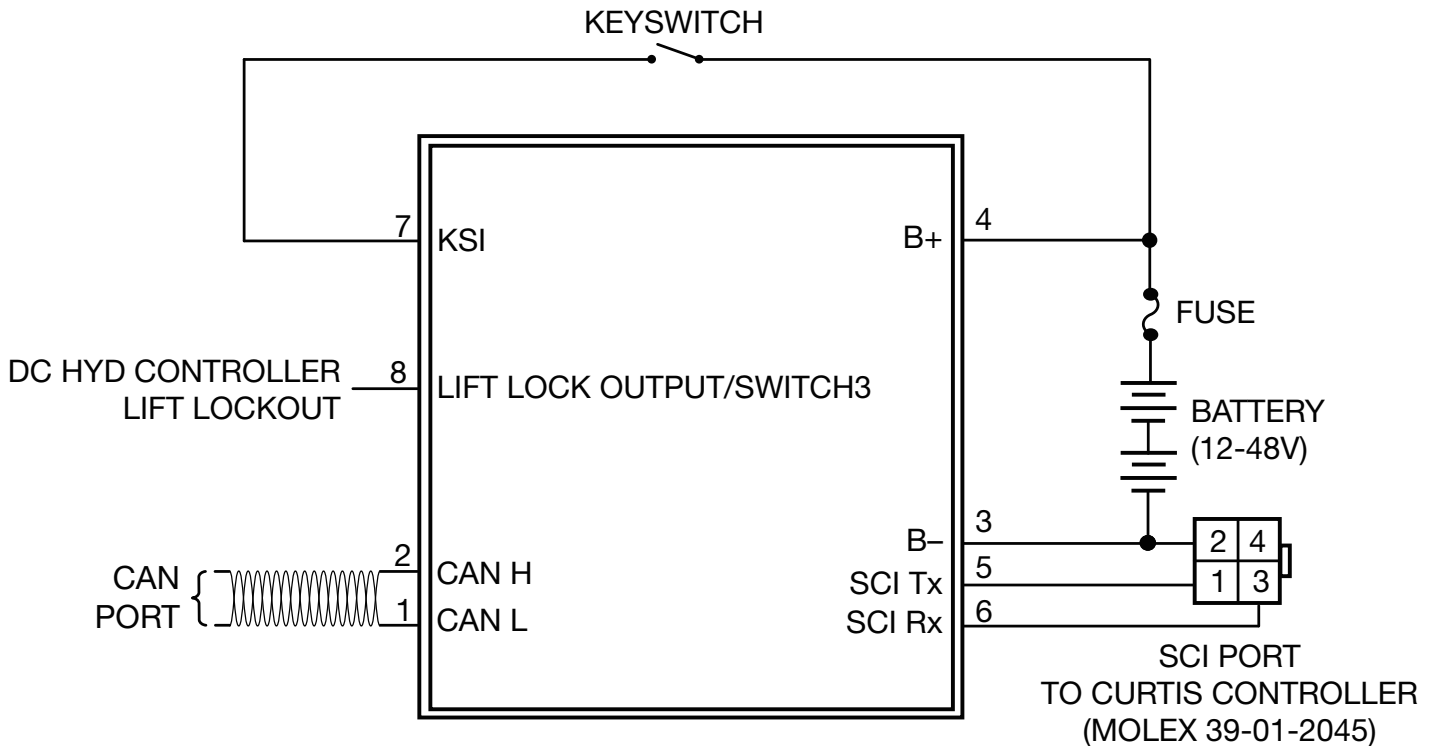


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### MODEL ENCODEMENT



### TYPICAL WIRING DIAGRAM





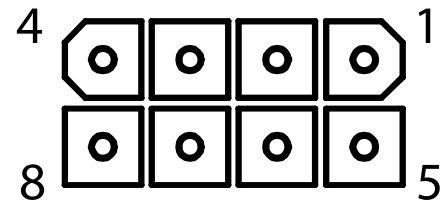
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### CONNECTOR

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

Mating Connector Part Numbers: IP54

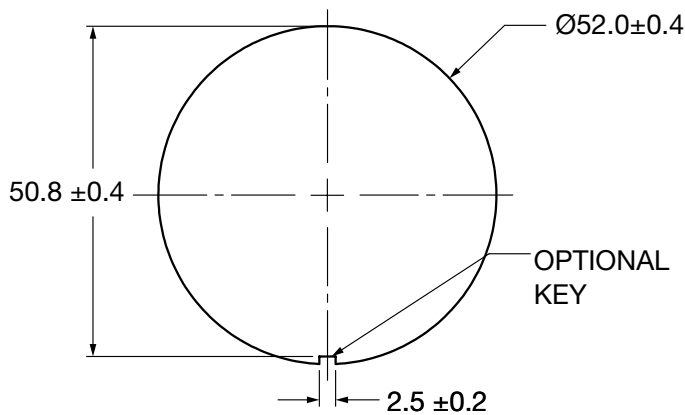
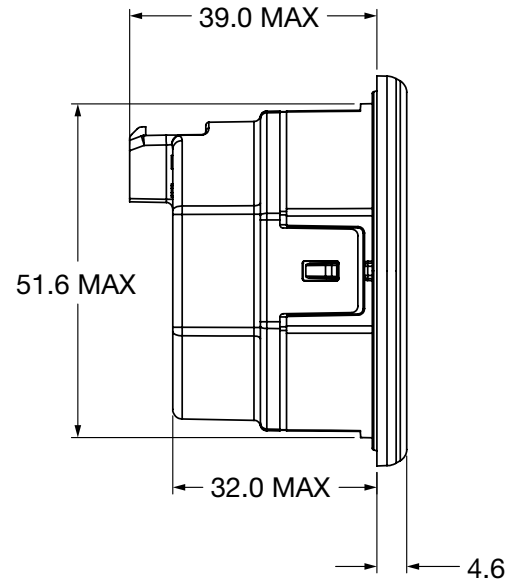
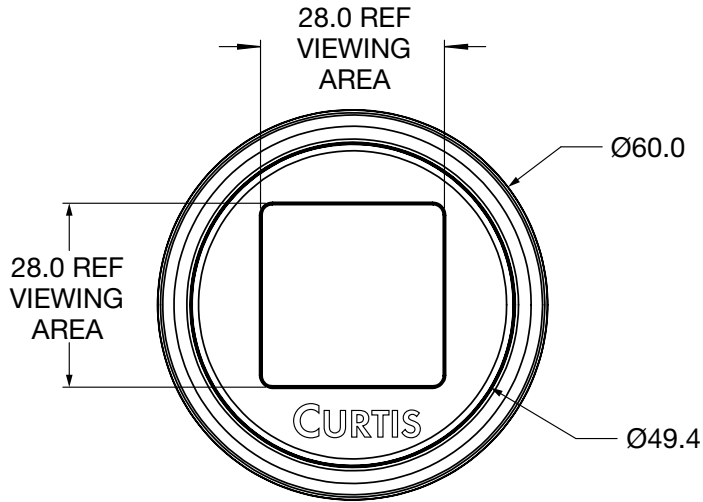
Item	Part Description	Tyco P/N
1	Connector Housing	794821-1
2	Terminal (18 – 22 AWG)	770904-X
3	Interface Seal	794772-8
4	Single Wire Seal or Gang Seal	794758-1 or 1586359-8
5	Cavity Plug Seal (for unused terminal positions)	794995-1





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### DIMENSIONS mm



DETAIL "A"  
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

