

# SMARTRAIL DATASHEET

## HE599MIX116 0 - 10V, 4 - 20mA Analog Input/Output Module - 12 Bit Resolution

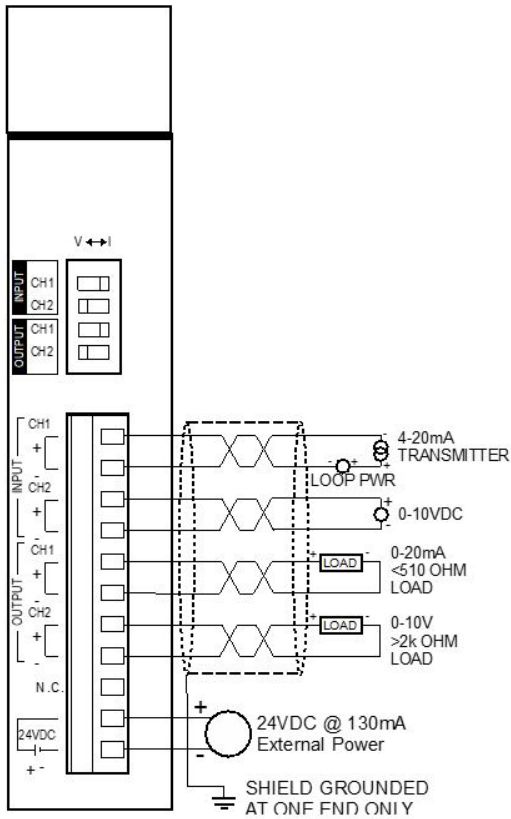
### 1 TECHNICAL SPECIFICATIONS

SPECIFICATIONS			
GENERAL SPECIFICATIONS		INPUTS	
Backplane Power Consumed	50mA @ 5V	Number of Channels	2
External Power Required	62mA @ 24V (+/- 10%) CLASS 2 POWER SUPPLY ONLY	Input Ranges	4-20mA, 0-20mA, 0-5V, 0-10V
Isolation	Photocoupler (Input/Power)	Absolute Max. Inputs	+/-15V, +/-25mA
Terminal Type	M2 Screw Type, Removable 11-posn	Resolution	12-Bit (4µA, 5µA, 1.25mV, 2.5mV)
Optional Spring Clamp Terminal Strip	HE599TRM011, 11-posn	Input Impedance	1MΩ (voltage), 250Ω (current)
Terminal Torque Rating	0.22 to 0.25N-m 1.95 to 2.21 in-lbs	Accuracy	< +/- 0.5%
Accepted Wire Size	16-28AWG (use copper conductors, solid or stranded)	Conversion Time	1ms/ch
Wire Stripping Length	7mm	OUTPUTS	
Storage Temperature	-25° to 70°C	Number of Channels	2
Operating Temperature	0° to 55°C	Output Ranges	0-10V, 4-20mA, 0-20mA
Relative Humidity	5 to 95% Non-condensing	Absolute Max. Outputs	+/-15V, +/-25mA
Dimensions W x H x D	20mm x 90mm x 60mm 0.79" x 3.54" x 2.36"	Resolution	12-Bit (2.5mV, 4µA, 5µA)
Weight	73g (2.6 oz.)	Maximum Load	>2kΩ (voltage), <510Ω (current)
Certifications (CE)		Accuracy	< +/- 0.5%
USA: <a href="https://hornerautomation.com/certifications/">https://hornerautomation.com/certifications/</a> Europe: <a href="http://www.hornerautomation.eu">www.hornerautomation.eu</a>		Conversion Time	1ms/ch

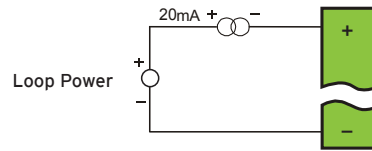
### 2 DIAGNOSTIC LED INDICATORS

MIX116 LED Status Indication		
LED 1	LED 2	Meaning (same for both LEDs)
IN OK	OUT OK	ON = Normal Operation
		FLASH = I/O Error
		OFF = No Power or I/O Error

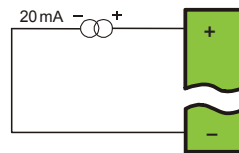
### 3 WIRING - I/O



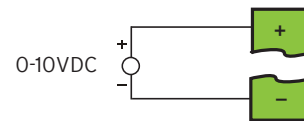
20mA Analog In - Not Self Powered



20mA Analog In - Self Powered



0-10VDC IN



Terminal Block Tightening Torque: 2.0 in-lb (0.22 N-m)

Wire range for terminal blocks: 16-28 AWG copper conductors, solid or stranded

### 4 CSCAPE CONFIGURATION

The SmartRail MIX116 features a dip switch on the front of the unit for selecting voltage (0-10V) or current (4-20mA or 0-20mA) on a per channel basis. In addition to the physical dip switch, Cscape (9.1 or later) must be used for software configuration as well. The following parameters are configurable in Cscape for the MIX116:

Cscape Configuration Data - Selectable per Channel	
Parameter	Selections
Input/Output Range	4-20mA
	0-20mA
	0-5V
	0-10V
Hold Last State (Outputs)	Hold Last State
	Go to Minimum
	Go to Mid-Range
	Go to Maximum

## 5 SAFETY

This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or Non-hazardous locations only.

**WARNING - EXPLOSION HAZARD** - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous  
**AVERTISSEMENT - RISQUE D'EXPLOSION** -Ne débranchez pas l'équipement tant que l'alimentation n'a pas été coupée ou que la zone n'est pas dangereuse.

**WARNING - EXPLOSION HAZARD** - Substitution of any component may impair suitability for Class I, Division 2  
**AVERTISSEMENT - RISQUE D'EXPLOSION** -Le remplacement de tout composant peut nuire à la compatibilité avec la classe I, division 2

**WARNING - POSSIBLE EQUIPMENT DAMAGE** - Remove power from the I/O Base and any peripheral equipment connected to this local system before adding or replacing this or any module.

**AVERTISSEMENT - DOMMAGES POSSIBLES À L'ÉQUIPEMENT** - Coupez l'alimentation de la base d'E / S et de tout équipement périphérique connecté à ce système local avant d'ajouter ou de remplacer ce module ou tout autre module.

- a. All applicable codes and standards should be followed in the installation of this product.
- b. Shielded, twisted-pair wiring should be used for best performance.
- c. Shields should be grounded at one end only, preferably at the end providing the best noise shunting.
- d. Use the following wire type or equivalent: Belden 8441.

For detailed installation and a handy checklist that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using.

## 6 PART NUMBER

The global part number is **HE559MIX116**.

## 7 TECHNICAL SUPPORT

For assistance and datasheet updates, contact Technical Support at the following locations:

**North America**  
+1 (317) 916-4274  
www.hornerautomation.com  
techspt@heapg.com

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+353 (21) 4321-266  
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