

# SMARTRAIL DATASHEET

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

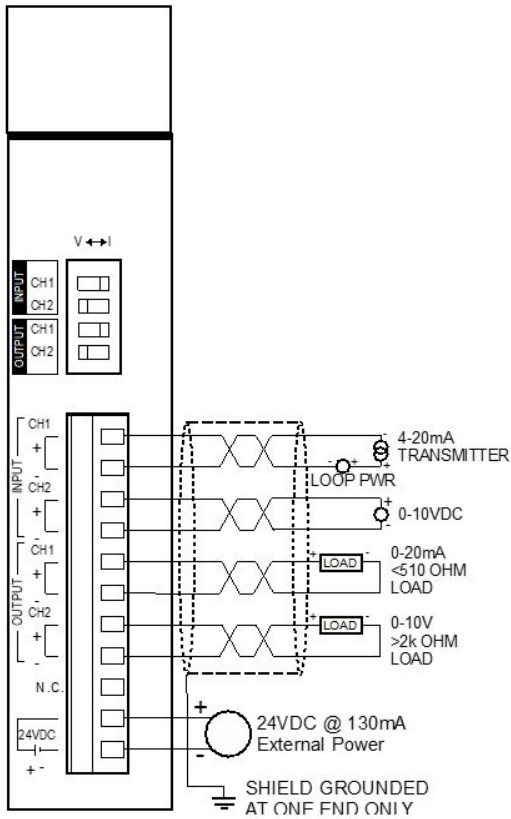
### 1 TECHNICAL SPECIFICATIONS

| SPECIFICATIONS   |  |                       |                                  |
|--|--|-----------------------|----------------------------------|
| GENERAL SPECIFICATIONS   |  | INPUTS                |                                  |
| Backplane Power Consumed   | 50mA @ 5V  | Number of Channels    | 2                                |
| External Power Required  | 62mA @ 24V (+/- 10%)<br>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<br>1.95 to 2.21 in-lbs                 | Accuracy              | < +/- 0.5%                       |
| Accepted Wire Size   | 16-28AWG (use copper conductors,<br>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<br>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><br>Europe: <a href="http://www.hornerautomation.eu">www.hornerautomation.eu</a> |  | Conversion Time       | 1ms/ch                           |

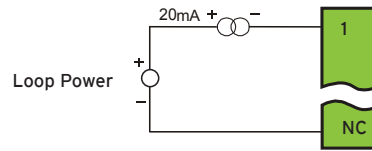
### 2 DIAGNOSTIC LED INDICATORS

| 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  |

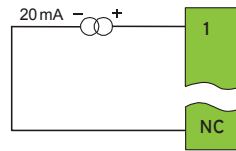
### 3 WIRING - I/O



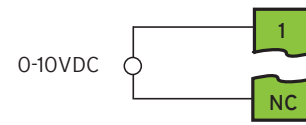
20mA Analog In - Not Self Powered



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](http://www.hornerautomation.com)  
[techspt@heapg.com](mailto:techspt@heapg.com)

**Europe**  
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