

## Characteristics:

### General description:

The Termination Board (TB) model PBCO-D8-014 is designed to connect the D1000 Series Intrinsically Safe isolation and protection modules, directly to the Tricon TMR9 I/O cards type 3805E without the standard Field Termination Assembly normally needed to interface the backplane.

The TB consists of D1000 Series modules mounted on backplane which carry Safe Area signals and supply. The range of modules includes different types to handle the majority of applications.

The TB PBCO-D8-014 connector is pin to pin compatible with the standard system cable, thus avoiding the need of special cable or external wiring.

The 3805E is a 8 channels, 4-20 mA analog output board.

The Intrinsic Safety protection and signal isolation is made through the D1000 Series Associated Apparatus. The modules type accepted are:

Analog Output D1020S to interface 3805E.

The TB can accept 8 input channels AO, and can only be used for 1 channel modules.

The connections to/from the Hazardous Areas are made at the module terminal blocks, thus avoiding the TB Intrinsic Safety certifications, resulting in a quick design and cost effective solution.

The 24 Vdc power supply for the TB is connected to a two dual plug-in terminal blocks, this resulting in a redundant power supply and daisy chain connection also when terminal block is not inserted in the corresponding mating connector.

The power supply is then bussed to the isolator modules by the TB.

## Technical Data:

### Supply:

24 Vdc nom (20 to 30 Vdc) reverse polarity protected, redundant terminal blocks, OR diodes to select higher supply source.

**Connection:** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup>.

**Protection fuse:** 2 A time lag (spare fuse provided on Termination Board).

### Fault detection:

**Supply voltage fault detection:** ≤ 18 Vdc.

**Fault signalling:** voltage free NE SPDT relay contact (de-energized in fault condition).

**Contact material:** AgCdO.

**Contact rating:** 2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W (resistive load).

**Mechanical / Electrical life:** 30 \* 10<sup>6</sup> / 1 \* 10<sup>5</sup> operation, typical.

**Connection:** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup>.

### TMR9 I/O card interface:

**Connection:** ELCO 56 poles receptacle connector (requires male mating connector).

### Environmental conditions:

**Operating:** temperature limits -20 to + 60 °C,  
relative humidity max 90 % non condensing, up to 35 °C.

**Storage:** temperature limits - 45 to + 80 °C.

### Mounting:

surface mounting by four assembly slot for M6 screw.

**Shield rail connection:** five holes M5x10 to connect cable screen.

**Earth connection:** M4x10 screw to connect TB to earth rail.

**LED indication:** green for power on, red for fault detection.

**Weight:** about 914 g (excluding modules).

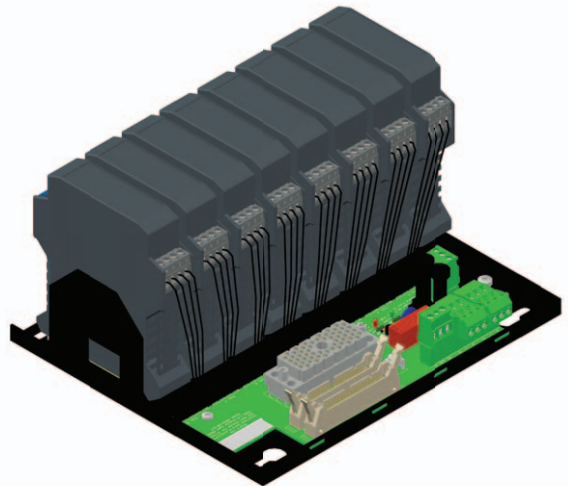
**Location:** Safe Area/Non Hazardous Locations.

**Dimensions:** Width 224 mm, Depth 190 mm, Height 122 mm.

## Features:

- I/O card type 3805E 8 channels analog output board interface.
- 8 positions Termination Board for up to 8 channels.
- Lower cables, installation and maintenance costs.
- One terminal block per input, no external terminal blocks required.
- Rugged carbon steel painted board support for easy installation.
- Shield Rail included.
- Power Supply Fault monitoring.
- Spare Fuse provided.
- Tagging provided on top side.

## Image:



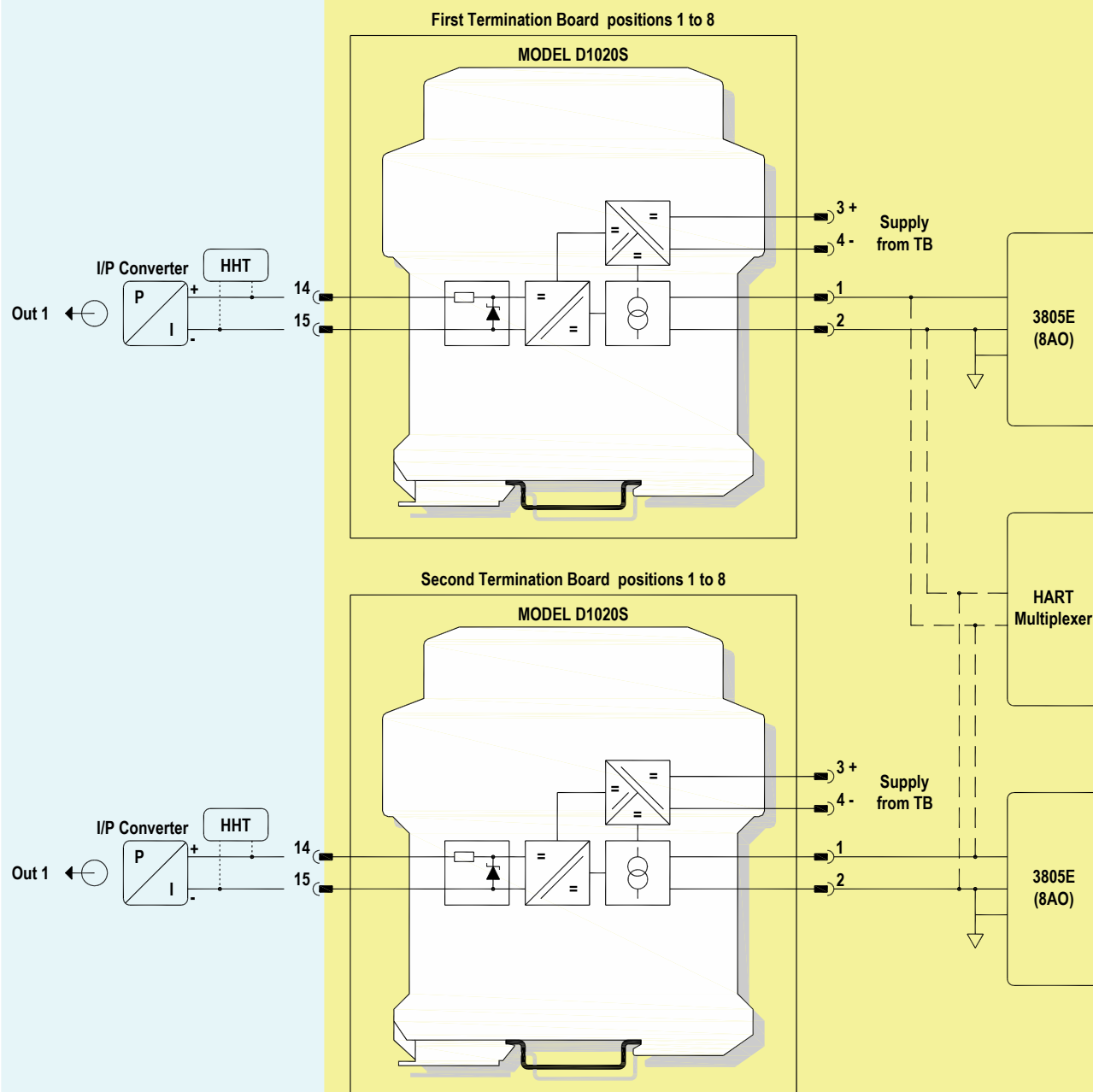
## Ordering Information:

Model: PBCO-D8-014

# Loop Diagram for 3805E (8AO) Interface Card:

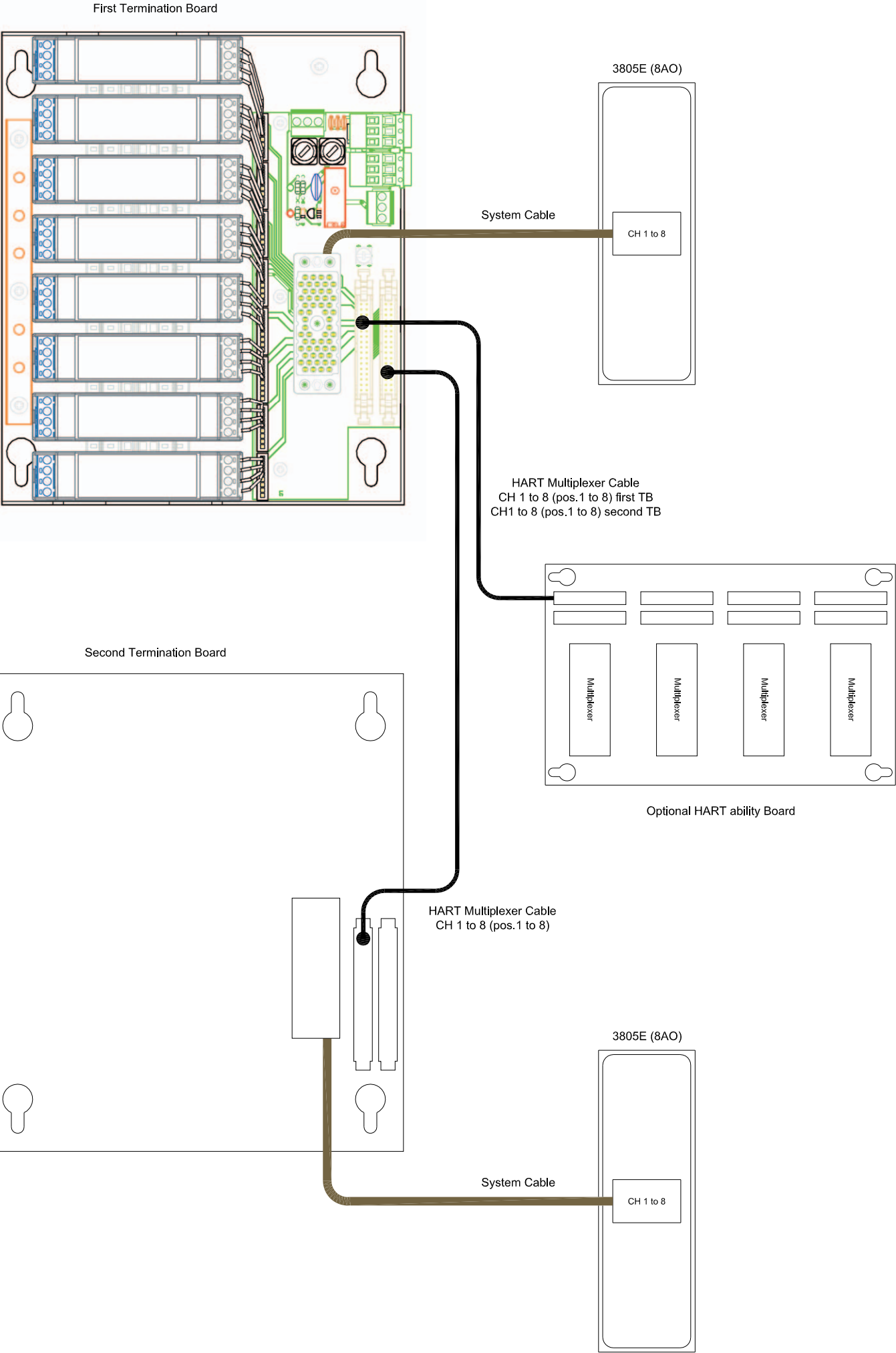
HAZARDOUS AREA

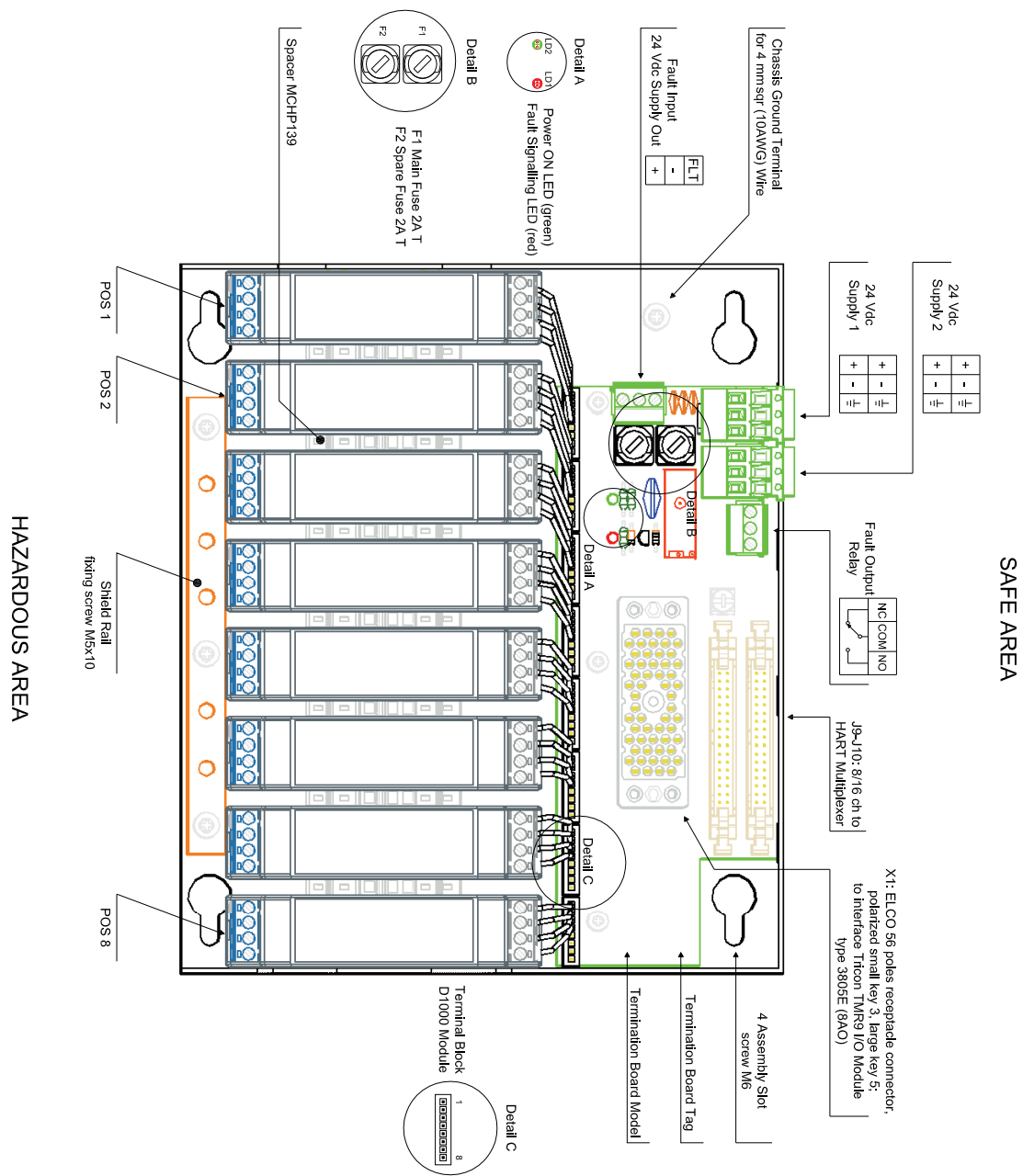
SAFE AREA



Module type:  
Positions 1 to 8 are for 1 channel analog input models:  
D1020S

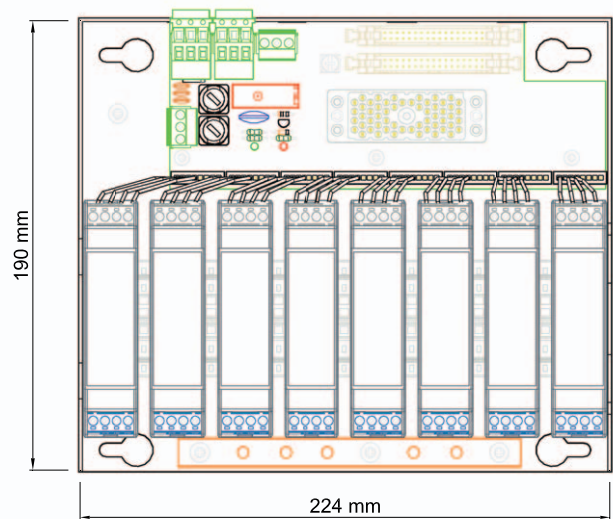
Termination Board Connection Diagram for 3805E (8AO) Interface Card:



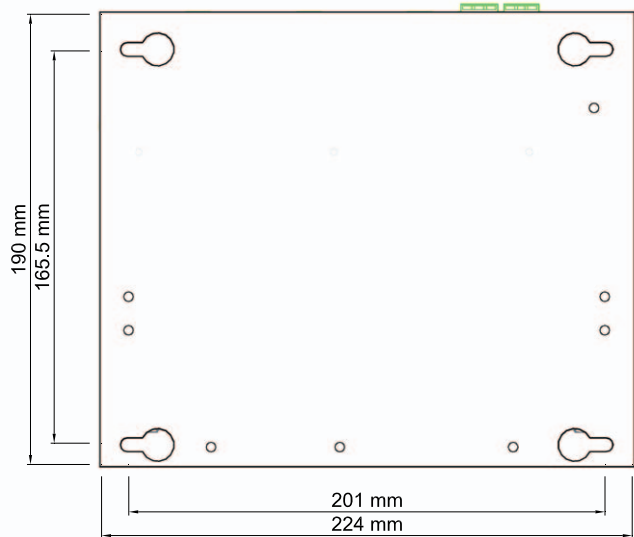


Dimensions:

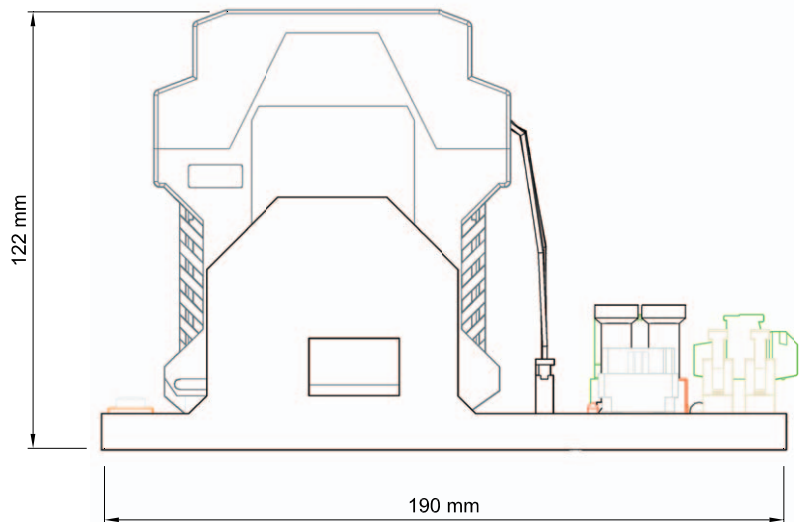
Top-view



Bottom-view



Side-view



**Connections table to 3805E (8AO) Interface Card:**

| FIELD<br>DEVICE                                                                   | MODULE<br>TYPE | MODULE<br>TERMINAL<br>BLOCK |      | TERMINATION<br>BOARD<br>CONNECTOR<br>PIN NUMBER | MODULE<br>FUNCTION | MODULE<br>POSITION | INTERFACE<br>CARD<br>CHANNEL<br>NUMBER | INTERFACE<br>CARD<br>CONNECTOR<br>PIN NAME | INTERFACE<br>CARD<br>REDUNDANT<br>CONNECTOR<br>PIN NAME | NOTE |
|-----------------------------------------------------------------------------------|----------------|-----------------------------|------|-------------------------------------------------|--------------------|--------------------|----------------------------------------|--------------------------------------------|---------------------------------------------------------|------|
|  | D1020S         | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 1                  | 1                                      | AA                                         |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | LL                                         |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 2                  | 2                                      | z                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | EE                                         |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 3                  | 3                                      | p                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | v                                          |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 4                  | 4                                      | h                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | l                                          |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 5                  | 5                                      | e                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | b                                          |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 6                  | 6                                      | W                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | S                                          |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 7                  | 7                                      | L                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | F                                          |                                                         |      |
|                                                                                   |                | 1                           | Ch1+ | 1                                               | 4-20 mA IN         | 8                  | 8                                      | M                                          |                                                         |      |
|                                                                                   |                | 2                           | Ch1- | 2                                               |                    |                    |                                        | B                                          |                                                         |      |

- Interface Card Connector X1: ELCO 56 poles receptacle
- Shield terminal block provided on pin number 1
- Hart ability when used with D1020S modules