Contact Expansion Module

General Information

The optional CEM-2020 is a remote auxiliary device that provides additional DECS-250 contact inputs and outputs. Two types of modules are available. A standard module (CEM-2020) provides 24 contact outputs and a high current module (CEM-2020H) provides 18 contact outputs.

Features

CEM-2020s have the following features:

- 10 Contact Inputs
- 18 Contact Outputs (CEM-2020H) or 24 Contact Outputs (CEM-2020)
- Functionality of Inputs and Outputs assigned by BESTlogic™*Plus* programmable logic
- Communications via CAN bus

Specifications

Operating Power

Nominal .....12 or 24 Vdc
Range.....8 to 32 Vdc (Withstands ride-through down to 6 Vdc for 500 ms.)

Maximum Consumption

CEM-2020.....14 W
CEM-2020H .....8 W

Contact Inputs

The CEM-2020 contains 10 programmable inputs that accept normally open and normally closed, dry contacts.

Contact Outputs

Ratings

CEM-2020

Outputs 12 through 23 ..1 Adc at 30 Vdc, Form C, gold contacts
Outputs 24 through 35 ..4 Adc at 30 Vdc, Form C

CEM-2020H

Outputs 12 through 23 ..2 Adc at 30 Vdc, Form C, gold contacts
Outputs 24 through 29 ..10 Adc at 30 Vdc, Form C

Communication Interface

The CEM-2020 communicates with the DECS-250 through CAN1.

CAN bus

Differential Bus Voltage.....1.5 to 3 Vdc
Maximum Voltage .....–32 to +32 Vdc with respect to negative battery terminal
Communication Rate.....125 or 250 kb/s

Type Tests

Shock

Withstands 15 G in 3 perpendicular planes.

Vibration

Swept over the following ranges for 12 sweeps in each of three mutually perpendicular planes with each 15-minute sweep consisting of the following:

5 to 29 to 5 Hz.....1.5 G peak for 5 min.
29 to 52 to 29 Hz.....0.036” Double Amplitude for 2.5 min.
52 to 500 to 52 Hz.....5 G peak for 7.5 min.

HALT (Highly Accelerated Life Testing)

HALT is used by Basler Electric to prove that our products will provide the user with many years of reliable service. HALT subjects the device to extremes in temperature, shock, and vibration to simulate years of operation, but in a much shorter period span. HALT allows Basler Electric to evaluate all possible design elements that will add to the life of this device. As an example of some of the extreme testing conditions, the CEM-2020 was subjected to temperature tests (tested over a temperature range of –80°C to +130°C), vibration tests (of 5 to 50 G at +25°C), and temperature/vibration tests (tested at 10 to 20 G over a temperature range of –60°C to +100°C). Combined temperature and vibration testing at these extremes proves that the CEM-2020 is expected to provide long-term operation in a rugged environment. Note that the vibration and temperature extremes listed in this paragraph are specific to HALT and do not reflect recommended operation levels. These operational ratings are included in the *Specifications* section of this manual.

Environment

Temperature
- Operating.....–40 to +70°C (–40 to +158°F)
- Storage.....–40 to +85°C (–40 to +185°F)

Humidity.....IEC 68-2-38

UL Approval (CEM-2020 and CEM-2020H)

This product is recognized to applicable Canadian and US safety standards and requirements by UL.

Standards used for evaluation:

- UL6200

CSA Certification

This product was tested and has met the certification requirements for electrical, plumbing, and/or mechanical products.

Standards used for evaluation:

- CSA C22.2 No. 0
- CSA C22.2 No. 14

CE Compliance

This product has been evaluated and complies with the relevant essential requirements set forth by the EU legislation.

EC Directives:

- LVD 2014/35/EU
- EMC 2004/108/EC

Harmonized standards used for evaluation:

- EN 50178
- EN 61000-6-4
- EN 61000-6-2

Physical

Weight

CEM-2020.....2.25 lb (1.02 kg)

CEM-2020H.....1.90 lb (0.86 kg)

Dimensions.....See *Installation* later in this section.

Installation

Contact Expansion Modules are delivered in sturdy cartons to prevent shipping damage. Upon receipt of a module, check the part number against the requisition and packing list for agreement. Inspect for damage, and if there is evidence of such, immediately file a claim with the carrier and notify the Basler Electric regional sales office, your sales representative, or a sales representative at Basler Electric, Highland, Illinois USA.

If the device is not installed immediately, store it in the original shipping package in a moisture- and dust-free environment.

Mounting

Contact Expansion Modules are contained in a potted plastic case and may be mounted in any convenient position. The construction of a Contact Expansion Module is durable enough to mount directly on a genset using ¼-inch hardware. Hardware selection should be based on any expected shipping/transportation and operating conditions. The torque applied to the mounting hardware should not exceed 65 in-lb (7.34 N•m).

See Figure 184 for CEM-2020 overall dimensions. All dimensions are shown in inches with millimeters in parenthesis.

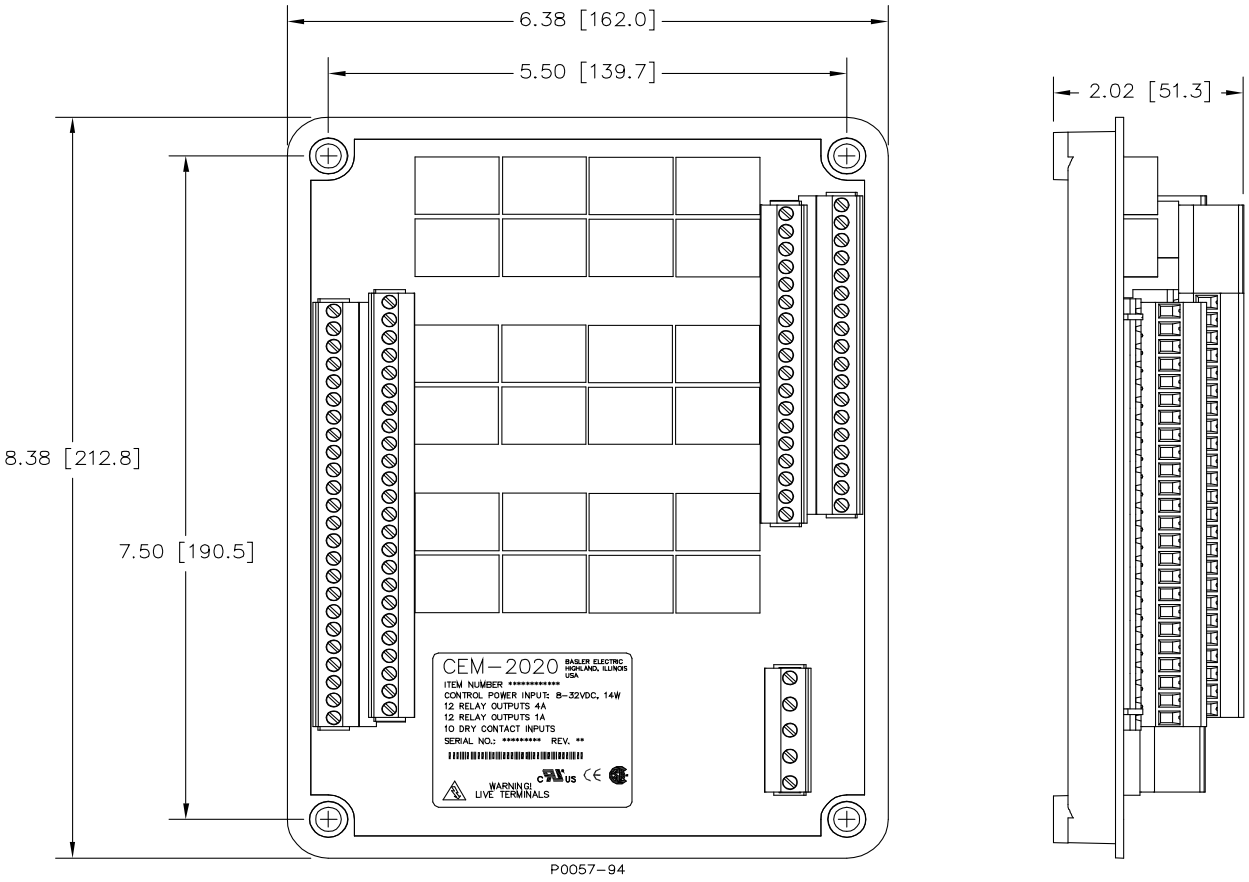

Figure 184. CEM-2020 Overall Dimensions

See Figure 185 for CEM-2020H overall dimensions. All dimensions are shown in inches with millimeters in parenthesis.