

TAA10 SPECIFICATIONS

The TAA10 Main module provides 8 input channels for 120 V ac voltage monitoring and 8 output channels for 120 V ac output switching with current overload protection. It is capable of supporting a single expansion module to support additional features. Typically, the TAA10 is used with the TAA15 Expansion module, which also shares its functionality. TAA15 is discussed in “TAA15 SPECIFICATIONS” on page 33. The TAA10 may be used with the Expansion modules listed in Table 1 as well.

The TAA10 performs the signal conversion required to interface these digital (i.e., on/off state) electrical input/output signals from/to the field sensors/actuators to/from the redundant Fieldbus.

The TAA10's associated FBM238 or FBM239 executes either the Digital I/O or Ladder Logic application program. The configurable options for each program are Input Filter Time, Fail Safe Configuration, Fail Safe Fallback and Sustained or Momentary Outputs. If the Momentary Output configuration is selected, then Pulse Output Interval is also configurable. Configurable options for inputs are exercised on a per module basis; those for outputs are exercised on a per channel basis.

Automatic Restart from Overload

If an overload is sensed (either inrush or steady state current exceeded), the TAA circuitry will open for 64.5 line cycles and then retry again. This operation will continue indefinitely for outputs only. Overloads exceeding 50 A will cause damage to the modules.

Specifications for the TAA10 and TAA15 are provided below.

FUNCTIONAL SPECIFICATIONS

Common Characteristics

ISOLATION

The module will withstand, without damage, a potential of 1250 V ac applied for one minute between any channel and earth (ground), or between a given channel and any other channel.

CAUTION

This does not imply that these channels are intended for permanent connection to voltages of this level. Connection of these channels to voltages higher than those stated in the “Voltage Monitor” and “Output Switch” sections of this module's specification will violate electrical safety code requirements and may expose users to electric shock.

POWER REQUIREMENTS

Input Voltage Range (Redundant)

24 V dc +5%, -10%

Consumption

11 W (maximum)

HEAT DISSIPATION

25 W (maximum)

INDICATORS (MOUNTED ON TERMINATION CABLE ASSEMBLY)

Operational Status

One green light-emitting diode (LED)

Input Channel Status

8 LED's on TCA (1 per channel)

Output Channel Status

8 LED's on TCA (1 per channel)

FUNCTIONAL SPECIFICATIONS (CONTINUED)

Common Characteristics (Cont.)

FIELD TERMINATION CONNECTIONS⁽¹⁷⁾

Discrete Wire Blocks

32 screw-clamp terminals (2 blocks using 16 terminals per block)

Plug Connector Block

34-pin connector. Mates with:

- Burndy MSD 34 PM 118
(plug with bar-type cable clamp)
- Burndy MSD 34 PM 124
(plug with clam shell hood)
- Burndy MSD 34 PM 824
(plug with suitcase hood)
- or equivalent

Direct Connection Block

32 screw-clamp terminals

COMMUNICATION

Via the redundant Fieldbus

Voltage Monitor (Input Channels)

CAPACITY

8 independent channels

INPUT

ON-State Voltage⁽¹⁸⁾

79 to 132 V ac

OFF-State Voltage⁽¹⁸⁾

0 to 20 V ac

Current

2.2 mA (typical) at 20 to 132 V ac

SOURCE RESISTANCE LIMITS

ON-State

1 k Ω (maximum) at 79 V ac

OFF-State

100 k Ω (minimum) at 132 V ac

FILTER TIME

Configurable (4, 8, 16, or 32 ms)

Output Switch (Output Channels)

CAPACITY

8 independent channels

VOLTAGE RANGE

79 to 132 V ac

NOMINAL VOLTAGE

120 V ac, 50/60 Hz

CURRENT

2 A (maximum) per channel; 12 A (maximum) per module

OFF-STATE LEAKAGE

3 mA (maximum)

INRUSH CURRENT

Overload sensing provided

24 A peak 10 ms (1/2 cycle)

12 A rms 20 ms (1 cycle)

3.5 A rms for 1 s

Short circuits that result in greater than 50 A peak current will result in damage to the module. If a 50 A current is possible, external fusing is recommended.⁽¹⁹⁾

HOLDING CURRENT

No min required

ON STATE VOLTAGE DROP

0.4 V @ 1 A

AUTOMATIC RESTART FROM OVERLOAD

Approximately 1 second after overload sensed.

(17)The discrete wire or plug connector block is available on termination cable assemblies for all enclosures excluding Local Enclosures, Field Enclosure 4 and Multiple (Bridged) Industrial Enclosure 32. The direct connection block is available only on the termination cable assembly for Local Enclosures and Field Enclosure 4. Multiple (Bridged) Industrial Enclosure 32 uses the plug connector block only.

(18)OFF-ON and ON-OFF transitions occur between 20 and 79 V ac.

(19)Fuse rating must be appropriate for the inrush current characteristics of this TAA.

ENVIRONMENTAL SPECIFICATIONS⁽²⁰⁾

Operating

TEMPERATURE

0 to 60°C (32 to 140°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

-300 to +3,000 m (-1,000 to +10,000 ft)

Storage

TEMPERATURE

-40 to +70°C (-40 to +158°F)

RELATIVE HUMIDITY

5 to 95% (Noncondensing)

ALTITUDE

-300 to +12,000 m (-1,000 to +40,000 ft)

Contamination

Class G3 (Harsh) as defined in ISA Standard S71.04

PHYSICAL SPECIFICATIONS

Mounting

Installable in the 100 Series conversion mounting structures listed in *100 Series Conversion Mounting Structures* (PSS 31H-2W8).

Weight

1 kg (2.2 lb)

Part Number (TAA10)

P0923RK

⁽²⁰⁾The environmental ranges can be extended by the type of enclosure containing the module. [Refer to the Product Specification Sheet (PSS) applicable to the enclosure that is to be used.]

TAA11 SPECIFICATIONS

The TAA11 Main module provides eight input channels for 240 V ac voltage monitoring and eight output channels for 240 V ac output switching with current overload protection (same as FBM11). It is capable of supporting a single expansion module to support additional features. Typically, the TAA11 is used with the TAA16 Expansion module, which also has the same functionality as the TAA11. The TAA16 is discussed in “TAA16 SPECIFICATIONS” on page 34. The TAA11 may be used with the Expansion modules listed in Table 1 as well.

The TAA11 performs the signal conversion required to interface these digital (i.e., on/off state) electrical input/output signals from/to the field sensors/actuators to/from the redundant Fieldbus, including signal conditioning and channel isolation. It independently connects to the Fieldbus.

When the TAA11 is used alone or in conjunction with any expansion module, its associated FBM238 or FBM239 executes either the Digital I/O or Ladder Logic application program. The configurable options for each program are Input Filter Time, Fail-safe Configuration, Fail-safe Fallback and Sustained or Momentary Outputs. If the Momentary Output configuration is selected, then Pulse Output Interval is also configurable. Configurable options for inputs are exercised on a per module basis; those for outputs are exercised on a per channel basis.

Automatic Restart from Overload

If an overload is sensed (either inrush or steady state current exceeded), the TAA circuitry opens for 64.5 line cycles and then retries again. This operation continues indefinitely for outputs only. Overloads exceeding 25 A causes damage to the module.

Specifications for the TAA11 and TAA16 are provided below.

FUNCTIONAL SPECIFICATIONS

Common Characteristics

ISOLATION⁽²¹⁾

The module can withstand, without damage, a potential of 1250 V ac applied for one minute between any channel and earth (ground), or 600 V ac between a given channel and any other channel.

NOTE

This does not imply that these channels are intended for permanent connection to voltages of these levels. Connection of channels to voltages in excess of those specified under the “Input Functions” and “Output Functions” sections of this specification violates electrical safety code requirements and may expose users to

electric shock.

POWER REQUIREMENTS

Input Voltage Range (redundant)

24 V dc +5%, -10%

Consumption

Main Module Only

7 W (maximum)

Main Module plus Expansion Module

11 W (maximum)

HEAT DISSIPATION

Main Module Only

12 W (maximum)

Main Module plus Expansion Module

20 W (maximum)

(21)To meet CSA Ordinary Location personnel safety standards, the channel-to-channel voltage must not exceed 300 V rms. This means that the I/O channels must be wired to the same branch voltage.