DATA SHEET

RDI02

ABB Ability™ Symphony® Plus Hardware Selector

The RDI02 Redundant high voltage Digital Input module processes up to 16 Digital Input signals. Each channel is individually CH-2-CH isolated and is independently configurable for either 125 VDC or 120 VAC inputs. FC 221 (I/O Device Definition) sets DI module operating parameters and each input channel is configured using FC 224 (Digital Input CH) to set individual input channel parameters such as alarm state, debounce period, SOE settings, etc.

The RDI02 module supports Sequence of Events (SOE) time-stamping to a resolution of 10 msec for 125 VDC inputs and 20 msec for 120 VAC inputs. The SOE event data buffer size is configurable to include up to 50 events.

Features and benefits

- 16 individually CH-2-CH isolated DI channels supporting:
- 125 VDC or 120 VAC DI signals
- Configurable contact debounce time up to 255 msec
- 10 msec (125 VDC) or 20 msec (120VAC)resolution SOE time-tamping performed by RDI02 module
- Configurable SOE event data buffer size
- RDI02 module can sink or source I/O current
- Input Status LEDs on module front plate
- Galvanic isolation of 1500 V for up to 1 minute

General info	
Article number	2VAA008430R1
Type	Redundant Digital Input
Life cycle status	ACTIVE
Number of channels	16
Signal type	DI
HART	No
SOE	Yes
Redundancy	Yes
Form factor	Standard (190 mm)
Mounting	Horizontal Row or Vertical Column
MTBF (per MIL-HDBK-217-FN2)	PR C: 266,749 Hours
MTTR (Hours)	1 Hours

Detailed data	
Module power requirements	24 VDC ± 10%, 66 mA typical, 85 mA max
Module power connection	POWER TB on cHBX01L or VBX01T
Field IO power	3.0 mA typical 3.3 mA max @ 125 VDC ± 10% 4.5 mA typical, 5.0 mA max @ 120 VAC ± 10%
Digital Input Turn ON / OFF voltage	125VDC: 98.0V (ON) 91.3V (OFF) 120VAC: 75.5Vrms (ON) 69.7Vrms (OFF)
Overvoltage category	Category I for power, inputs or outputs. Tested according to EN 61010-1
Max field cable length	600 meters (1968 feet)
Number of Channels	16 Digital Input Channels
Signal ranges and types	Digital Inputs: 125 VDC or 120 VAC with SOE support
SOE timestamp accuracy	10 msec resolution for 125 VDC, 20 msec for 120 VAC
Field signal to Logic isolation	Galvanically isolated, 1500 V up to 1 minute
Channel isolation	Individual CH-2-CH isolated, 1500 V up to 1 minute

Diagnostics	
Front plate LED's	STATUS LEDs: R (Run), F (Fault), P/B(Pri/Bup) + 1 thru 16
Local availability	Mini USB connection on module front plate
Remote availability	HN800 device diagnostics via SPE

Environment and certification	
Temperature, Operating	-40 to +70 °C Tested according to IEC/EN 60068-2-1, IEC/EN 60068-2-2
Temperature, Storage	-40 to +85 °C Tested according to MIL-STD-810G
Relative humidity	20% to 95% @ 40°C non-condensing. Tested according to IEC/EN 60068-2-78, IEC/EN 61298-3
Vibration (operational sinusoidal)	5 to 60 Hz 0.137 mm (0.0054 in.), 60 to 150 Hz 1.0 G. Tested according to IEC/EN 60068-2-6
Vibration (transportation)	10 to 500 Hz. Tested according to MIL-STD-810G
Shock (storage)	15 G, 11 msec. Tested according to IEC/EN 60068-2-27
Drop	100 mm. Tested according to IEC/EN 60068-2-31
Protection class	IP20 according to EN 60529, IEC 529
Altitude (operational)	Sea level to 3,048 meters (10,000 ft.) Tested according to MIL-STD-810G
Altitude (storage)	Sea level to 12,192 meters (40,000 ft.) Tested according to MIL-STD-810G
Air quality	ISA S71.04 G1, ISA S71.04 G3 compliant versions SPCxxxA are also available
ESD immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-2, Severity level 3
Surge immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-5, Severity level 3
Electrical fast transient immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-4, Severity level 3
Radiated RFI immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-3, Severity level 3
Conducted Immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-6, Severity level 3
Magnetic field immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-8, Severity level 4
Radiated emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipmentording to IEC/EN 61000-6-2, IEC/EN 61000-4-6, Severity level 3
Conducted emission	Tested according to IEC/EN 61000-6-4, CISPR 11 + A1, CISPR 16-1-1, Group 1, Class A, ISM equipment
Voltage dips and interruption immunity	Tested according to IEC/EN 61000-6-2, IEC/EN 61000-4-11
CSA non-hazardous locations	Certified for use as process control equipment in an ordinary (non-hazardous) location
CSA hazardous, nonincendive locations	Class I, Division 2, Groups A, B, C, D
CE Mark	CE Mark EMC directive 2004/108/EC & Low Voltage Directive 2006/95/EC
RoHS compliance	RoHS Directive 2015/863
WEEE compliance	DIRECTIVE/2012/19/EU

Compatibility	
Use with MTU	HBR01-EPD, HBR01-FPH, HBR01-FPN, VBR01-EPD, VBR01-FPH, VBR01-FPN
Module keying code for base	slot #1 = 06, slot #2 = 12

Dimensions	
Width	27 mm
Depth	106 mm
Height	190 mm
Weight	230 g

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