DATA SHEET

DI06ev

ABB Ability™ Symphony® Plus Hardware Selector

The DI06ev Universal Digital Input module processes up to 16, CH-2-CH isolated, universal digital input field signals. Each channel is independently configurable for 24 / 48 / 110 / 125 VDC or 100 / 120 VAC input signal voltages.

The DI06ev Universal Digital Input module is a Form/Fit/Function replacement for DSI13, DSI14, DSI22, SED01, and SET01 Digital Input and SOE HR I/O modules.

FC 221 (I/O Device Definition) sets DI module operating parameters, and each input channel is configured using FC 223 (Digital Input CH) to set individual input channel parameters such as alarm condition, debounce period, and SOE (Sequence of Events) parameters, etc.

Each input channel can be configured to timestamp state changes as an SOE event. The timestamp resolution depends on the input voltage level and type (i.e., AC vs DC). Timestamp resolution ranges from 1 msec for 24 / 48 VDC to 20 msec for 100 / 120 VDC.

The SOE event data buffer size is configurable to include up to 50 events.

Features and benefits

- Sixteen (16) individually CH-2-CH isolated Digital Input channels supporting:
- 24 / 48 / 110 / 125 VDC or 100 / 120 VAC DI signals
- Configurable contact debounce time up to 255 msec
- SOE time-tamping performed by DI06e module
- Configurable SOE event data buffer size
- DI06e module can sink or source I/O current
- Input Status LEDs on module frontplate
- Galvanic isolation of 1500 V for up to 1 minute
- DI06e supports optional module redundancy seconds

General info	
Article number	7PAA004004R11
Type	Universal Digital Input
Signal specification	24/48/110/125 VDC, 100/120 VAC
Life cycle status	ACTIVE
Number of channels	16
Signal type	Universal DI
HART	No
SOE	Yes
Redundancy	No
Form factor	HR MMU
Mounting	MMU (1-Slot)
MTBF (per MIL-HDBK-217-FN2)	PR: A = 181,071 Hours @ 30˚C, 149,154 Hours @ 40˚C, 77,381 Hours @ 70˚C
MTTR (Hours)	8 Hours

Detailed data	
Module power requirements	520 mA (typical) @ 5 VDC ± 10%, 135 mA (typical) @ 24 VDC ± 10%
Module power connection	+ 5V connection on MMU
Field IO power	Per Channel: 4.8 mA(typical) 7.0 mA(max) @ 24 VDC 4.6 mA(typical) 5.3 mA(max) @ 48 VDC 5.0 mA(typical) 6.7 mA(max) @ 110 VDC 4.5 mA(typical) 5.5 mA(max) @ 125 VDC 5.0 mA(typical) 6.0 mA(max) @ 100 VAC 5.0 mA(typical) 6.0 mA(max) @ 120 VAC
Digital Input Turn ON / OFF voltage	24VDC: 18 V (ON) 17 V (OFF) 48VDC: 20 V (ON) 18.5 V (OFF) 110VDC: 80 V (ON) 74 V (OFF) 125VDC: 80 V (ON) 74 V (OFF) 100VAC: 61 VAC (ON) 60 VAC (OFF) 120VAC: 64 VAC (ON) 63 VAC (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
SOE timestamp accuracy	1 msec for 24/48VDC DI, 15 msec for 110/125VDC DI, 20 msec for 100/120VAC
Channel isolation	Individual CH-2-CH isolated, 1500 V up to 1 minute

Diagnostics	
Front plate LED's	R (Run), F (Fault), P (Primary), and B (Backup) + 8 Diagnostic & Status LEDs
Local availability	S+ Menu from Module Front Plate
Remote availability	Using SPE

Environment and certification	
Temperature, Operating	LV inputs (24 or 48 VDC) -40 to +70 °C HV inputs (100 to 125 V AC or DC) -40 to +55 °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
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 G3 compliant
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 61000-6-2, 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	NTDI02, NIDI01
Module keying code for base	n/a

Dimensions	
Width	35.6 mm
Depth	177.8 mm
Height	298.5 mm
Weight	420 g

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