DATA SHEET

PI01e
ABB Ability™ Symphony® Plus Hardware Selector

The PI01e Pulse Input module processes up to eight (8) Pulse Input signals. Each channel is individually CH-2-CH isolated and is independently configurable for Totalize, Frequency, Period, or Duration mode pulse inputs. FC 221 (I/O Device Definition) sets PI module operating parameters, and each input channel is configured using FC 229 (Pulse Input CH) to set individual input channel parameters such as pulse input mode, engineering units, High/Low alarm state, etc.

The PI01e module supports pulse counts from 0 to 16,777,215, frequency input range from 0.5 Hz to 100 kHz, Period range from 10 µsec to 2 seconds, and a duration range from 5 µsec to 1 second.

Features and benefits

- Eight (8) individually CH-2-CH isolated Pulse Input channels supporting:
- Totalize: 0 to 16,777,215
- Frequency: 0.5 Hz to 100 kHz
- Period: 10 µsec to 2 seconds
- Duration: 5 µsec to 1 second
- In HN800 operating mode, PI01e supports optional module redundancy

General info	
Article number	7PAA001451R11
Type	Pulse Input
Signal specification	9-24 VDC
Life cycle status	ACTIVE
Number of channels	8
Signal type	PI
HART	No
SOE	No
Redundancy	Yes
Form factor	Compact (127 mm)
Mounting	EMB01S-PIO
MTBF (per MIL-HDBK-217-FN2)	PR: C = 252,114 Hours @ 30 ˚C 188,993 Hours @ 40 ˚C 87,738 Hours @ 70 ˚C
MTTR (Hours)	PI01e MTTR = 1 hour

Detailed data	
Module power requirements	67 mA (typical) @ 24 VDC ± 10%
Module power connection	POWER TB on EMC-_B0x, cHBX01L or VBX01T
Field IO power	1.3 mA typical, 1.5 mA max per CH @ 24 VDC ± 10%
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	8 Pulse Input Channels
A/D Conversion	±0 count
A/D Resolution	0.0001
A/D Update rate	0.0001
D/A Conversion	0.0001
Accuracy, FSR	Totalize: ±0 count Frequency: 0.01% Period: 0.01% Duration: 0.01%
Temp effect on accuracy	0.015% @ 25°C (timebase accuracy)
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	R (Run), F (Fault), P (Primary), and B (Backup) + 8 Diagnostic & Status LEDs
Local availability	R (Run), F (Fault), P (Primary), and B (Backup) + 8 Diagnostic & Status LEDs
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
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 versions
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	EMB01S-PIO, HBS01e-EPD, VBS01e-EPD
Module keying code for base	slot #1 = 12, slot #2 = 17

Dimensions	
Width	27 mm
Depth	127 mm
Height	127 mm
Weight	159 g

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