

DO01e

ABB Ability™ Symphony® Plus Hardware Selector



The DO01e transistor Digital Output module provides up to sixteen (16), CH-2-CH isolated transistor type, 24 to 48 VDC output signals. The open-collector outputs of the module are capable of sinking or sourcing up to 250 mADC.

FC 221 (I/O Device Definition) sets DO module operating parameters and each output channel is configured using FC 225 (Digital Output CH) to set individual output channel parameters such as alarm state setting, default state on loss of communication with controller, etc.

Features and benefits

- Sixteen (16) individually CH-2-CH isolated Digital Output channels supporting:
- 24 to 48 VDC Transistor Type DO signals
- Module can sink or source up to 250 mADC I/O current
- Input Status LEDs on module frontplate
- Galvanic isolation of 1500 V for up to 1 minute
- In HN800 operating mode, DO01e supports optional module redundancy

General info	
Article number	7PAA003100R1 (DO01e)
Type	Transistor Digital Output
Signal specification	max 250 mA @ 24-48 VDC
Life cycle status	ACTIVE
Number of channels	16
Signal type	Transistor DO
HART	No
SOE	No
Redundancy	Yes
Form factor	Compact (127 mm)
Mounting	EMB01S-XIO, EMB01S-SOE
MTBF (per MIL-HDBK-217-FN2)	PR: D = 365,931 Hours @ 30 °C 273,823 Hours @ 40 °C 111,541 Hours @ 70 °C
MTTR (Hours)	DO01e MTTR = 1 hour

Detailed data	
Module power requirements	64 mA (typical) @ 24 VDC ± 10%
Module power connection	POWER TB on EMC-_B0x, cHBX01L or VBX01T
Field IO power	Up to 250 mA per CH @ 24- 48 VDC ±10%
Field IO Power, Digital Outputs	24-48 VDC ± 10%, 250 mA max
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 Open-Collector Transistor Type Digital Outputs
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	Standard = ISA S71.04 G1, ISA S71.04 G3 compliant versions SPCxxxA 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 61000-6-2, 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-XIO, HBS01e-EPD, HBS01e-FPH, HBS01e-FPN, VBS01e-EPD, VBS01e-FPH, VBS01e-FPN
Module keying code for base	slot #1 = 10, slot #2 = 16

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

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