DATA SHEET

DO05e

ABB Ability™ Symphony® Plus Hardware Selector

The DO05e digital output module provides eight (8), CH-2-CH isolated electromechanical relay contact outputs. The electromechanical relay contacts are capable of handling up to 3.0 A. The module executes at a 1-msec cycle and has an average response time of 0.5 msec based on when the command is received from the controller

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 the loss of communication with the controller, etc.

Features and benefits

- Eight (8) CH-2-CH isolated Electromechanical Relay, Form C, SPDT contact outputs supporting:
- 3.0 A @ 24 VDC
- 1.0 A @ 48 VDC
- 250 mA @ 125 VDC
- 3.0 A @ 120 VAC
- Silver Tin Oxide contacts rated for 100,000 operations
- Minimum switching load 50 mA @ 10 V
- Output Status LEDs on module frontplate
- Galvanic isolation of 1500 V for up to 1 minute
- In HN800 operating mode, DO05e supports optional module redundancy

General info	
Article number	7PAA001450R11
Type	EMR Contact Digital Output
Signal specification	max 3.0 A @ 120 VAC
Life cycle status	ACTIVE
Number of channels	8
Signal type	EMR Contact DO
HART	No
SOE	No
Redundancy	Yes
Form factor	Compact (127 mm)
Mounting	EMB01S-EMR
MTBF (per MIL-HDBK-217-FN2)	PR: C = 284,775 Hours @ 30 ˚C 217,809 Hours @ 40 ˚C 94,502 Hours @ 70 ˚C
MTTR (Hours)	DO05e MTTR = 1 hour

Detailed data	
Module power requirements	120 mA (typical) @ 24 VDC ± 10%
Module power connection	POWER TB on EMC-_B0x, cHBX01L or VBX01T
Field IO Power, Digital Outputs	Per Channel:max 3.0 A @ 24 VDC (resistive load)max 1.5 A @ 24 VDC (inductive load)max 1.0 A @ 48 VDC (resistive load)max 0.5 A @ 48 VDC (inductive load)max 250 mA @125 VDC (resistive load)max 125 mA @ 125 VDC (inductive load)3.0 A @ 120 VAC
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 EMR Digital Output Channels
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
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-EMR, HBS01e-EMR, VBS01e-EMR
Module keying code for base	slot #1 = 10, slot #2 = 15

Dimensions	
Width	27 mm
Depth	127 mm
Height	127 mm
Weight	204 g

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