DATA SHEET

DO05ev

ABB Ability™ Symphony® Plus Hardware Selector

The DO05ev 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 1-msec cycle and has an average response time of 0.5 msec based on when the command is received from the controller.

The DO05ev EMR Digital Output module is a Form/Fit/Function replacement for DSOI5 Digital Slave Output HR I/O module.

FC 83 (Digital Output Group) sets DO module operating parameters and action to be taken in event of module failure. Each FC 83 configures eight (8) DO channels. One (1) instance of FC 83 is required to configure all eight (8) channels of the module.

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
- Both NO and NC contacts of the EMR are available
- 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

General info	
Article number	7PAA004006R11
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	No
Form factor	HR MMU
Mounting	MMU
MTBF (per MIL-HDBK-217-FN2)	PR B: 210,148 hours @ 30 °C 167,055 hours @ 45 °C 77,669 hours @ 70 °C
MTTR (Hours)	8 Hours

Detailed data	
Module power requirements	86 mA (typical) @ 5 VDC ± 10% 20 mA (typical) @ 24 VDC ± 10%
Module power connection	POWER from MMU
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 with both NO and NC contacts
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

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
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	NTDI01, NTD102
Module keying code for base	slot #1 = 10, slot #2 = 15

Dimensions	
Width	35.6 mm (1.40 inch)
Depth	177.8 mm (7.0 inch)
Height	298.5 mm (11.75 inch)
Weight	420 g (14.8 oz.)

solutions.abb/symphonyplus
solutions.abb/controlsystems