ABB ABB Series Service Manual

DO890

1. Description

3BSC690074R1

3. Product Information

3BSC690074R1 | ABB | DO890 Digital Output 4x1 ch with Intrinsic Safety Interface

The module includes Intrinsic Safety protection components on each channel for connection to process equipment in hazardous areas without the need for additional external devices. Each channel can drive a nominal current of 40 mA into a 300-ohm field load such as an Ex-certified solenoid valve, alarm sounder unit, or indicator lamp. Open and short circuit detection can be configured for each channel. All four channels are galvanic isolated between channels and from the ModuleBus and power supply. Power to the output stages is converted from the 24 V on the power supply connections.

TU890 and TU891 Compact MTU can be used with this module and it enables two wire connections to the process devices without additional terminals. TU890 for Ex applications and TU891 for non Ex applications.

Features and benefits

4 channels for 11 V, 40 mA digital outputs.

All channels fully isolated.

Power to drive Ex certified solenoid valves and alarm sounders.

Output and fault status indicators for each channel.

General info

Article number 3BSC690074R1

Type Digital Output

Signal specification 11 V, 40 mA

Number of channels 4

Signal type Solenoid driver

HART No

SOE No

Redundancy No

High integrity No

Intrinsic safety Yes

Mechanics S800

Detailed data

Isolation Individually isolated, channel-to-channel and to circuit common ground

Output load 100 - 5000 Ω

Current limiting Short circuit proof current limited output

Rated insulation voltage 50 V

Dielectric test voltage 500 V a.c.

Power dissipation 4.4 W

Current consumption +5 V Modulebus Typ. 80 mA, Max. <150 mA

Current consumption +24 V external Typ. 250 mA, Max. <360 mA

Diagnostics

Front LED’s F(ault), R(un), W(arning), O(SP), Channel 1-4 status

Supervision Internal process supply

Short circuit fault detection limit < 20 Ω

Open circuit fault detection limit > 100 kΩ

Fault sense current < 4 mA

Status indication of supervision 256, 512, 1024 ms

Environment and certification

CE mark Yes

Electrical safety EN 61010-1, EN 61010-2-201

Hazardous Location ATEX/IECEx Zone 2 with interface to Zone 0, cFMus C1, Div 2/Zone 2 with interface to C1, C2, C3 Div 1/Zone 0

Marine certification ABS, BV, DNV, LR

Temperature, Operating 0 to +55 °C (+32 to +131 °F)

Temperature, Storage -40 to +70 °C (-40 to +158 °F)

Pollution degree Degree 2, IEC 60664-1

Corrosion protection ISA-S71.04: G3

Relative humidity 5 to 95 %, non-condensing

Max ambient temperature 55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)

Protection class IP20 according to IEC 60529

Mechanical operating conditions IEC/EN 61131-2

EMC EN 61000-6-4, EN 61000-6-2

Overvoltage categories IEC/EN 60664-1, EN 50178

Equipment class Class I according to IEC 61140; (earth protected)

RoHS compliance EU RoHS, UAE RoHS, CN RoHS

WEEE compliance DIRECTIVE/2012/19/EU

Compatibility

Use with MTU TU890, TU891

Keying code AB

Dimensions

Width 45 mm (1.77”)

Depth 102 mm (4.01”), 111 mm (4.37”) including connector

Height 119 mm (4.7”)

Weight 0.2 kg (0.44 lbs.)