ABB ABB Series Service Manual

DI840

1. Description

The DI840 is a 16 channel 24 V d.c. digital input module for single or redundant applications. The input voltage range is 18 to 30 V d.c. and the input current is 7 mA at 24 V d.c. Each input channel consists of current limiting components, EMC protection components, input state indication LED and optical isolation barrier.

3. Product Information

The DI840 is a 16 channel 24 V d.c. digital input module for single or redundant applications. The input voltage range is 18 to 30 V d.c. and the input current is 7 mA at 24 V d.c. Each input channel consists of current limiting components, EMC protection components, input state indication LED and optical isolation barrier.

The transducer power is supervised and current limited; one output per two input channels. The Sequence of Event function (SOE) can collect events with a resolution of 1 ms. The event queue can contain up to 257 events. The function includes a Shutter filter for filtering out unwanted events.

Features and benefits

16 channels for 24 V d.c. inputs with current sinking

1 group of 16 isolated from ground

Input status indicators

Advanced on-board diagnostics

Sequence of events

Redundant or single applications

Transducer power distribution

MTUs that match this product

,

TU810V1

General info

Article number 3BSE020836R1

Type Digital Input

Signal specification 24 V d.c.

Number of channels 16

Signal type Current sinking

HART No

SOE Yes

Redundancy Yes

High integrity No

Intrinsic safety No

Mechanics S800

Detailed data

Input voltage range, "0" -30..+5 V

Input voltage range, "1" 11..30 V

Input impedance 3.3 kΩ

Isolation Groupwise isolated from ground

Filter times (digital, selectable) 0 to 127 ms

Current limiting Built in current limited sensor power

Maximum field cable length 600 meters (656 yards)

Event recording accuracy 0 ms / +1.3 ms

Event recording resolution 1 ms

Rated insulation voltage 50 V

Dielectric test voltage 500 V a.c.

Power dissipation Typ. 2.7 W

Current consumption +5 V Modulebus 100 mA

Current consumption +24 V external 15 mA + transducer power, Max 335 mA

Diagnostics

Front LED’s F(ault), R(un), W(arning), Channel 1-16 Status

Supervision Process power, Internal circuitry

Status indication of supervision Module Error, Module Warning, Channel error

Environment and certification

CE mark Yes

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

Hazardous Location C1 Div 2 cULus, C1 Zone 2 cULus, ATEX Zone 2

Marine certification BV, DNV, LR

Temperature, Operating 0 to +55 °C (+32 to +131 °F), approvals are issued for +5 to +55 °C

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 and EN 61000-6-2

Overvoltage categories IEC/EN 60664-1, EN 50178

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

RoHS compliance DIRECTIVE/2011/65/EU (EN 50581:2012)

WEEE compliance DIRECTIVE/2012/19/EU

Compatibility

Use with MTU TU810, TU812, TU814, TU818, TU830, TU833, TU838, TU842, TU843, TU852

Keying code CD

Dimensions

Width 45 mm (1.77”)

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

Height 119 mm (4.7”)

Weight 0.15 kg (0.33 lbs.)