

# DI880

## Compact Product Suite hardware selector



The DI880 is a 16 channel 24 V d.c. digital input module for single or redundant configuration. 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. There is one current limited transducer power output per input. The Sequence of Event function (SOE) can collect events with a resolution of 1 ms. The event queue can contain up to 512 x 16 events. The function include a Shutter filter for suppression of unwanted events. The SOE function can report the following status in the event message – Channel value, Queue full, Synchronization jitter, Uncertain time, Shutter filter active and Channel error.

### Features and benefits

- 16 channels for 24 V d.c. inputs with current sinking
- Redundant or single configuration
- 1 group of 16 isolated from ground
- Input status indicators
- Advanced on-board diagnostics
- Sequence of events (SOE)
- Current limited sensor supply per channel
- Certified for SIL3 according to IEC 61508
- Certified for Category 4 according to EN 954-1

#### General info

Article number	3BSE028586R1
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	Yes
Intrinsic safety	No
Mechanics	S800

<b>Detailed data</b>	
Input voltage range, "0"	-30..+5 V
Input voltage range, "1"	11..30 V
Input impedance	3.1 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	2.4 W
Current consumption +5 V Modulebus	Typ. 125 mA, Max. 150 mA
Current consumption +24 V external	15 mA + sensor power, Max. 527 mA

<b>Diagnostics</b>	
Front LED's	F(ault), R(un), W(arning), P(rietary), Channel 1-16 Status
Supervision	Process power, Internal circuitry
Status indication of supervision	Module Error, Module Warning, Internal channel error

<b>Environment and certification</b>	
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	ABS, 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

<b>Compatibility</b>	
Use with MTU	TU810, TU812, TU814, TU818, TU830, TU833, TU842, TU843, TU852
Keying code	FF

<b>Dimensions</b>	
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.)

## Related products



**TU810V1**



**TU833**



**TU843**

—  
[solutions.abb/compactproductsuite](https://solutions.abb/compactproductsuite)  
[solutions.abb/controlsystems](https://solutions.abb/controlsystems)

—  
We reserve the right to make technical changes to the products or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not assume any responsibility for any errors or incomplete information in this document.

We reserve all rights to this document and the items and images it contains. The reproduction, disclosure to third parties or the use of the content of this document – including parts thereof – are prohibited without ABB's prior written permission.

Copyright© 2025 ABB All rights reserved