

# DI820

## Compact Product Suite hardware selector



This module has 8 digital inputs. The a.c. input voltage range is 77 - 130 volt and the input current is 10 mA at 120 V a.c. The d.c. input range is 75 - 145 V and the input current is 2.8 mA at 110 V. The inputs are individually isolated.

Every input channel consists of current limiting components, EMC protection components, input state indication LED, optical isolation barrier and an analog filter (6 ms). Channel 1 can be used as voltage supervision input for channels 2 - 4, and channel 8 can be used as voltage supervision input for channels 5 - 7.

If the voltage connected to channel 1 or 8 disappears, the error inputs are activated and the Warning LED turns on. The error signal can be read from the ModuleBus.

### Features and benefits

- 8 channels for 120 V a.c./d.c. inputs
- Individually isolated channels
- Voltage supervision of field input power
- Input status indicators
- Signal filtering

| General info         |                         |
|----------------------|-------------------------|
| Type                 | Digital Input           |
| Signal specification | 120 V a.c. / 110 V d.c. |
| Article number       | 3BSE008512R1            |
| Number of channels   | 8                       |
| Signal type          | Current sinking         |
| HART                 | No                      |
| SOE                  | No                      |
| Redundancy           | No                      |
| High integrity       | No                      |
| Intrinsic safety     | No                      |
| Mechanics            | S800                    |

| <b>Detailed data</b>               |   |
|------------------------------------|---|
| Input voltage range, "0"           | 0..30 V a.c., 0..20 V d.c.  |
| Input voltage range, "1"           | 77..130 V a.c., 75..145 V d.c.  |
| Input impedance                    | 12 k $\Omega$ (a.c.) / 39 k $\Omega$ (d.c.)                               |
| Isolation                          | Individually isolated channels  |
| Filter times (digital, selectable) | 2, 4, 8, 16 ms  |
| Input frequency range              | 47..63 Hz   |
| Analog filter On/Off delay         | 5 / 18 ms   |
| Current limiting                   | Sensor power can be current limited by the MTU                            |
| Maximum field cable length         | 200 meters (219 yards) 100 pF/m for a.c., 600 meters (656 yards) for d.c. |
| Rated insulation voltage           | 250 V   |
| Dielectric test voltage            | 2000 V a.c.   |
| Power dissipation                  | Typ. 2.8 W  |
| Current consumption +5 V Modulebus | 50 mA   |
| Current consumption +24V Modulebus | 0   |
| Current consumption +24V external  | 0   |

| <b>Diagnostics</b>               |  |
|----------------------------------|--|
| Front LED's                      | F(ault), R(un), W(arning), Channel 1-16 Status         |
| Supervision                      | Process voltage, Channel 1 and 8 can be used per group |
| Status indication of supervision | Module Error, Module Warning, Channel error            |

| <b>Environment and certification</b> |   |
|--------------------------------------|---|
| CE mark                              | Yes   |
| Electrical safety                    | IEC 61131-2, UL 508   |
| Hazardous Location                   | -   |
| Marine certification                 | ABS, BV, DNV-GL, LR, RS, CCS  |
| Protection rating                    | IP20 according to IEC60529  |
| Corrosive atmosphere ISA-S71.04      | G3  |
| Climatic operating conditions        | 0 to +55 °C (Storage -40 to +70 °C), RH=5 to 95 % no condensation, IEC/EN 61131-2 |
| Pollution degree                     | Degree 2, IEC 60664-1   |
| 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)                                 |
| Max ambient temperature              | 55 °C (131 °F), for vertical mounting in compact MTU 40 °C (104 °F)               |
| RoHS compliance                      | EN 50581:2012   |

| <b>Compability</b> |                                   |
|--------------------|-----------------------------------|
| Use with MTU       | TU811, TU813, TU831, TU839, TU851 |
| Keying code        | AB                                |

### **Intrinsic Safety parameters**

| <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            | 0.18 kg (0.4 lbs.)                                 |

# Related products



**TU839**



**TU831V1**



**TU811V1**



**TU813**



**TU851**

---

[www.abb.com/800xA](http://www.abb.com/800xA)  
[www.abb.com/controlsystems](http://www.abb.com/controlsystems)

---

800xA is a registered or pending trademark of ABB. All rights to other trademarks reside with their respective owners.

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© 2018 ABB All rights reserved