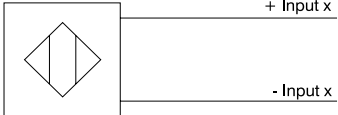
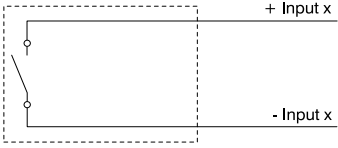
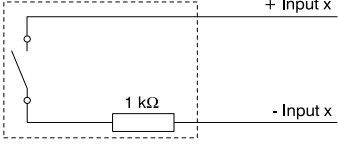
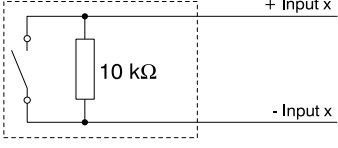
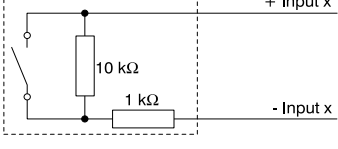


7.5 DI825

7.5.1 General Information

The DI825 module is used to convert digital signals from the levels that can cause explosions to levels that cannot cause explosions. In order to meet the requirements for such a task, the input circuit for the DI825 module has [EEx ia] IIC ignition protection.

Examples for possible signal encoders:

Proximity Switch	
Switch according to DIN 19234 (Namur)	
Mechanical Contacts	
Without open circuit and without short circuit recognition	
Without open circuit and with short circuit recognition	
With open circuit and without short circuit recognition	
With open circuit and with short circuit recognition	

7.5.2 Technical Data



Module ID	DI825
General	
Model Number	2DI825.6
Description	2010 Digital Input Module, 8 Namur inputs, Ex(i), 12 V, 12 mA, electrically isolated and intrinsically safe, Order terminal block separately!
C-UL-US Listed	in preparation
B&R ID Code	\$1F
Base Plate Module	BP200, BP201, BP210
Static Characteristics	
Module Type	B&R 2010 I/O module single width
Number of Inputs	8
No-Load Voltage	8.05 V $\pm$ 5%
Maximum Values per Input Circuit ¹⁾ Max. Voltage Max. Current Max. Power	12 V 12 mA 36 mW
Maximum Values for Ignition protection [EEx ia] IIC Maximum External Capacitance Maximum External Inductance	0.5 μ F 2 mH
Internal Resistance	Approx. 1 k Ω
Open Line Recognition Switching Range Hysteresis	50 μ A to 350 μ A Typ. 0.15 mA

Module ID	DI825
Short Circuit Recognition Switching Range Hysteresis	100Ω to 360Ω Typ. 100Ω
Switching Threshold Switching Range Hysteresis	1.2 mA to 2.1 mA Typ. 0.5 mA
Delay 0 to 1	Max. 100 μsec
Delay 1 to 0	Max. 100 μsec
Power Consumption	Max. 11 W
Operating Characteristics	
Electrical Isolation Input - PCC Input - Input	Yes / max. peak value of nominal voltage: 375 V Yes / max. peak value of nominal voltage: 375 V
Intrinsic Safety	Yes
Mechanical Characteristics	
Dimensions (H, W, D) [mm]	285, 40, 185
Terminal Assignments	see section "Terminal Assignments"

7.5.3 Status LEDs



This LED shows the terminal status. That means, if this LED is lit, a terminal block is not installed or is not correctly installed on the module.

1 ... 8

The Status LEDs show the logical status of the respective input.

open line

Open line recognition for the respective input.

LED lit open line

LED not lit no open line

short circuit

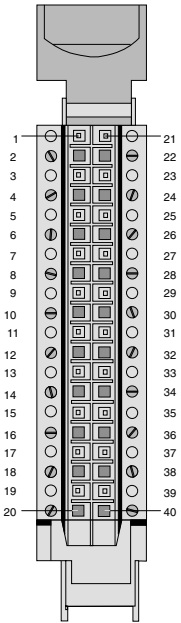
Short circuit recognition for the respective input.

LED lit short circuit

LED not lit no short circuit



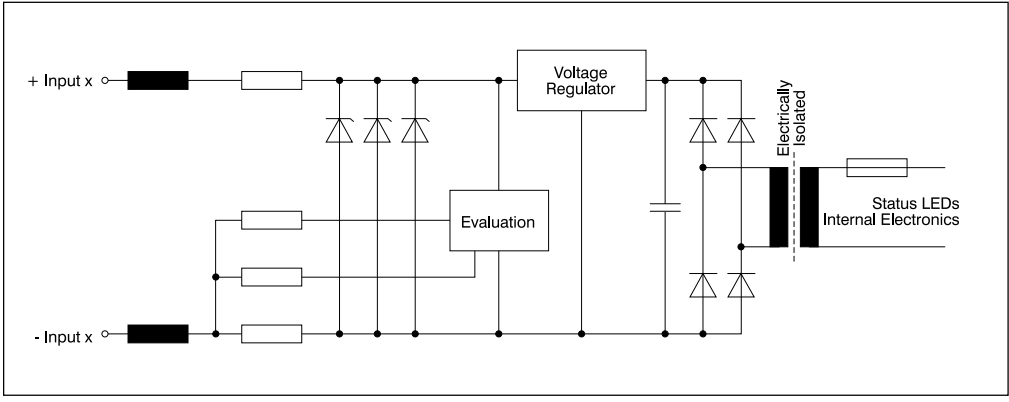
7.5.4 Terminal Assignments



Terminal	Description	Terminal	Description
1		21	
2	---	22	---
3		23	
4	---	24	---
5		25	
6	- Input 1	26	+ Input 1
7		27	
8	- Input 2	28	+ Input 2
9		29	
10	- Input 3	30	+ Input 3
11		31	
12	- Input 4	32	+ Input 4
13		33	
14	- Input 5	34	+ Input 5
15		35	
16	- Input 6	36	+ Input 6
17		37	
18	- Input 7	38	+ Input 7
19		39	
20	- Input 8	40	+ Input 8

TB120

7.5.5 Input Circuit



7.5.6 Variable Declaration

Function	Variable Declaration				
	Scope	Data Type	Length	Module Type	Channel
Read single digital input (channel x)	tc_global	BIT	1	Digit. In	1 ... 8
Read terminal status Bit 0 = 1: No terminal block installed Bit 0 = 0: Terminal block installed	tc_global	BYTE	1	Status In	0
Read open line register	tc_global	BYTE	1	Status In	2
Read digital inputs I17 - I24	tc_global	BYTE	1	Status In	3

Open Line Register (read)

No ... no open line

Yes ... open line

Bit	Status	Description
0	0	No
	1	Yes
1	0	No
	1	Yes
2	0	No
	1	Yes
3	0	No
	1	Yes
4	0	No
	1	Yes
5	0	No
	1	Yes
6	0	No
	1	Yes
7	0	No
	1	Yes

Short Circuit Register (read)

No ... no short circuit

Yes ... short circuit

Bit	Status	Description
0	0	No
	1	Yes
1	0	No
	1	Yes
2	0	No
	1	Yes
3	0	No
	1	Yes
4	0	No
	1	Yes
5	0	No
	1	Yes
6	0	No
	1	Yes
7	0	No
	1	Yes

7.5.7 Standards

In addition to the standards met by all modules in the B&R SYSTEM 2000 control generation, the DI825 module conforms to the European standard for "Electrical apparatus for potentially explosive atmospheres":

- IEC 50014: 1977 + A1 ... A5 (VDE 0170/0171 Part 1 superseded)
Electrical apparatus for potentially explosive atmospheres, General requirements
- IEC 50020: 1977 + A1 ... A2 (VDE 0170/0171 Part 1 superseded)
Electrical apparatus for potentially explosive atmospheres, Intrinsic safety 'i'