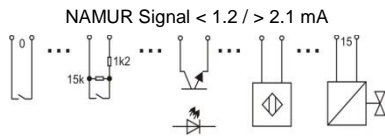


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Nonhazardous
Class I, II, III, Division 2, Group A-G
or Class I, Zone 2, Group IIC/IIB
Hazardous (Classified) Locations



Approved NAMUR proximity switches, optocouplers, low power valves

Wiring legend

Connection allocation – Digital Input Output Module Type 9470/33

	X1	X2
channel 0	1(+), 2(-)	channel 8 17(+), 18(-)
channel 1	3(+), 4(-)	channel 9 19(+), 20(-)
channel 2	5(+), 6(-)	channel 10 21(+), 22(-)
channel 3	7(+), 8(-)	channel 11 23(+), 24(-)
channel 4	9(+), 10(-)	channel 12 25(+), 26(-)
channel 5	11(+), 12(-)	channel 13 27(+), 28(-)
channel 6	13(+), 14(-)	channel 14 29(+), 30(-)
channel 7	15(+), 16(-)	channel 15 31(+), 32(-)

Notes:

- Intrinsically safe apparatus shall be switches or an Approved System or Entity device connected in accordance with the manufacturer's installation instructions.
- For Entity concept use the appropriate parameters from above to ensure the following:

$$V_{OC} \text{ or } V_t \leq V_{max} \quad C_a \geq C_i + C_{leads}$$

$$I_{sc} \text{ or } I_t \leq I_{max} \quad L_a \geq L_i + L_{leads}$$
- The values of La and Ca in the tables on the right side are the maximum values for combined inductance and capacitance (including cable inductance and capacitance). The values for La and Ca marked in grey are the values determined according to curves and tables of IEC 60079-11, Annex A. These grey marked values may be used for assessment as per IEC 60079-14, intrinsically safe circuits with only one source of power.
- Suitable separation must be maintained between wiring of each I.S. input channel.
- For Installation in Division 2 or Zone 2 see Certification drawing for IS1 resp. IS1+ Remote I/O System No. 9400 6 031 004 1 or 9400 6 031 006 1 as part of the documentation of the CPU & Power Modules.

The Type 9470 Digital Input Output Module is designed to receive up to 16 discrete input signals from dry contacts and NAMUR proximity sensors etc. and transfer them to the IS1 CPU & Power Module. It is also possible to drive low power valves. The module is nonincendive for installation in a Class I, II, III, Division 2, Group A-G or Class I, Zone 2, Group IIC/IIB hazardous location according to NEC Article 504/505 or Canadian Electrical Code, CSA C22; Providing intrinsically safe connections for Class I, Division 1, Groups A-G or Class I, Zone 0, Group IIC/IIB hazardous locations listed below.

Entity parameters for wiring configuration to the left are as follows:

	CL I, DIV 1, A,B / Zone 0, GP IIC		CL I, DIV 1, C-G / Zone 0, GP IIB/IIC	
	La [mH]	Ca [µF]	La [mH]	Ca [µF]
single channel	280	-	1000	-
	100	≤ 0.49	100	≤ 2.6
Voc = 9.8 V	50	0.56	50	2.8
Isc = 10.4 mA	20	0.64	20	3.3
Po = 25.5 mW	10	0.72	10	3.7
Ci = 2.5 nF	5	0.81	5	4.2
Li = 0 mH	2	0.96	2	5.1
	1	1.1	1	6.0
	0.5	1.3	0.5	7.2
	0.2	1.6	0.2	9.3
	0.1	2.0	0.1	12.0
	≤ 0.02	3.3	≤ 0.01	23.0
2 ch. connected parallel	-	-	270	-
	100	≤ 0.3	100	≤ 2.3
Voc = 9.8 V	50	0.44	50	2.6
Isc = 20.8 mA	20	0.57	20	3.1
Po = 51.0 mW	10	0.67	10	3.6
Ci = 5 nF	5	0.77	5	4.1
Li = 0 mH	2	0.93	2	5.1
	1	1.1	1	6.0
	0.5	1.3	0.5	7.2
	0.2	1.6	0.2	9.3
	0.1	2.0	0.1	12.0
	≤ 0.02	3.3	≤ 0.01	23.0
4 ch. connected parallel	-	-	100	≤ 1.5
	27	≤ 0.32	50	2.1
Voc = 9.8 V	20	0.41	20	2.8
Isc = 41.6 mA	10	0.56	10	3.4
Po = 102.0 mW	5	0.69	5	3.9
Ci = 10 nF	2	0.88	2	4.9
Li = 0 mH	1	1.0	1	5.9
	0.5	1.2	0.5	7.1
	0.2	1.6	0.2	9.3
	0.1	2.0	0.1	12.0
	≤ 0.01	3.3	≤ 0.01	23.0
8 ch. connected parallel	-	-	29	≤ 1.7
	-	-	20	2.1
Voc = 9.8 V	6.7	≤ 0.4	10	2.9
Isc = 83.2 mA	5	0.5	5	3.6
Po = 204.0 mW	2	0.76	2	4.7
Ci = 20 nF	1	0.96	1	5.7
Li = 0 mH	0.5	1.2	0.5	6.9
	0.2	1.6	0.2	9.1
	0.1	1.9	0.1	11
	≤ 0.01	3.3	≤ 0.01	23
16 ch. connected parallel	-	-	7.7	≤ 2.1
	-	-	5	2.8
Voc = 9.8 V	1.8	≤ 0.53	2	4.2
Isc = 164 mA	1	0.77	1	5.3
Po = 402 mW	0.5	1.0	0.5	6.6
Ci = 40 nF	0.2	1.5	0.2	8.9
Li = 0 mH	0.1	1.8	0.1	11
	≤ 0.01	3.3	≤ 0.01	23

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2016	Date	Name	<p style="text-align: center;">Certification drawing</p> <p style="text-align: center;">Digital Input Module</p> <p style="text-align: center;">Type 9470/33-16-1*</p>	Scale
Drawn by	25.10.	Bagusch		none
Checked		Kaiser		Sheet
				1 of 1
				Agency
01	09.03.2018	Bagusch	9470 6 031 002 1	FM
Version	Date	Name	Rep. f.	Rep. t.
				A4

