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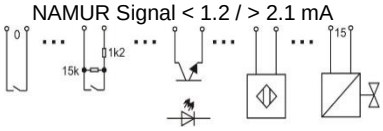
Nonhazardous
Class I, II, III, Division 1, Group A-G
or Class I, Zone 1, Group IIC/IIB
Hazardous (Classified) Locations

NAMUR Signal < 1.2 / > 2.1 mA



Approved NAMUR proximity switches,
optocouplers, low power valves

Wiring legend
Connection allocation – Digital Input Output Module Type 9470/32

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:
1. Intrinsically safe apparatus shall be switches or an Approved System or Entity device connected in accordance with the manufacturer´s installation instructions.
2. For Entity concept use the appropriate parameters from above to ensure the following:
   V_{OC} or $V_t \leq V_{max}$ $\quad C_a \geq C_i + C_{leads}$
   I_{SC} or $I_t \leq I_{max}$ $\quad L_a \geq L_i + L_{leads}$
3. 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.
4. Suitable separation must be maintained between wiring of each I.S. input channel.
5. For Installation in Division 1 or Zone 1 see Certification drawing for IS1 resp. IS1+ Remote I/O System No. 9400 6 031 003 1 as part of the documentation of the CPU & Power Modules.
6. 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.
7. Installation in Division 2 or Zone 2 is also allowed according to NEC Article 504/505 or Canadian Electrical Code, CSA C22.

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 transmit them to the IS1 CPU & Power Module. It is also possible to drive low power valves. The module is intrinsically safe for installation in a Class I, II, III, Division 1, Group A-G or Class I, Zone 1, 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/IIIC	
	La [mH]	Ca [µF]	La [mH]	Ca [µF]
single channel	280	-	1000	-
	100	≤ 0.49	100	≤ 2.6
V_{OC} = 9.8 V	50	0.56	50	2.8
I_{SC} = 10.4 mA	20	0.64	20	3.3
P_O = 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
V_{OC} = 9.8 V	50	0.44	50	2.6
I_{SC} = 20.8 mA	20	0.57	20	3.1
P_O = 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
V_{OC} = 9.8 V	20	0.41	20	2.8
I_{SC} = 41.6 mA	10	0.56	10	3.4
P_O = 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
V_{OC} = 9.8 V	6.7	≤ 0.4	10	2.9
I_{SC} = 83.2 mA	5	0.5	5	3.6
P_O = 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
V_{OC} = 9.8 V	1.8	≤ 0.53	2	4.2
I_{SC} = 164 mA	1	0.77	1	5.3
P_O = 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
			Drawn by	03.03.	Bagusch
			Checked		Kaiser
01	09.03.2018	Bagusch			
Version	Date	Name			

Certification drawing
Digital Input Output Module
Type 9470/32-16-1*

Scale: none
Sheet: 1 of 1
Agency: FM

9470 6 031 001 1

Rep. f. | Rep. t. | A4

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