

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

Input for "Plant-stop"
only at type 9475/32-04-*2



Approved intrinsically safe
solenoid valves, indicating lamps

Wiring legend

Connection allocation – Digital Output Module Type 9475/32-04-**

DOM (4 channels) 9475/32-04-**		Connection X1
Channel no.	Terminal no.	
0	1(+), 2(-)	
-	3(+), 4(-)	
1	5(+), 6(-)	
-	7(+), 8(-)	
2	9(+), 10(-)	
-	11(+), 12(-)	
3	13(+), 14(-)	
-	15(+), 16(-)	

Notes:

- Intrinsically safe apparatus shall be solenoid valves or LEDs 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:
 $V_{OC} \text{ or } V_t \leq V_{max}$ $C_a \geq C_i + C_{leads}$
 $I_{SC} \text{ or } I_t \leq I_{max}$ $L_a \geq L_i + L_{leads}$
- The values of L_a and C_a in the tables on sheet 2 are the maximum values for combined inductance and capacitance (including cable inductance and capacitance). The values for L_a and C_a 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.

The Type 9475 Digital Output Module is designed to receive a digital signal from the IS1 CPU & Power Module and output a corresponding discrete signal to solenoid valves, LED initiators and audible alarms. 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,II,III, DIV 1, Group A-G or CL I, Zone 0, Group IIC

	V_{OC} [V]	I_{SC} [mA]	P_o [mW]	C_i [nF]	L_i [mH]
9475/32-04-1*	19.7	142	698	11	0
9475/32-04-2*	25.7	110	708	7.2	0
9475/32-04-3*	26.0	90	585	5.2	0

CL I,II,III, DIV 1, Group A-G or CL I, Zone 1, Group IIC

	V_{OC} [V]	I_{SC} [mA]	P_o [mW]	C_i [nF]	L_i [mH]
9475/32-04-1*	19.7	53.8	617	11	0
9475/32-04-2*	25.7	49.5	648	7.2	0
9475/32-04-3*	26.0	50.4	508	5.2	0

"Plant-stop I" at 9475/32-04-*2 only, Connection X3

CL I,II,III, DIV 1, Group A-G or CL I, Zone 0, Group IIC

Terminal 1(+), 2(-) (3-4 open)	V_{OC} [V]	I_{SC} [mA]	P_o [mW]	C_i [μF]	L_i [mH]
9475/32-0*-2	5.1	0.44	0.50	5.2	0

Plant-stop I: Only for connection to passive equipment, such as contacts or optocouplers!

It must be galvanically separated from other intrinsically safe and non-intrinsically safe electric circuits and from the earth and must not be connected to electric circuits "Plant STOP" of other modules.


"Plant-stop II" at 9475/32-04-*2 only, Connection X3

CL I,II,III, DIV 1, Group A-G or CL I, Zone 0, Group IIC

Terminal 3(+), 4(-) (1-2 open)	V_i [V]	R_i [Ω]	C_i [nF]	L_i [mH]
9475/32-0*-2	30	4940	0	0

Plant-stop II: In the operating mode "Active input" at terminals X3.3 and X3.4, "Plant STOP" is galvanically separated from all other electric circuits and may be connected in parallel to other modules.

- Suitable separation must be maintained between wiring of each I.S. input channel.
- 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.
- 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.
- Installation in Division 2 or Zone 2 is also allowed according to NEC Article 504/505 or Canadian Electrical Code, CSA C22.

2016	Date	Name	Certification drawing		Scale	
Drawn by	03.03.	Bagusch	Digital Output Module Type 9475/32-04-e* (e = 1, 2 or 3)		none	
Checked		Kaiser			Sheet	1 of 2
			9475 6 031 001 1		Agency	FM
					Version	Date
01	09.03.2018	Bagusch				

Capacitance and Inductance values for circuit with concentrated inductors and capacitors

The internal capacitance per channel is already taken into account in the La and Ca values shown in the tables below. The internal inductance is negligibly small.

Type 9475/32-04-1* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 0, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 0, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
1.3	≤ 99	7.5	≤ 669
1.1	109	5.0	879
-	-	2.0	889
0.5	119	0.5	889
0.2	149	0.2	989
0.1	189	0.1	1189
≤ 0.05	220	≤ 0.05	1439

Type 9475/32-04-1* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 1, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 1, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
3.1	≤ 109	27.0	≤ 499
2.0	109	20.0	609
0.6	119	10.0	869
0.5	119	5.0	899
0.2	149	0.2	1089
0.1	189	0.1	1189
≤ 0.05	220	≤ 0.05	1439

Type 9475/32*04-2* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 0, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 0, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
1.45	-	10.0	≤ 323
0.75	≤ 56	5.0	323
0.5	67	2.0	333
0.37	76	1.0	393
0.2	93	0.5	473
0.1	95	0.2	633
≤ 0.05	95	≤ 0.1	783

Type 9475/32-04-2* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 1, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 1, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
1.5	≤ 43	24.0	≤ 333
1.0	51	20.0	333
0.86	55	2.0	343
0.5	69	1.0	393
0.37	76	0.5	483
0.2	93	0.2	633
≤ 0.1	95	≤ 0.1	783

Type 9475/32-04-3* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 0, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 0, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
2.44	-	16.0	≤ 335
2.2	≤ 39	10.0	335
1.0	55	2.0	345
0.5	71	1.0	395
0.38	79	0.5	475
0.2	94	0.2	625
≤ 0.05	94	≤ 0.1	765


Type 9475/32-04-3* Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 1, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 1, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
3.4	≤ 35	32.0	≤ 345
2.4	41	20.0	345
2.0	44	1.0	405
1.0	57	0.5	485
0.5	73	0.2	635
0.39	80	0.1	765
≤ 0.2	94	≤ 0.05	765

Type 9475/32-04-*2,
"Plant-stop I" Capacitance and Inductance values

CL I, DIV 1, Group A,B CL I, Zone 0, Group IIC		CL I, DIV 1, Group C-G CL I, Zone 0, Group IIB/IIIC	
La [mH]	Ca [nF]	La [mH]	Ca [nF]
100	≤ 2195	100	≤ 9995
10	2595	10	12995
2.0	3295	2.0	16995
1.0	3695	1.0	19995
0.2	5495	0.2	31995
≤ 0.01	15995	≤ 0.01	159995

F 4830 503

			2016	Date	Name	Certification drawing Digital Output Module Type 9475/32-04-e* (e = 1, 2 or 3)	Scale
			Drawn by	03.03.	Bagusch		none
			Checked		Kaiser		Sheet
							2 of 2
							Agency
						9475 6 031 001 1	FM
01	09.03.2018	Bagusch					
Version	Date	Name				Rep. f.	Rep. t.
							A4