

The Type 9413/2*-210-84-FF Digital I/O Coupler is an Explosion-protected device for installation in Non-Hazardous, Class I, II, III, Division 2, Groups A-G or Class I, Zone 1 Hazardous (Classified) Locations and provides four intrinsically safe outputs and eight intrinsically safe input circuits for connections of field devices located in Class I, II, III, Division 1, Group A-G or Class I, Zone 0, [AEx ia] Group IIC/IIB hazardous locations according to NEC Article 504/505 as listed below.

Digital I/O Coupler Type 9413/2b-210-84-FF

b = numeral 1 or 8 for supply side design 1 = 4-wire
8 = 2-wire

Nominal values are as follows:

Type	Terminal	V_{nom}	U_{max}	I_{nom} (17 V)	I_{nom} (24 V)	I_{nom} (28 V)
9413/28-210-84-FF	BUS (+), (-)	24 V DC (17 to 32 V DC)	253 V AC	200 mA	140 mA	120 mA
9413/21-210-84-FF	24 V DC (+), (-)	24 V DC (17 to 32 V DC)	253 V AC	320 mA	220 mA	190 mA
	BUS (+), (-)	24 V DC (17 to 32 V DC)	253 V AC	-	-	-

OR with connection of an intrinsically safe Fieldbus (see Note 10)

Type	Terminal	V_{nom}	U_{max}	I_{nom} (17 V)	I_{nom} (24 V)	I_{nom} (28 V)
9413/21-210-84-FF	24 V DC (+), (-)	24 V DC (17 to 32 V DC)	253 V AC	320 mA	220 mA	190 mA
	Terminal	Type of Fieldbus	Gas group	V_{max} / U_i	I_{max} / I_i	P_{max} / P_i
	BUS (+), (-)	FISCO	A to G (IIC)	17.5 V DC	380 mA	5.32 W
		ENTITY	A to G (IIC)	24 V DC	360 mA	1.04 W
	ENTITY	C to G (IIB)	24 V DC	380 mA	2.58 W	

Entity parameters for wiring configurations are as follows:

Type	Terminals	V_{oc}	I_{sc}	P_o	L_o	L_o	C_o	C_o
9413/28-210-84-FF and 9413/21-210-84-FF		[V]	[mA]	[mW]	CL I, DIV 1, GP A, B / Zone 0, GP IIC	CL I, DIV 1, GP C-G / Zone 0, GP IIB	CL I, DIV 1, GP A, B / Zone 0, GP IIC	CL I, DIV 1, GP C - G / Zone 0, GP IIB
(see Note 11)	OUT 1 to 4:	27.4	100	680	0.5 mH	1 mH	65 nF	355 nF
	IN 1 to 8:	9.56	10.9	25.9	1 mH	1 mH	1200 nF	6300 nF

Notes:

- For Entity concept use the appropriate parameters to ensure the following:
 V_t or $V_{oc} \leq V_{max}$ $C_o, C_a \geq C_i + C_{cable}$ $P_o \leq P_i$
 I_t or $I_{sc} \leq I_{max}$ $L_o, L_a \geq L_i + L_{cable}$
- Electrical apparatus connected to the non-intrinsically safe connections (24 V DC, BUS) shall not use or generate voltages > 250 V (U_{max}).
- Do not disconnect Non-I.S. field wiring unless area is known to be non hazardous.
- Installation should be in accordance with Article 504/505 of the National Electrical Code, ANSI/NFPA 70 and ANSI/ISA RP 12.06.01
- Installation in Canada should be in accordance with the Canadian Electrical Code, CSA C22.1, Part 1, Appendix F.
- Ambient temperature: -20°C ... +65°C (Type 9413/21-210-84-FF) or -20°C ... +60°C (Type 9413/28-210-84-FF) depends on mounting conditions and must be assured for the apparatus with the final installation.
- Use a general purpose enclosure meeting the requirements of ANSI/ISA S82.02.01 for use in Non-Hazardous or Class I, Division 2, Hazardous (Classified) Locations.
- Use an FM Approved Dust-ignition proof enclosure appropriate for environmental protection in Class II, Division 1, Groups E, F and G; and Class III, Hazardous (Classified) Locations.
- The Digital I/O coupler Types 9413/2*-210-84-FF are to be screw mounted on a mounting plate.
- After the "BUS" circuit once has been connected to a non-intrinsically safe circuit it must not be connected to an intrinsically safe fieldbus.
- Each group of circuits "OUT" and "IN" reference to a common return, while both groups of circuits are safely galvanically separated from each other and from the circuits "BUS" and "24 V DC"

WARNING : Substitution of components may impair Intrinsic Safety.
Do not disconnect equipment when a flammable or combustible atmosphere is present.
AVERTISSEMENT: Substitution de composants peut compromettre la sécurité intrinsèque.
Ne pas débrancher l'équipement en présence d'atmosphère inflammable ou combustible.

The safety relevant statements of this document may be transferred into the operating instructions. Transferring the text, editorial changes of equivalent meaning are allowed.

2013	Date	Name	Certification drawing	Scale
drawn	16.05.	Bader	IS bus – Digital I/O Coupler Type 9413/2*-210-84-FF	none
checked		Kaiser		Sheet 1 of 1
				Agency FM
			9413 6 031 001 1	
Version	Date	Name	Ers. f.	Ers. d.
				A4