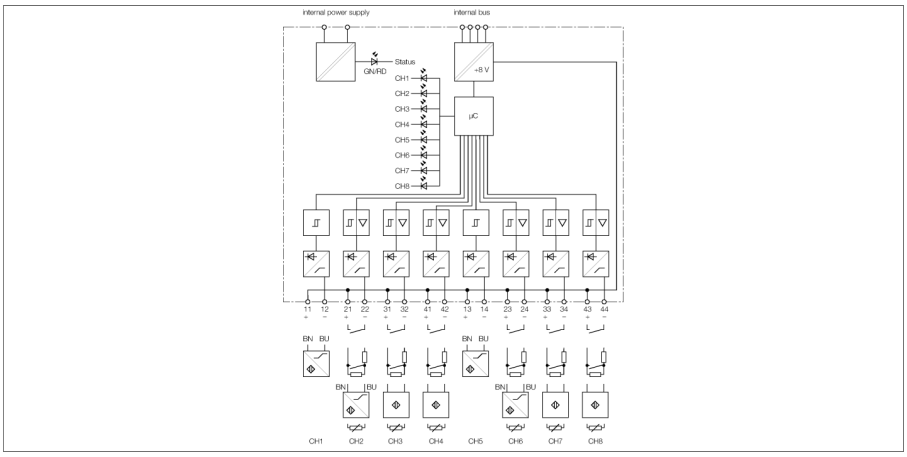
Remote I/O System excom®
Frequency meter, 2-channel
DF20EX



The input module DF20EX is equipped with 8 channels according to NAMUR which are split into two blocks. There is one frequency input per block and three control inputs/outputs.

The module features protection class Ex ib IIC and can be mounted in zone 1 in combination with *excom*®. When connecting the field devices, care has to be taken that all outputs are on the same potential. The explosion protection category of inputs/outputs is Ex ia IIC.

The module can be used as a counter or frequency input module: It is thus suited for pulse counting of binary input signals or frequency measurements of binary pulse sequences of NAMUR sensors.

The counting direction can either be set externally via a control input or internally by setting a parameter. The maximum frequency of one block is 4 kHz; with 2 blocks the frequency is reduced to 2 kHz.

Input and output mode can be adjusted via the PROFIBUS-DP master. Each channel is equipped with parametrizable wire-break/short-circuit monitoring.

- **Frequency module for the connection of intrinsically safe sensors (according to NAMUR)**

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Industrial Automation

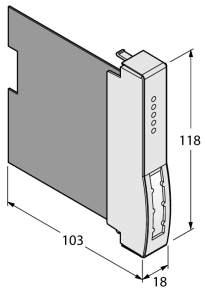
Type designation	DF20EX
Ident no.	6884061
Supply voltage	via the backplanes, central power supply
Power consumption	≤ 1 W
Galvanic isolation	to int. bus and supply circuit
Number of channels	2-channel
Input circuits	acc. to EN 60947-5-6 (NAMUR) intrinsically safe acc. to EN 60079-11
No-load voltage	8 VDC
Short-circuit current	4 mA
Switching threshold on/off	type 1.8 / type 1.4 mA
Switching frequency	≤ 4000 Hz
Short-circuit	< 367 Ω
Wire-break	< 0.2 mA
Measuring accuracy	≤ 0.1 % of full scale
Approvals	
Ex approval acc. to conformity certificate	PTB 00 ATEX 2178
Device designation	⟨Ex⟩ II 2 (1) G Ex ib [ia] IIC T4
Device marking	⟨Ex⟩ II (1) D [Ex ia IIIC]
Max. values:	Terminal connection: 1+2 / 3+4
Max. output voltage U_o	≤ 9.6 V
Max. output current I_o	≤ 44 mA
Max. output power P_o	≤ 106 mW
Characteristic	linear
Internal inductance/capacitance L_i/C_i	L_i negligibly small C_i negligibly small

External inductance/capacitance L_o/C_o

	IIC	IIB
L_o [mH]	C_o [µF]	C_o [µF]
2.0	0.9	5.1
1.0	1.1	6.1
0.5	1.3	7.3
0.2	1.7	8.6

Indication	
Operational readiness	1 x green / red
State/ Fault	8 x yellow / red
Housing material	Plastic
Connection mode	module, plugged on rack
Protection class	IP20
Ambient temperature	-20…+70 °C
Relative humidity	≤ 95 % at 55 °C acc. to EN 60068-2
Vibration test	acc. to IEC 60068-2-6
Shock test	acc. to IEC 60068-2-27
EMC	acc. to EN 61326-1 (2006) acc. to NAMUR NE21 (2007)
MTTF	101 acc. to SN 29500 (Ed. 99) 40 °C
Dimensions	18 x 118 x 103 mm
Approvals	ATEX IECEx $_cFM_{us}$ TR CU CMI KOSHA INMETRO GL DNV BV LR

Dimensions



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