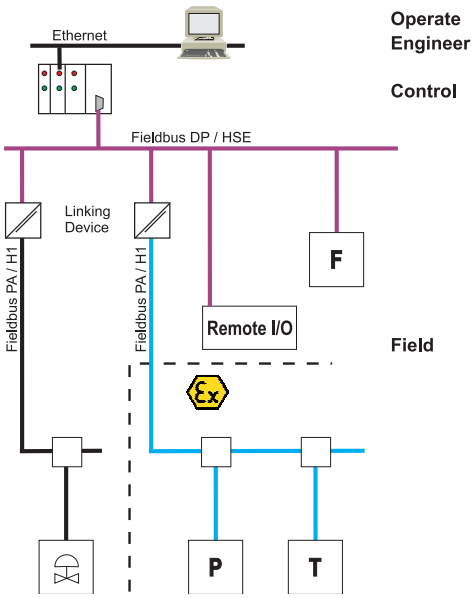
Data Sheet 10/63-6.15-EN Rev. H

Fieldbus accessories

Measurement made easy

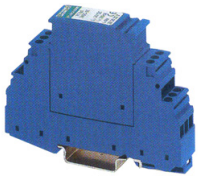


Overvoltage / surge protection

- For 2-wire fieldbus cable
- Non Ex (Hazardous) applications
- Ex (Hazardous) applications

Fieldbus accessories

Overvoltage protection for 2-wire fieldbus cable

	NGV210-NO, NGV211-NO	NGV210-EX, NGV211-EX
	 M10838	 M10839
Application	Overvoltage protection device for two separate floating signal circuits (PROFIBUS PA, FOUNDATION Fieldbus-H1 and 4 ... 20 mA HART), consisting of a base element NGV210-NO and a plug-in module NGV211-NO. A fine protection element guarantees a low voltage threshold in conjunction with fast response between the corresponding cores. The high surge arresting capacity is achieved by using gas-filled surge voltage arresters from each wire to the common reference potential.	Overvoltage protection device for two separate intrinsically safe floating signal circuits (PROFIBUS PA, FOUNDATION Fieldbus-H1 and 4 ... 20 mA HART), consisting of a base element NGV210-EX and a plug-in module NGV211-EX. The installation site is Ex zone 1 and 2. The signal circuits may reach into Ex zone 0.
Internet	www.abb.com/fieldbus	www.abb.com/fieldbus
Temperature range	-40 ... 85 °C	-40 ... 85 °C
Inflammability class in acc. with UL 94	V0	V0
Type of protection	IP 20	IP 20
Approval	UL/cUL Listed, cULus Recognized, GOST, GL	UL/cUL Listed, cULus Recognized, GOST, ATEX, IECEx, BR-Ex
Explosion protection	–	II 1G Ex ia IIC T4 ... T6 Ga, II 1D Ex ia IIIC T135°C...T85°C Da
FISCO approval	–	Not for passive components
Physics	MBP-LP, IEC 61158, 2-wire	MBP-IS, IEC 61158, 2-wire
Nominal voltage U_N	24 V AC	24 V DC
Max. permitted voltage U_C	40 V DC / 28 V AC	30 V DC / 21 V AC
Direct lightning impulse current I_{imp} (10/350) µs	Per path: 2,5 kA	Core-Core: 1 kA
Nominal current I_N	Max. 450 mA (45 °C)	Max. 325 mA (40 °C)
Nominal discharge surge current I_N (8/20) µs	Core-core / core-(PE): 10 kA / 10 kA	Core-core / core-(PE): 10 kA / 10 kA
Max. discharge current I_{max} (8/20) µs	20 kA	20 kA
Output voltage limitation at 1 kV/µs	Core-core / core-(PE): ≤ 55 V / ≤ 450 V	Core-core / core-(PE): ≤ 45 V / ≤ 1 kV
Residual voltage	Core-core: ≤ 55 V	Core-core: ≤ 45 V
Response time t_A	Core-core / core-(PE): ≤ 1 ns / ≤ 100 ns	Core-core / core-(PE): ≤ 1 ns / ≤ 100 ns
Resistance per path	1-2 / 5-6 / 7-8 / 11-12: 2.2 Ω ±10 %	2.2 Ω ±10 %
Base element	For mounting on top hat rail, with gas-filled surge arrester between connections 3/4 (PE) and 9/10	For mounting on top hat rail
Base element and plug-in module	2-channels	2-channels
Total dimension	W / H / L: 17.7 / 65.5 / 90 mm	W / H / L: 17.7 / 65.5 / 90 mm
Connection data for cable: solid / stranded / AWG	0.2 ... 4 mm² / 0,2 ... 2.5 mm² / 24 ... 12	0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 ... 12

Surge protection for 2-wire fieldbus cable

	NGV220-NO	NGV220-EX
	 M10840	 M10841
Application	Surge protection for cable gland mounting (PROFIBUS PA, FOUNDATION Fieldbus-H1 and 4 ... 20 mA HART), M20 x 1.5, standard, 1-channel.	Surge protection for cable gland mounting (PROFIBUS PA, FOUNDATION Fieldbus-H1 and 4 ... 20 mA HART), M20 x 1.5, Ex(Haz.) mounting, 1-channel. Hint: Surge protection is permitted only for ATEX intrinsically safe devices which will be installed in zone 1 or 2. Measuring loop of these devices with surge protection can also be used for zone 0 if allowed in the ATEX approval of this device type.
Internet	www.abb.com/fieldbus	www.abb.com/fieldbus

Operating temperature range	-40 ... 80 °C	-40 ... 80 °C
Enclosure material	NIRO V2A	NIRO V2A
Type of protection	IP 67	IP 67
Approvals	CE, EAC, SIL	CE, EACEx, ATEX, IECEx, SIL
Explosion protection	–	ATEX: II 2(1)G Ex ia [ia Ga] IIC T4 ... T6 Gb
FISCO approval	–	Not for passive components

Physics	MBP-LP, IEC 61158, 2-wire	MBP-IS, IEC 61158, 2-wire
Nominal voltage U_N	24 V	24 V
Max. continuous voltage U_C	34.8 V DC / 24.5 V AC	34.8 V DC / 24.5 V AC
Max. U_i / I_i (Input) acc. to EN 60079-11	–	30 V / 0.5 A
Capacitance	Core-core/core-PG: ≤ 400 pF / ≤ 20 pF	Core-core/core-PG: ≤ 850 pF / ≤ 15 pF
Nominal current I_N	0.5 A	0.5 A
C2 Nominal discharge current I_N (8/20) µs	Total / per core: 10 kA / 10 kA	Total / per core: 10 kA / 5 kA
C2 Nominal discharge current I_N (8/20) µs	shielding-PG: 20 kA	–
Voltage protection level at 1 kV/µs C3	Core-core / core-PG: ≤ 50 V / ≤ 500 V	Core-core / core-PG: ≤ 49 V / ≤ 1 kV
Voltage protection level at I_N C2	Core-core / core-PG: ≤ 65 V / ≤ 650 V	Core-core / core-PG: ≤ 55 V / ≤ 1,1 kV
D1 Lightning impulse current I_{imp} (100/350 µs)	Per line: 1 kA	Per line: 1 kA
Series impedance per line	2.2 Ω	1.8 Ω

Mounting of field / connection	M20 x 1.5 female thread / screw	M20 x 1.5 female thread / screw
Mounting of device side / connection	M20 x 1.5 male thread / connecting leads 1.5 mm^2, length 200 mm	M20 x 1.5 male thread / connecting leads 1.5 mm^2, length 200 mm
Total dimension	W / H / L: 27 / 71 / 27 mm	W / H / L: 27 / 71 / 27 mm
Cross-section area for field: solid / flexible	0.08 … 2.5 mm^2 / 0.08 … 1.5 mm^2	0.08 … 2.5 mm^2 / 0.08 … 1.5 mm^2
Grounding by	Enclosure	Enclosure

Fieldbus accessories

Ordering Information

Overvoltage protection for 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1)			Catalog No.
NGV210-NO	(2839224)		9890180
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Overvoltage protection - Basic element for NGV211-NO with gas conductor top-hat rail mounting, IP 20, 2-channel			
NGV211-NO	(2838283)		9890181
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Overvoltage protection - Cartridge for signal loops operated at zero ground potential, IP 20, 2-channel U_N 24 V AC, $I_N \leq$ 450 mA			
NGV210-EX	(2839279)		9890182
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Overvoltage protection - Basic element for NGV211-EX for the Ex (Haz.) area top-hat rail mounting, IP 20, 2-channel			
NGV211-EX	(2838225)		9890183
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Overvoltage protection - Cartridge for Ex ia circuits, IP 20, 2-channel U_N 24 V DC, $I_N \leq$ 325 mA			
NGV220-NO	(929941)	(Note 1)	7964116
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Surge protection for cable gland mounting, M20 x 1.5, IP 67, 1-channel U_N 24 V DC, $I_N \leq$ 500 mA			
NGV220-EX	(929960)	(Note 1)	7964115
For 2-wire fieldbus cable (PROFIBUS PA, FOUNDATION Fieldbus-H1, 4 ... 20 mA HART) Surge protection for cable gland mounting, M20 x 1.5, for Ex ia circuits, IP 67, 1-channel U_N 24 V DC, $I_N \leq$ 500 mA, Hint: Surge protection is permitted only for ATEX intrinsically safe devices which will be installed in zone 1 or 2. Measuring loop circuit of these devices with surge protection can also be used for zone 0 if allowed in the ATEX approval of this device type.			

Note 1: Not suitable for field device types with low lying M20 x 1.5 thread! Note NGV220 outer dimensions!
Option: Insert M20 x 1,5 / M20 x 1,5 intermediate support.

Notes

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