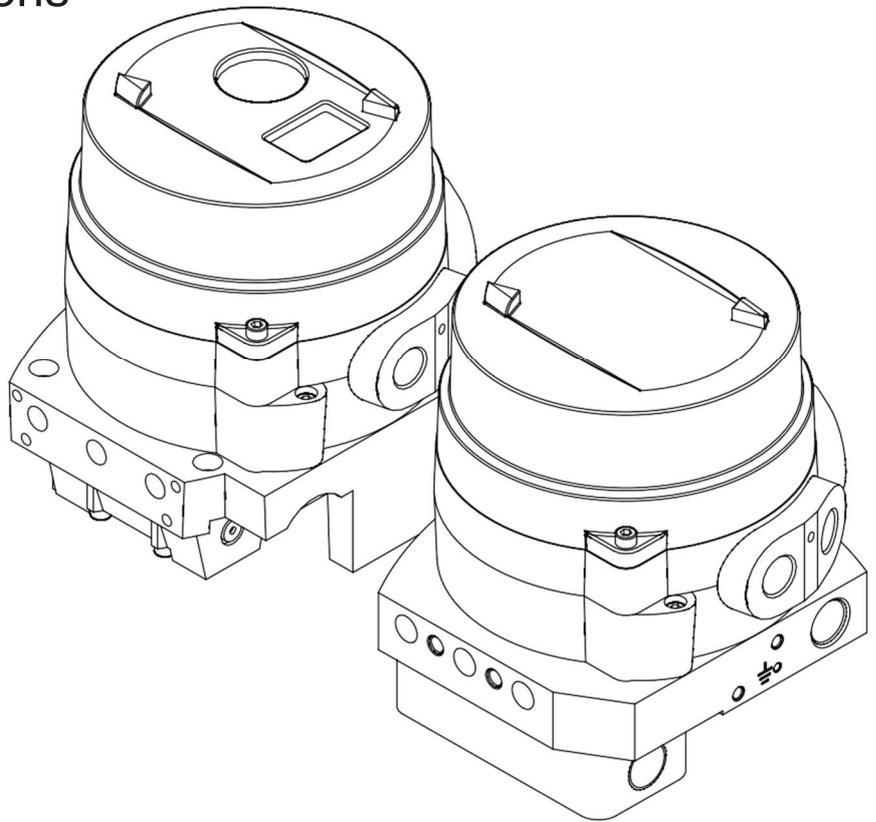


# Neles™ ValvGuard™

VG9000F

Rev. 2.1

Installation, maintenance and  
operating instructions



# 1. CONFIGURATION PARAMETERS

Parameter Name	Values	Visibility by Device Usage			Default value	Valid range	Unit
		Safety	Hybrid	On/Off			
Actuator Type (Atyp)	Single acting actuator (1-A) Double acting actuator (2-A)	x	x	x	1-A		
Valve Type (Vtyp)	Rotary (rot) Linear (Lin)	x	x	x	rot		
Positioner Fail Action (PFA)	Close (CLO) Open (OPE)	x	x	x	CLO		
Extra Pneumatics Instrumentation (EXTI)	non = none bo1 = Volume Booster type 1 bo2 = Volume Booster type 2 bo3 = Volume Booster type 3 qE1 = Quick Exhaust type 1 qE2 = Quick Exhaust type 2 qE3 = Quick Exhaust type 3 co1 = Combination type 1 co2 = Combination type 2 co3 = Combination type 3	x	x		non		
Actuator size (ACTS)	S 1 = B1J8 (<1 dm <sup>3</sup> / <61 in <sup>3</sup> ) S 3 = B1J10 (1-3 dm <sup>3</sup> / 61-183 in <sup>3</sup> ) S10 = B1J12-16 (3-10 dm <sup>3</sup> / 183-610 in <sup>3</sup> ) S30 = B1J20-25 (10-30 dm <sup>3</sup> / 610-1831 in <sup>3</sup> ) L30 = B1J32- (>30 dm <sup>3</sup> / >1831 in <sup>3</sup> )	x	x	x	S 1		
Spool type (STYP)	15 = VG9_12 or VG9_15 35 = VG9235 37 = VG9237	x	x	x	15		
Stroke Profile Open (SPOP)	1 = linear 2 = slow starting 3 = slow starting and ending 4 = equal percentage 5 = quick starting 0 = undefined profile (cannot be selected from LUI)		x		1 (linear)		
Stroke Profile Close (SPCL)	1 = linear 2 = slow starting 3 = slow starting and ending 4 = equal percentage 5 = quick starting 0 = undefined profile (cannot be selected from LUI)		x		1 (linear)		
Stroke Time Open (STOP)			x		10	0-999	s
Stroke Time Close (STCL)			x		10	0-999	s
Automatic Partial Stroke Test (APSt)	dis = auto PST disabled EnA = auto PST enabled md = auto PST enabled with randomized range	x			dIS		
Manual Partial Stroke Test Size (MSTr)		x	x		10.0	3.0-100.0	%
Manual Stroke Speed (MSPd)		x	x		1.0	0.5-3.0	%
Language (LANG)	English (EnG) German (GEr) French (FrE)	x	x	x	EnG		

## 2. TYPE CODING

VALVGUARD VG9000F							
1.	2.	3.	4.	5.	6.	7.	8.
VG	9	2	15	F	E6	/	R01

1.	PRODUCT GROUP
VG	Neles ValvGuard VG9000F, Intelligent Safety Solenoid. TÜV Rheinland SIL 3 certified according to IEC 61508.

2.	SERIES CODE
9	Series 9000 intelligent safety solenoid with universal shaft and attachment face according to standard VDI/VDE 3845. Relevant shaft adapter included in mounting kits. When VG9000 is separate delivery, shaft adapter kit needs to be ordered separately (see type coding for accessories).

3.	ENCLOSURE
	IP66 / NEMA 4X. Standard temperature range -40 °C to +85 °C / -40 °C to +185 °F. M20 x 1.5 conduit entry; 2 pcs
2	Standard epoxy coated anodized aluminium enclosure.
3	Full 316 stainless steel enclosure, no glass window. Glass window available as an option (use 7. sign "Y").

4.	SPOOL VALVE	CONNECTIONS
12	Restricted capacity. Stroke volume of actuator 0.3-6.7 dm <sup>3</sup> .	S, C1, C2 = 1/4 NPT
15	Standard capacity. Stroke volume of actuator > 0.6 dm <sup>3</sup> .	S, C1, C2 = 1/4 NPT
35	High capacity. Stroke volume of actuator > 3.5 dm <sup>3</sup> . Not applicable to 3. sign "3".	S, C1, C2 = 1/2 NPT
37	Extended capacity. Single acting actuators. Stroke volume of actuator > 6.5 dm <sup>3</sup> . Not applicable to 3. sign "3".	S = 1/2 NPT, C2= 1 NPT

5.	COMMUNICATION / INPUT SIGNAL RANGE
F	FOUNDATION fieldbus, physical layer according to IEC 61158-2

6.	APPROVALS FOR HAZARDOUS AREAS
X	<b>ATEX and IECEx certifications:</b> II 1 G Ex ia IIC T6...T4 Ga II 1 D Ex ia IIIC T95 °C...T125 °C Da II 2 G Ex ib IIC T6...T4 Gb II 2 D Ex ib IIIC T95 °C...T125 °C Db Temperature range: T4 or T125 °C: < +80 °C; T5 or T110 °C: < +65 °C; T6 or T95 °C: < +50 °C. II 3 G Ex nA IIC T6...T4 Gc II 3 G Ex ic IIC T6...T4 Gc II 3 D Ex ic IIIC T95 °C...T125 °C Dc Temperature range: T4 or T125 °C: < +85 °C; T5 or T110 °C: < +75 °C; T6 or T95 °C: < +60 °C. Available with or without limit switches. See 9. sign for available options.
X8	<b>CCC (Chinese) certification:</b> Ex ia IIC T4~T6 Ga Ex iaD 20 T95/T110/T125 Ex ib IIC T4~T6 Gb Ex ibD 21 T95/T110/T125 Ex ic IIC T4~T6 Gc Ex icD 22 T95/T110/T125 Ex nA IIC T4~T6 Gc Available with or without limit switches. See 9. sign for available options.
E2	<b>cCSAus certification:</b> Class I, Div 1, Groups B, C, D; Class II, Div 1, Groups E, F, G; Class III; T6...T4, Enclosure type 4X Ex d IIC T6...T4 AEx d IIC T6...T4 Ex tb IIIC T100 °C IP66 AEx tb IIIC T100 °C IP66 T4: -40 °C to +85 °C; T5: <+75 °C; T6: <+60 °C. Available with or without limit switches. See 9. sign for available options. 1/2" NPT conduit entries. No glass window.
E5	<b>INMETRO certifications:</b> Ex db IIC T6...T4 Gb Ex tb IIIC T80 °C... T105 °C Db IP66 Available with or without limit switches. See 9. sign for available options.
E6	<b>ATEX and IECEx certifications:</b> II 2 GD Ex d IIC T6...T4 Gb Ex tb IIIC T80 °C...T105 °C Db IP66 Temperature range: Ta according to separate table (see certificate). Available with or without limit switches. See 9. sign for available options.
E8	<b>CCC (Chinese) certification:</b> Ex d IIC T4~T6 Gb Ex tD A21 IP66 T80°C/T95°C/T105°C Available with or without limit switches. See 9. sign for available options.

7.	OPTIONS
J	External junction box, 2 pcs M20x1.5 conduit entries. Junction box for FF and 24 VDC wiring. Junction box is attached to the standard enclosure. If limit switches (8. sign) are not specified, extension housing is excluded.
Y	Special construction, to be specified.

8.	LIMIT SWITCH TYPE
	Extension housing with additional conduit entries, 4 pcs. M20 x 1.5.
	<b>Position transmitters</b>
T01	SIL certified 2-wire (passive) position transmitter. Usable up to SIL2 acc. to IEC61508. Analog position feedback signal, output 4-20 mA, supply voltage 12 - 30 VDC, external load resistance 0 - 700 W. Potentiometer Contelec GL60, transmitter electronics Neles. Temperature range -40 to +85 °C / -40 to +185 °F. Applicable to 6. sign "X" or "E6". Not applicable with limit switches.
	<b>Inductive proximity sensors, 2 pcs.</b>
D33	Obsolete Select R01 option instead.
D44	Obsolete Select replacement from other NAMUR switch options, e.g. I02.
I02	P+F; NJ2-12GK-SN, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC. Intrinsically safe according to ATEX II 1 G Ex ia IIC T6 Ga. Temperature range -40 to +85 °C / -40 to +185 °F. Usable up to SIL3 acc. to IEC61508.  <b>NOTE:</b> In safety-related applications the sensor must be operated with a qualified fail safe interface, such as P+F KFD2-SH-EX1.
I09	P+F; NCB2-12GM35-N0, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC. Intrinsically safe according to ATEX II 1 G Ex ia IIC T6 Ga. Temperature range -25 to +85 °C / -13 to +185 °F. Usable up to SIL2 acc. to IEC61508.
I45	P+F; NJ3-18GK-S1N, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NO. Intrinsically safe according to ATEX II 1 G Ex ia IIC T6 Ga. Temperature range -25 to +85 °C / -13 to +185 °F. Usable up to SIL3 acc. to IEC61508.  <b>NOTE:</b> In safety-related applications the sensor must be operated with a qualified fail safe interface, such as P+F KFD2-SH-EX1.
I57	P+F; NJ2-V3-N, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC. Temperature range: -25° to +85 °C / -13° to +185 °F. Intrinsically safe according to ATEX and IECEx. Usable up to SIL2 acc. to IEC61508.
I58	4 pcs of P+F; NJ2-V3-N, 2-wire type, DC; > 3 mA; < 1 mA. NAMUR NC. Temperature range: -25° to +85 °C / -13° to +185 °F. Intrinsically safe according to ATEX and IECEx. Usable up to SIL2 acc. to IEC61508.
	<b>Reed or Leverless Type Proximity Switches, 2 pcs.</b> Temperature range -40° to +80 °C / -40° to +176 °F.
R01	Neles; Maxx-Guard G, Reed, SPDT, 300 mA, 24 V DC; 200 mA, 125 V AC. Temperature range -40° to +80 °C / -40° to +176 °F. Usable up to SIL 3acc. to IEC61508. Applicable to 6. sign "E2", "E5", "E6", "E7" or "E8"
R02	Neles; Maxx-Guard M, Reed, SPDT, passive, intrinsically safe, 300 mA, 24 VDC Temperature range -40° to +80 °C / -40° to +176 °F. Usable up to SIL 3 acc. to IEC61508.
R04	Neles; Maxx-Guard H, Reed, SPDT, V <sub>max</sub> 240 v, I <sub>max</sub> 3A, V <sub>max</sub> 100W. Temperature range -40° to +80 °C / -40° to +176 °F. Usable up to SIL 3 acc. to IEC61508. Applicable to 6. sign "E2", "E5", "E6" or "E8".
R35	Topworx; GO35, Leverless, SPDT, 3 A, 24 VDC; 0.5 A, 125 VDC; 4 A, 120 VAC; 2 A, 240 VAC Temperature range -40° to +85°C / -40° to +185 °F. Applicable to 6. sign "E2", "E5", "E6" or "E8".  <b>NOTE:</b> Not for general use, only for projects with product management approval.