



Ex-ATEX and IECEx Certified Hall Effect Single Channel Speed Sensor DSF xx10.xx xHV Ex-ATEX



General

Function	The speed sensors DSF xx10.xx xHV Ex-ATEX are suitable for use with a pole wheel to generate speed proportional frequency signals. They exhibit dynamic behaviour, whereby pulse generation down to 0.05 Hz is guaranteed. The sensing element is a magnetically biased Hall device, followed by an amplifier having a trigger characteristic and short circuit proof output stage.
Safety Notice	The speed sensors DSF xx10.xx xHV Ex-ATEX are certified for applications in areas with explosive atmospheres. These types are to be duly used in undamaged and clean condition. Modifications of sensors are prohibited if not expressly listed in these operating instructions.
Conformity to Standards	<p>DSF xx10.xx xHV Ex-ATEX series sensors are certified according to</p> <p>ATEX/IECEx ia: EN 60079-0, EN 60079-11 and IEC 60079-0, IEC 60079-11. (For details see certificates at the end of this document)</p> <p> II 2G Ex ia IIC T6-T1 Gb for use in flammable gas atmospheres</p> <p> II 2D Ex ia IIIC T135°C Db for use in flammable dust atmospheres</p> <p>The sensors have been designed, manufactured and tested according to the state of the art. For their application the restrictions listed in this operating instruction and the relevant certificate with its supplements and annex must be observed.</p>

OPERATING INSTRUCTIONS

DSF xx10.xx xHV Ex-ATEX

valid for sensors with serial no. S1826 and later

Product ID

Type #	Product #	Drawing #
DSF 1210.00 SHV Ex-ATEX (2m)	374Z-05066	110428F1
DSF 1210.00 SHV Ex-ATEX (5m)	374Z-05176	110428F1
DSF 1210.00 SHV Ex-ATEX (10m)	374Z-05590	110428F1
DSF 1410.00 SHV Ex-ATEX (2m)	374Z-05253	111496F1
DSF 1410.00 SHV Ex-ATEX (5m)	374Z-05254	111496F1
DSF 1410.00 SHV Ex-ATEX (10m)	3742607187	111496F1
DSF 1410.02 AHV Ex-ATEX L=70	374Z-05208	113233B
DSF 1410.02 AHV Ex-ATEX L=100	374Z-05204	113233
DSF 1410.02 AHV Ex-ATEX L=140	374Z-05207	113233A
DSF 1610.03 AHV Ex-ATEX L100	3742609177	121284
DSF 1610.13 AHV Ex-ATEX L100	3742609291	121450
DSF 1610.14 AHV Ex-ATEX L176	3742609292	121458
DSF 1610.15 AHV Ex-ATEX L270	3742609322	121459
DSF 1710.00 AHV S176 Ex-ATEX	374Z-04816	112295
DSF 1810.00 SHV Ex-ATEX (2m)	374Z-05067	110687F1
DSF 1810.00 SHV Ex-ATEX (5m)	374Z-05490	110687F1
DSF 1810.00 S2HV Ex-ATEX (5m)	374Z-05068	112909
DSF 1810.02 SHV Ex-ATEX (5m)	374Z-05364	113727
DSF 1810.04 SHV Ex-ATEX (5m)	3742612290	125346
DSF 2010.00 AHV S30 Ex-ATEX L=134.5	374Z-05250	113342
DSF 2010.00 AHV S30 Ex-ATEX L=193.5	374Z-05251	113343
DSF 2210.00 AHV Ex-ATEX	374Z-05072	110831F1
DSF 2210.00 SHV Ex-ATEX (2m)	374Z-05069	110777F1
DSF 2210.00 SHV Ex-ATEX (5m)	374Z-05221	110777F1
DSF 2210.00 SHV Ex-ATEX (10m)	374Z-05881	110777F1
DSF 2210.00 S2HV Ex-ATEX (5m)	374Z-05071	112911
DSF 2210.05 AHV Ex-ATEX	374Z-05847	115555
DSF 2210.06 AHV Ex-ATEX	3742607163	118396
DSF 2210.07 AHV Ex-ATEX	3742609009	121047
DSF 2210.87 SHV Ex-ATEX (2m)	374Z-05070	111037F1
DSF 2210.87 SHV Ex-ATEX (5m)	374Z-05444	111037F1
DSF 2210.87 SHV S85 Ex-ATEX	374Z-05216	113258
DSF CD10.01 SHV Ex-ATEX	374Z-05886	115785
DSF EH10.00 AHV Ex-ATEX	374Z-05205	113235
DSF EH10.00 SHV Ex-ATEX (5m)	374Z-05277	113391
DSF EH10.19 SHV Ex-ATEX	374Z-05887	115787
DSF EH10.20 SHV Ex-ATEX	3742606606	117127

OPERATING INSTRUCTIONS

DSF xx10.xx xHV Ex-ATEX

Technical Data

Supply voltage	8 ... 28 VDC, max. superimposed AC ripple of 25mVpp. The voltage drop as a result of the cable impedance and safety barriers resistance must be allowed for. Protected against reverse polarity.
Current consumption	Max. 15 mA (without load)
Signal output	<ul style="list-style-type: none">• Square wave from push-pull output stage• DC coupled to the supply (0V = reference voltage)• Load current max. 25 mA• Output voltage: $U_{Hi} > U_{Supply} - 4 \text{ V}$ (at $I_{source} = 25 \text{ mA}$) $U_{Lo} < 2 \text{ V}$ (at $I_{sink} = 25 \text{ mA}$)• The voltage drop as a result of the cable impedance and resistance of safety barriers must be allowed for.• Short circuit proof and protected against reverse polarity.
Frequency range	0.05 Hz...20 kHz
Electromagnetic compatibility (EMC)	According to 2014/30/EU, IEC 61000-6-2, IEC 61000-6-2
Housing	Stainless steel (material number 1.4305 or 1.4301), front side hermetically sealed, electronic components potted in a chemical and age proof synthetic resin or ceramic. Maximum permissible tightening torque: 12 Nm for M12x1 25 Nm for M14x1 35 Nm for M16x1 40 Nm for M18x1.5 50 Nm for M18x1 75 Nm for M22x1 Dimensions according to drawing.
Protection class	IP68 (head), IP67 (cable connection), IP 54 (where connector used)
Vibration immunity	5 g _n in the range 5...2000Hz
Shock immunity	20 g during 20 ms, half-sine wave
Pole wheel	Toothed wheel made of a magnetically permeable material (e.g. Steel 1.0036) <ul style="list-style-type: none">• Minimum tooth width 10 mm• Side offset < 0.2 mm• Eccentricity < 0.2mm• Involute gear wheel preferred (module ≥0.5)
Air gap sensor / pole wheel	Air gap between pole wheel (involute gear) and sensor housing: <ul style="list-style-type: none">• Module 1 mm: 0.2...1.0 mm• Module 2 mm: 0.2...2.5 mm• Module 4 mm (and larger): 0.2...4.5 mm
Insulation	Housing, cable screen (if applicable) and electronics galvanically separated (500 V/50 Hz/ 1 min)
