GEFRAN

GSF

WIRE POSITION TRANSDUCER
(WIRE POTENTIOMETER)

Linear transducer with wire potentiometer technology.

Excellent repeatability, high IP rating, resistance to shock and vibrations, and high electromagnetic compatibility make this transducer suitable for mobile hydraulic applications.

Developed to guarantee a robust, high-performance solution for applications such as agricultural vehicles, earth-moving machines, and hoisting equipment.

TECHNICAL SPECIFICATIONS

Measurement Range

Strokes: 1800mm, 2300mm, 3300mm, 4300mm, 4800mm, 5300mm, 6300mm, 7300mm, 8000mm, 8300mm
(for lower or middle strokes please refer to the dedicated ZERO/SPAN manual)

Supply voltage (Vsupply)

Up to 30 V DC (potentiometric - voltage divider - output)
+10..36 V DC (see ordering code for right supply voltage)

Output signal

Analog output (potentiometric): voltage divider
Analog output (voltage): 0.5...4.5 V; 0...10 V;
Analog output (current): 4...20 mA;
Digital output: CANopen

Electrical connections

M12 connector output

Resolution

Virtually infinite for potentiometric output;
Analog output 0.5...4.5V, 0...10V, 4...20mA: 12 bit;
CANopen output: 14 bit

Linearity

< ± 0.25% FS (1800mm to 4300mm);
< ± 0.5% FS (4800mm to 8300mm)

Repeatability

± 0.1% FS

Working temperature

-40...+85°C

Vibrations

20*g* between 10 Hz … 2000 Hz according to IEC 60068-2-6

Shock

Pulse on 3 axes; 50*g* 11 ms according to IEC 60068-2-27

Electromagnetic compatibility

2014/30/EU Electromagnetic Compatibility (EMC)

Life

250x10^3 cycles (strokes up to 5300 mm), otherwise 2000 km routes; typical speed 1m/s, typical acceleration 1*g*

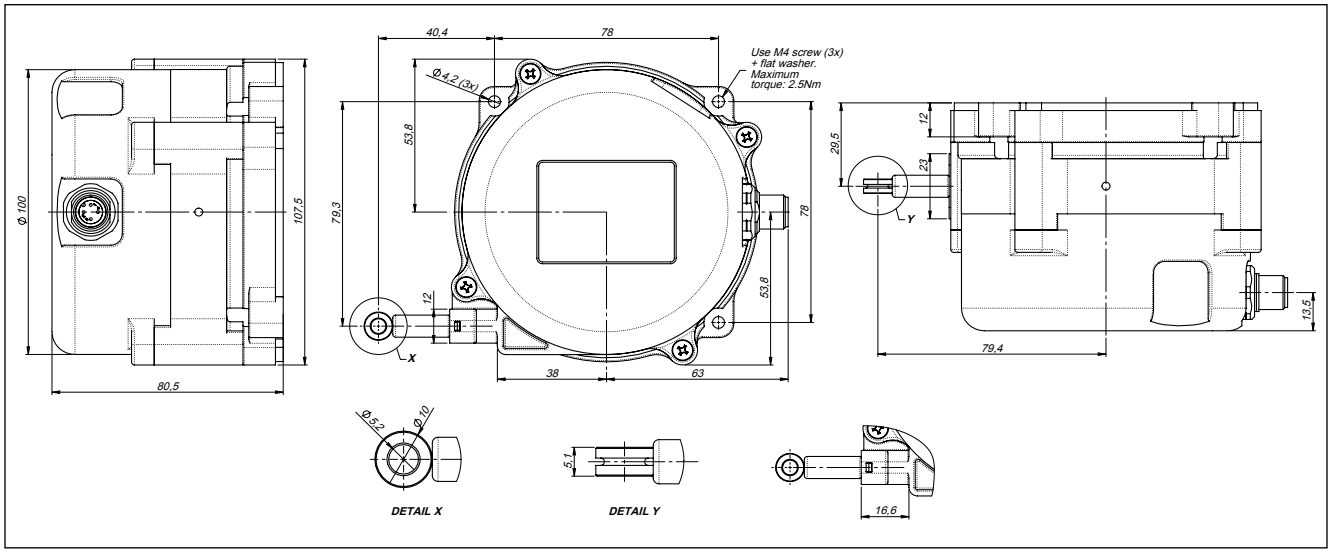
IP Protection Level

IP67 with female homologated connector mounted, tightening torque 0.6Nm + low strength threadlocker

Constructive material of transducer body and wire

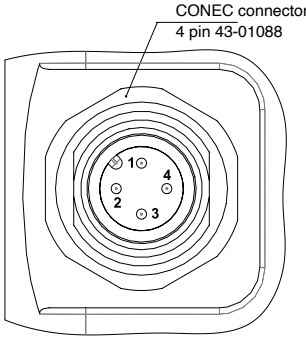
Transducer: PBT
Wire: AISI316 stainless steel, Ø0.85mm nylon coating

MECHANICAL DIMENSIONS



ELECTRICAL CONNECTIONS

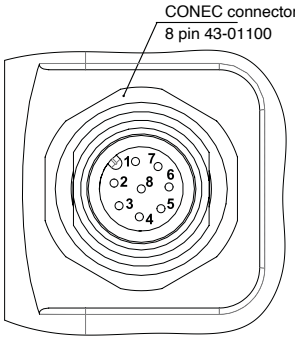
SINGLE VERSION



ANALOG CONNECTIONS
1. +SUPPLY
2. GROUND
3. OUTPUT
4. n.c.

CANopen CONNECTIONS
1. +SUPPLY
2. GROUND
3. CANH
4. CANL

REDUNDANT VERSION

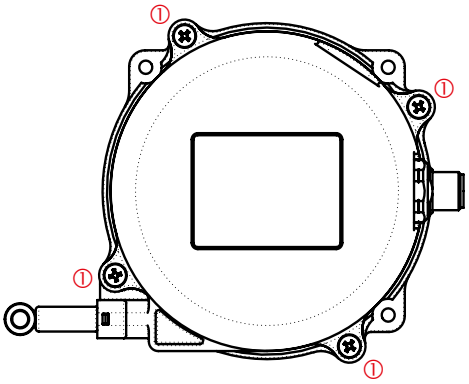


ANALOG CONNECTIONS
1. + SUPPLY
2. GROUND
3. OUTPUT 1
4. n.c.
5. + SUPPLY
6. GROUND
7. OUTPUT 2
8. n.c.

CANopen CONNECTIONS
1. + SUPPLY
2. GROUND
3. CANH 1
4. CANL 1
5. + SUPPLY
6. GROUND
7. CANH 2
8. CANL 2

ITEMS MARKED “n.c.” SHOULD NOT BE CONNECTED

HOW TO CHANGE THE DIRECTION OF THE CONNECTOR

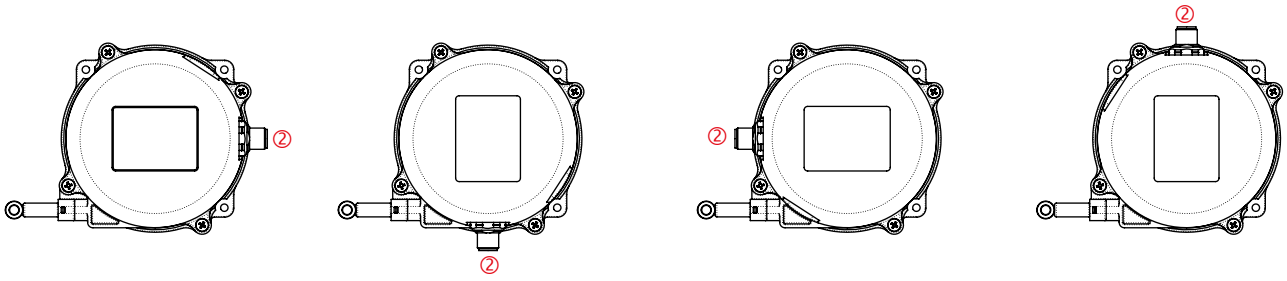


1 Carefully remove the 4 fixing screws from the closing cover shown in point ①.

2 Rotate the closing cover to the required position (4 possible configurations) ②.

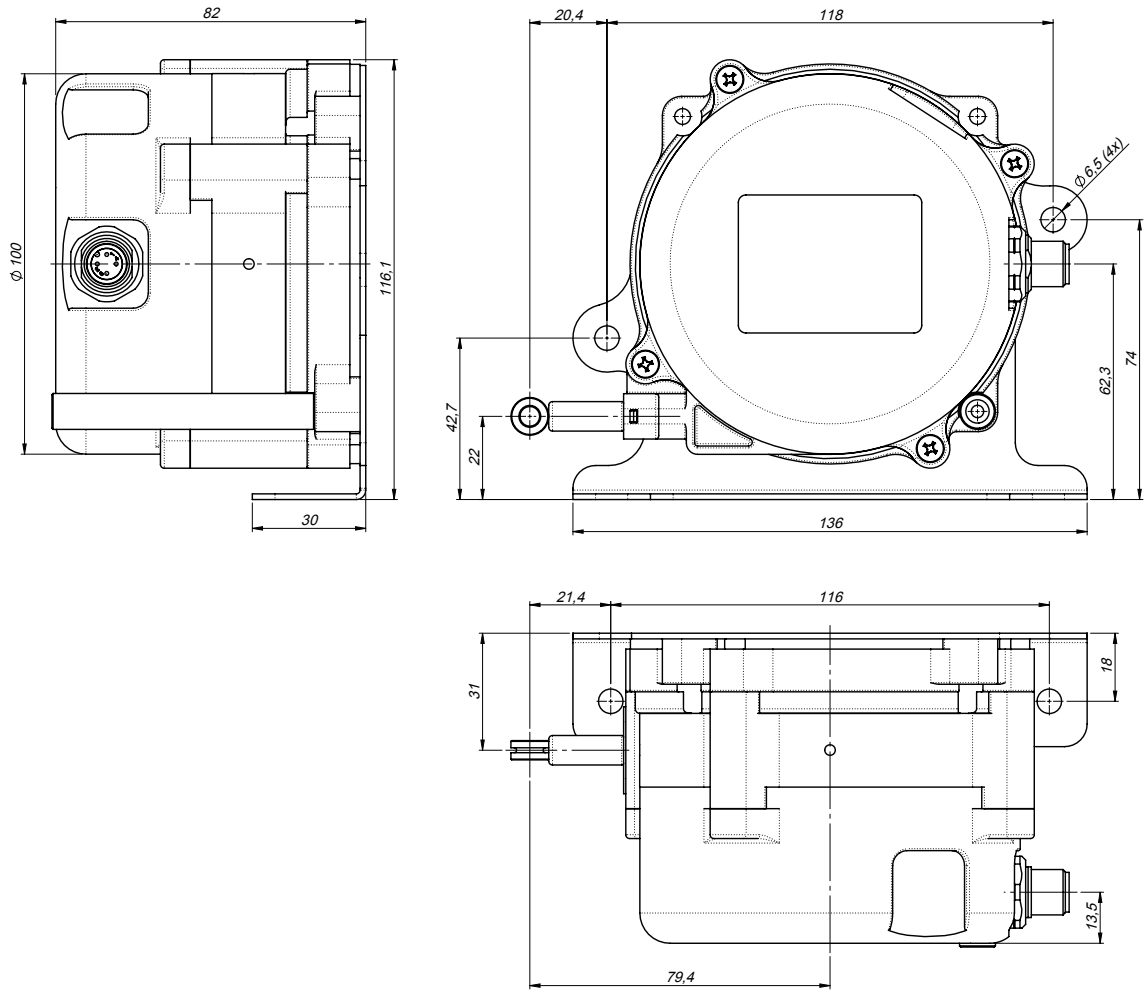
⚠ Attention!! When closing the cover, be careful not to twist and/or crush the connector wires.

Possible configurations for the connector output ②

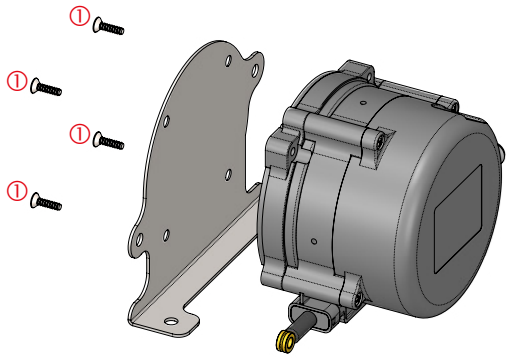


FIXING FLANGES (optional accessories to order)

FIXING FLANGE MODEL A - FLA033 (optional)

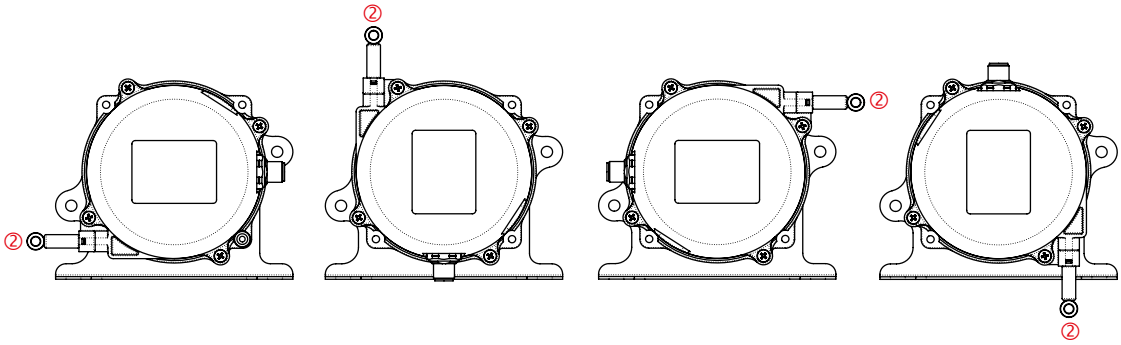


If the sensor is installed with a flange (A or B version) is it possible to modify the measurement wire output following these steps



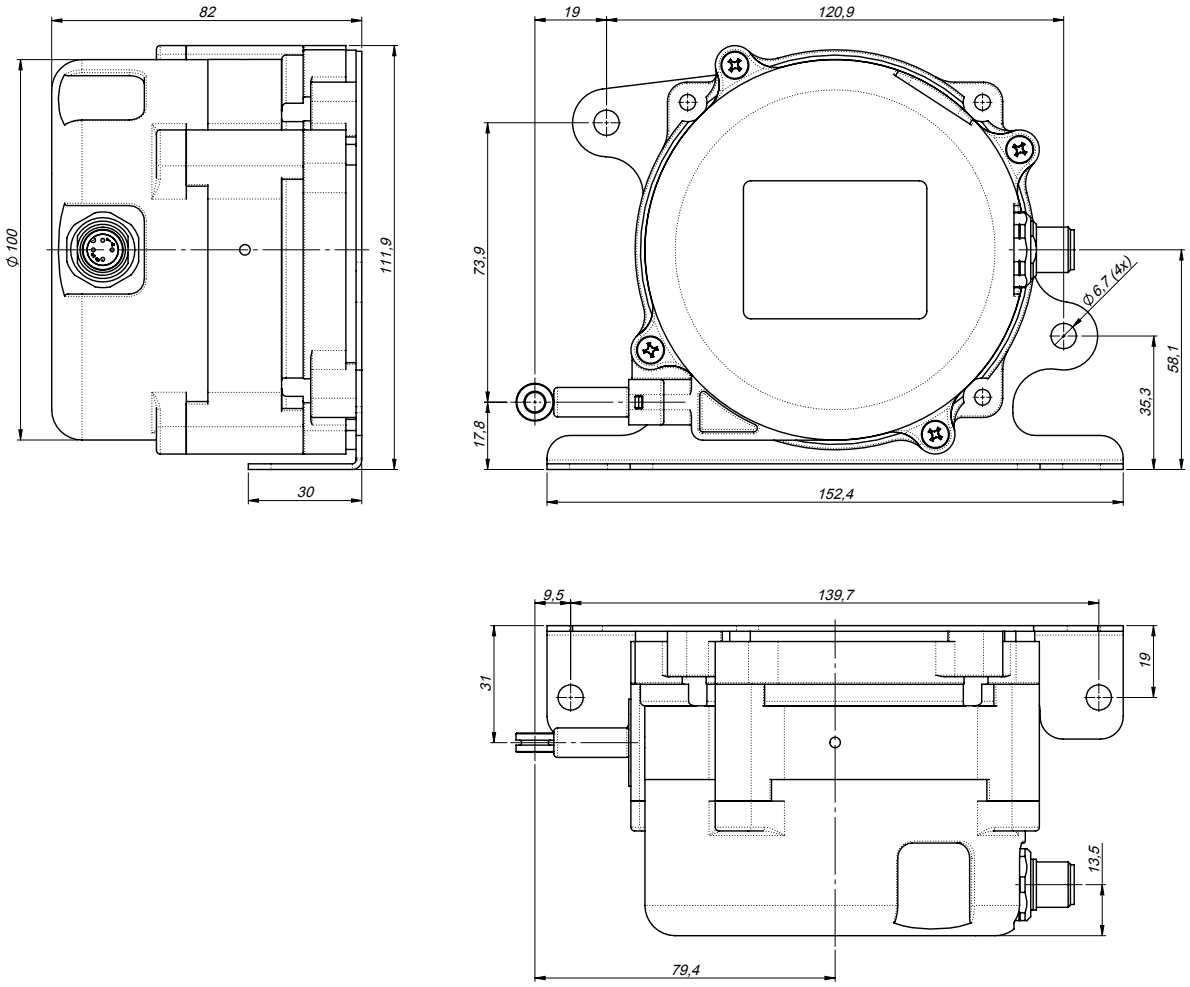
1. Carefully remove the 4 fixing screws from the flange shown in point ①.
2. Rotate the sensor to the required position: possible configurations are indicated at point ②.

Possible configurations ②



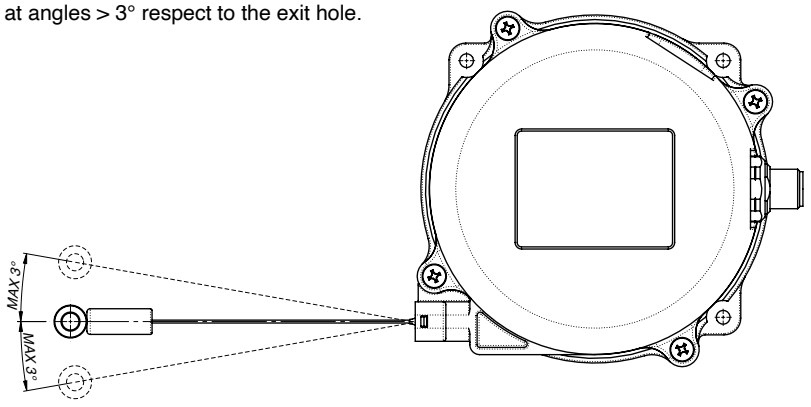
FIXING FLANGES (optional accessories to order)

FIXING FLANGE MODEL B - FLA034 (optional)

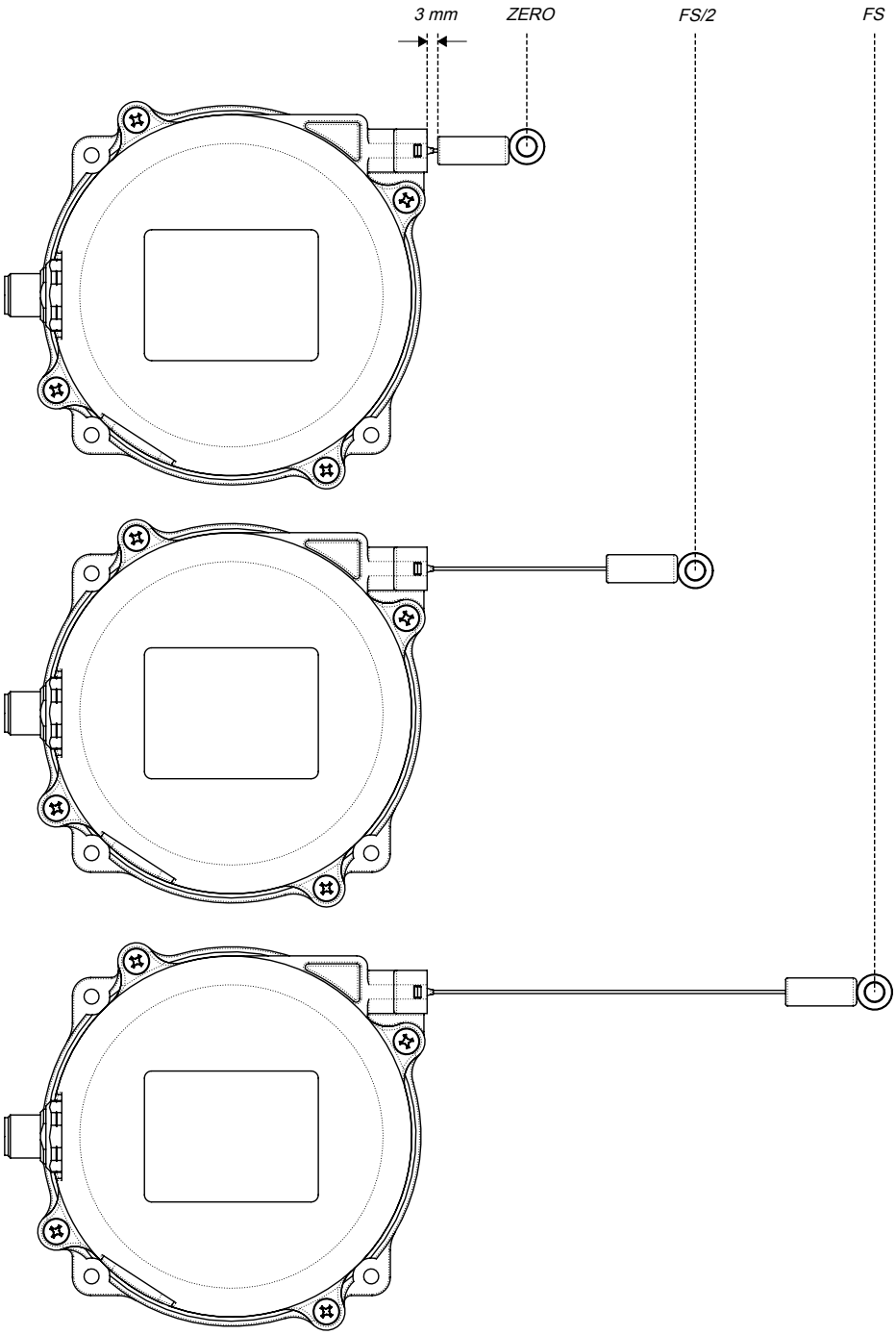


INSTALLATION

Do not extract the cable at angles > 3° respect to the exit hole.



OPERATING SPECIFICATIONS: OUTPUT SIGNAL



OUTPUT TYPE	ZERO	FS/2	FS
A0: Potentiometric - voltage divider	0…1% Vsupply		70…90% Vsupply
A1: 0.5…4.5 V	0.5 V	2.5 V	4.5 V
A2: 0...10 V	~25 mV	5 V	10 V
A3: 4...20 mA	4 mA	12 mA	20 mA
C1: CANopen	Digital code corresponding to 0 mm	Digital code corresponding to FS/2 mm	Digital code corresponding to FS mm

LOAD CONDITIONS:
0.5…4.5 V output and 0...10 V output: load resistance > 100 kΩ
4...20 mA output (powered at 10...15 V DC): maximum allowed load resistance is 200 Ω
4...20 mA output (powered at 15...36 V DC): maximum allowed load resistance is 500 Ω

ORDERING CODE

GSF - WIRE POTENTIOMETER TRANSDUCER

TRANSDUCER TYPE	
Wire transducer	**S**

ELECTRICAL CONNECTIONS	
M12 connector output	**M**

CIRCUIT TYPE	
Single	**S**
Redundant	**R**

MEASUREMENT RANGE	
measurement range (specify) Strokes: 1800mm, 2300mm, 3300mm, 4300mm, 4800mm, 5300mm, 6300mm, 7300mm, 8000mm, 8300mm	**XXXX**

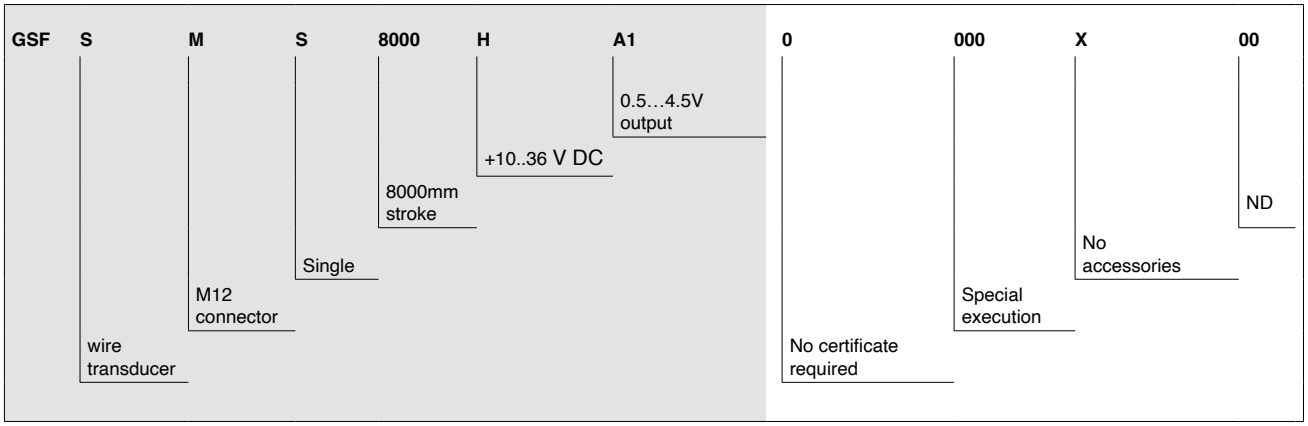
SUPPLY VOLTAGE	
up to +30 V DC (only for A0 output)	**L**
+10..36 V DC (for A1-A2-A3-C1 output)	**H**

OUTPUT TYPE	
Potentiometric - voltage divider- output	**A0**
0.5…4.5 V (powered at +10...36 V DC)	**A1**
0...10 V (powered at +11...36 V DC)	**A2**
4...20mA output (powered at +10...36 V DC)	**A3**
CANopen output (powered at +10...36 V DC)	**C1**

CERTIFICATES	
0	No certificate enclosed
L	Linearity curve enclosed

ACCESSORIES	
X	No accessory enclosed
A	FLA033: fixing flange, A version
B	FLA034: fixing flange, B version
C	CON293: 4-pin female mating connector M12x1; IP67 protection degree
D	CON469: 8-pin female mating connector M12x1; IP67 protection degree

Example of description: GSFSMS8000HA1 0000X00



GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice.

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