GSH-S (from 1800 up to 8300mm)

HALL-EFFECT WIRE POSITION TRANSDUCER
(CONTACTLESS)

Contactless *linear sensor - HALL EFFECT technology - for almost infinite life of the primary element.*

Excellent performance, high IP rating, shock and vibration resistance guarantee **sensor performance** *in typical mobile hydraulics applications.*

The **reduced dimension** *(65mm height) make it suitable for those applications where limited spaces are available for sensor installation.*

TECHNICAL SPECIFICATIONS

Measurement Range (FS)
Strokes 1800mm, 2300mm, 3300mm, 4300mm, 4800mm, 5300mm, 6300mm, 7300mm, 8000mm, 8300mm.

Supply voltage
+10...36 V DC (see ordering code for right supply voltage)

Output signal
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, cable output

Linearity factory verification 25°C
< ± 0.5% FS

Long term repeatability
< ±3% FS (for strokes 1800…3300 mm)
< ±2% FS (for strokes 4300…8300 mm)

Resolution
Analog output: 12 bit
Digital output: 0.1 mm

Working temperature
-40...+85°C

Vibrations
20*g* between 10…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 cycles
max 500x10^3 cycles, max speed 1m/s acc. max 0.5*g*;
250x10^3 cycles, 2 m/s acc. max 1*g*

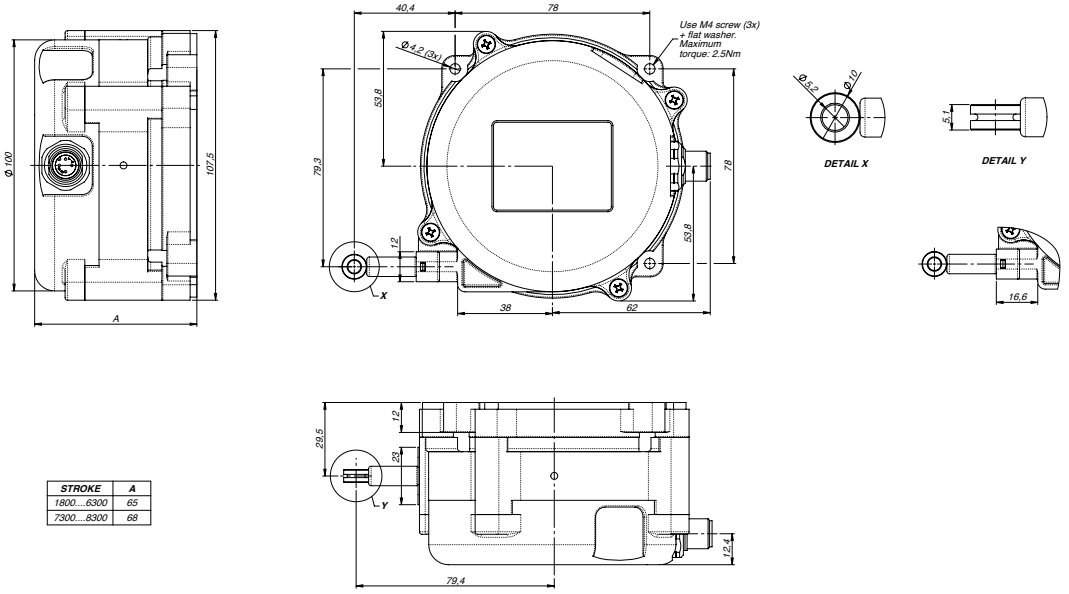
Typical speed
max 2m/s, typical 1m/s

Typical acceleration
1*g*

IP Protection Level
IP67 with female homologated connector mounted, tightening torque 0.6Nm + low strength threadlocker (GSH-M/N/O/P M12 connector version)
IP67 (GSH-F cable-PUR version)

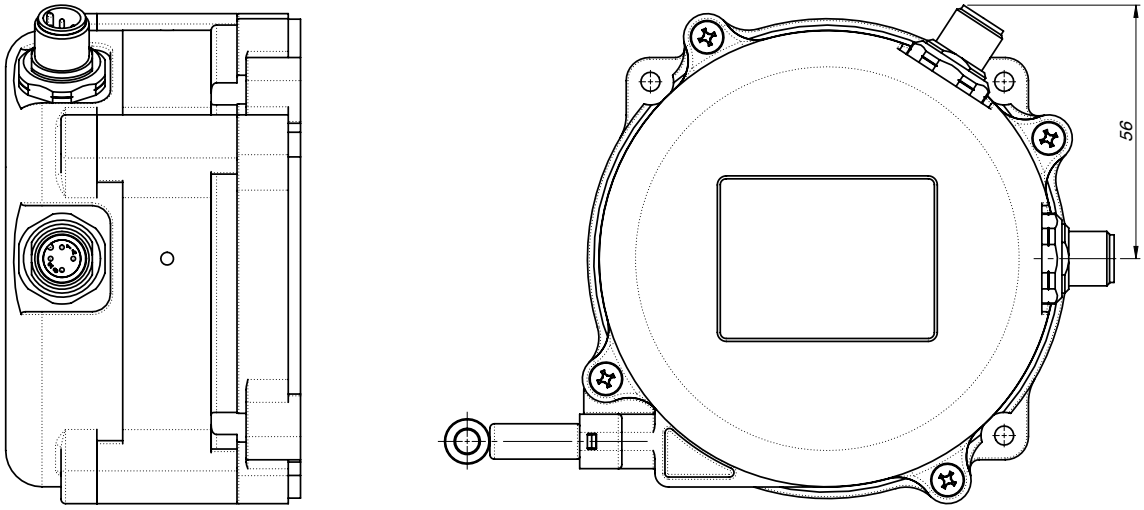
Constructive material of transducer body and wire
Transducer: PBT
Wire: AISI316 stainless steel, Ø0.85mm nylon coating

MECHANICAL DIMENSIONS - SINGLE / REDUNDANT / HALF - M12 1x VERSION



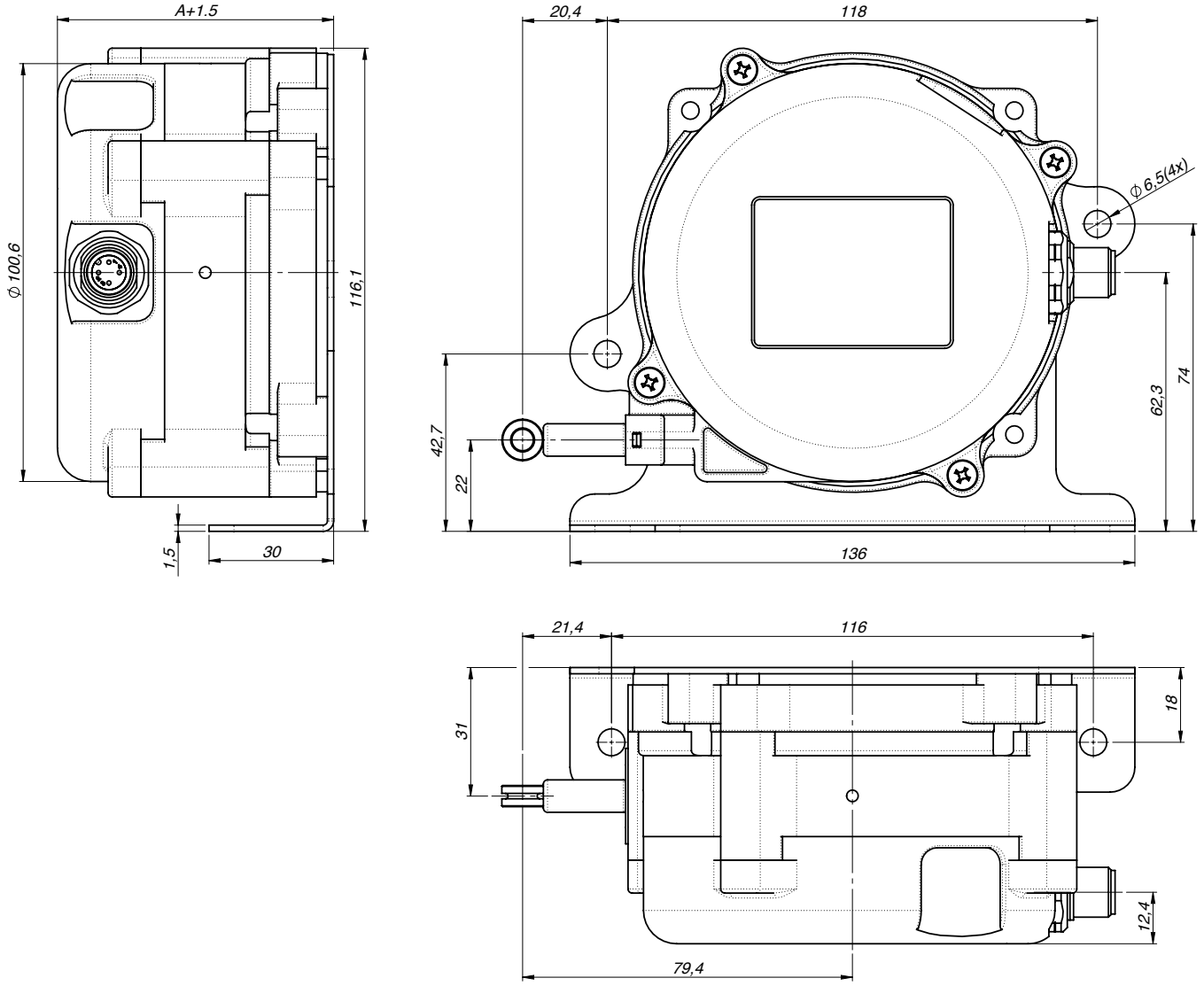
STROKE	A
1800....6300	65
7300....8300	68

MECHANICAL DIMENSIONS - REDUNDANT - M12 2x VERSION



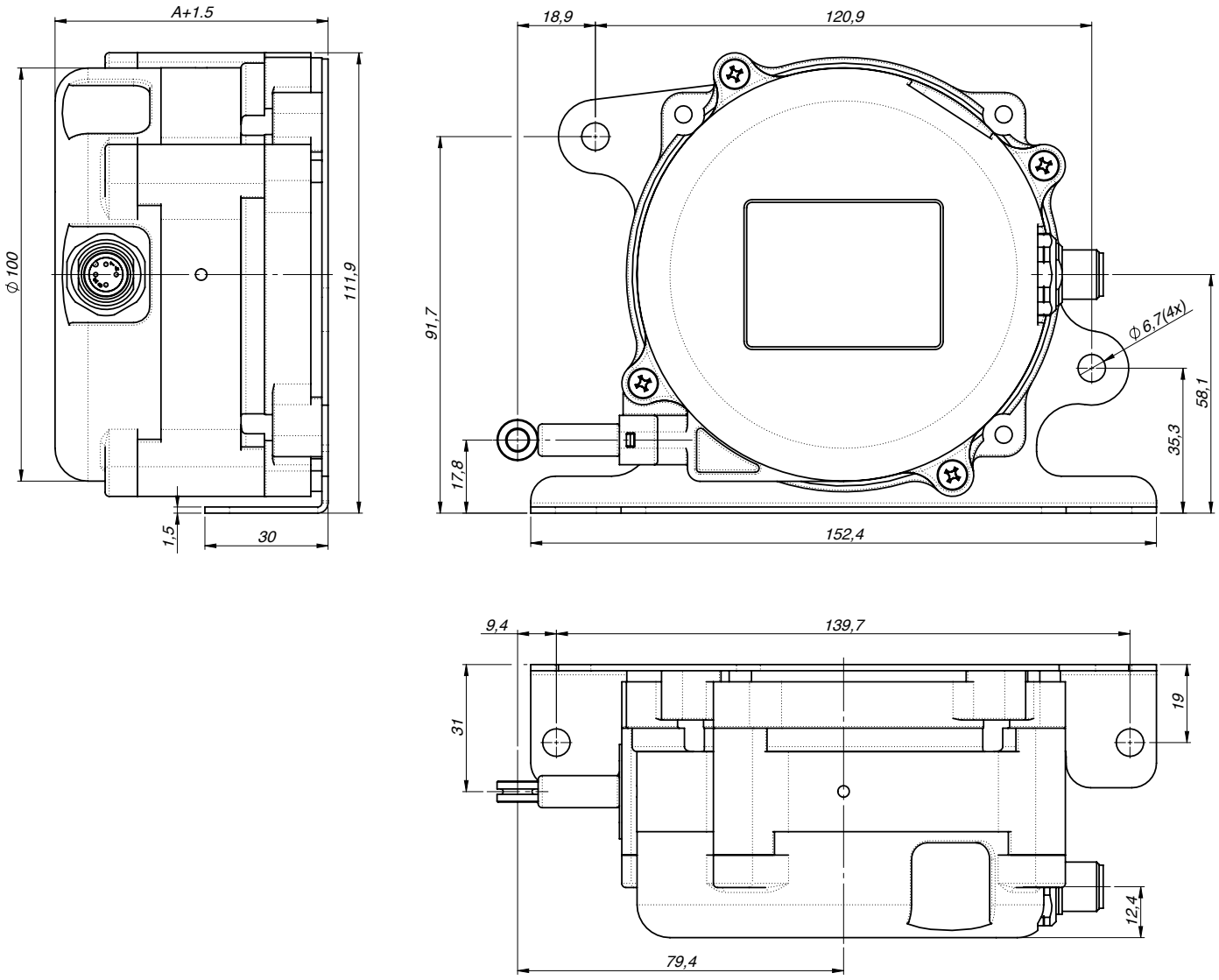
FIXING FLANGES (optional accessories to order)

FIXING FLANGE MODEL A - FLA033 (optional)

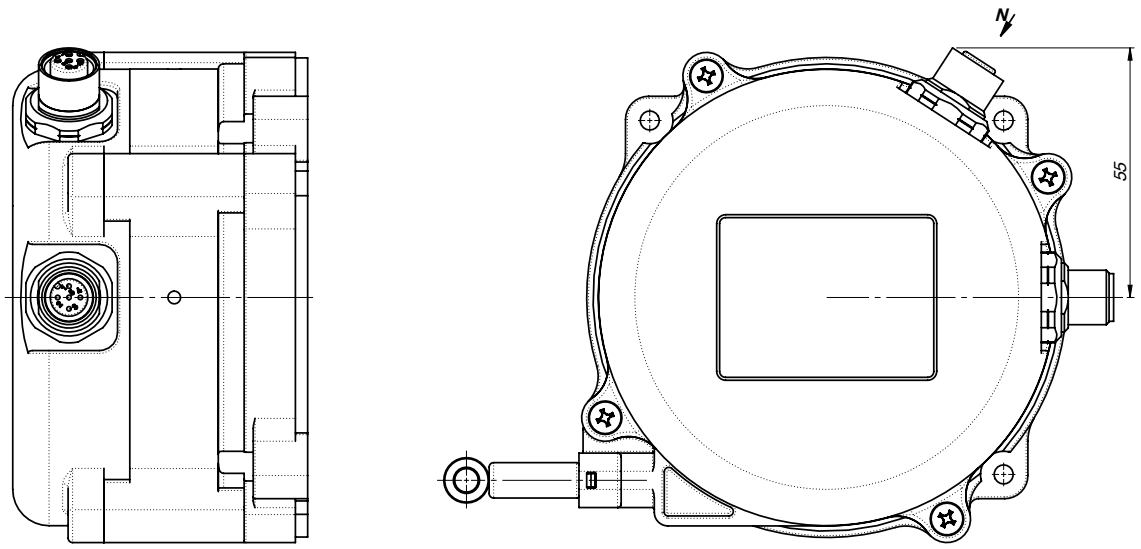


FIXING FLANGES (optional accessories to order)

FIXING FLANGE MODEL B - FLA034 (optional)



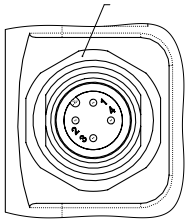
MECHANICAL DIMENSIONS - IN-OUT - M12 5P VERSION - CANopen



ELECTRICAL CONNECTIONS - M12 VERSION

SINGLE VERSION M-1-S
REDUNDANT VERSION M-1-R M-2-R

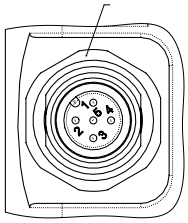
M12x1 4-pin male connector



ANALOG OUTPUT CONNECTIONS	CAN CONNECTIONS
1. +SUPPLY	1. +SUPPLY
2. GROUND	2. GROUND
3. OUTPUT	3. CAN-H
4. n.c.	4. CAN-L

SINGLE VERSION N-1-S
REDUNDANT VERSION N-1-R N-2-R

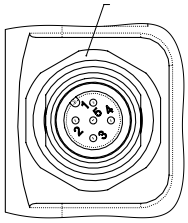
M12x1 5-pin male connector



ANALOG OUTPUT CONNECTIONS	CAN CONNECTIONS
1. +SUPPLY	1. n.c.
2. n.c.	2. +SUPPLY
3. GROUND	3. GROUND
4. OUTPUT	4. CAN-H
5. n.c.	5. CAN-L

SINGLE VERSION P-1-S
REDUNDANT VERSION P-1-R P-2-R
HALF REDUNDANT VERSION P-1-H

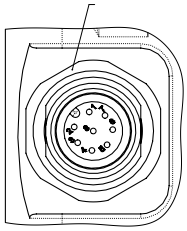
M12x1 5-pin male connector



CAN CONNECTIONS
1. GROUND
2. +SUPPLY
3. GROUND
4. CAN-H
5. CAN-L

REDUNDANT VERSION O-1-R

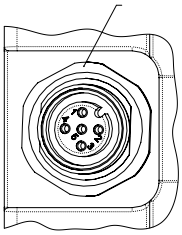
M12x1 8-pin male connector



ANALOG OUTPUT CONNECTIONS	CAN CONNECTIONS
1. + SUPPLY CH1	1. + SUPPLY CH1
2. GROUND CH1	2. GROUND CH1
3. OUTPUT CH1	3. CAN-H CH1
4. n.c	4. CAN-L CH1
5. + SUPPLY CH2	5. + SUPPLY CH2
6. GROUND CH2	6. GROUND CH2
7. OUTPUT CH2	7. CAN-H CH2
8. n.c.	8. CAN-L CH2

SINGLE/REDUNDANT/HALF-REDUNDANT IN-OUT VERSION P-3-(S/R/H)

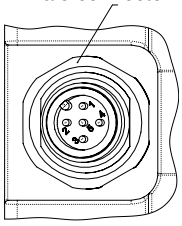
M12x1 5-pin female connector



CAN CONNECTIONS
1. GROUND
2. +SUPPLY
3. GROUND
4. CAN-H
5. CAN-L

VIEW FROM N

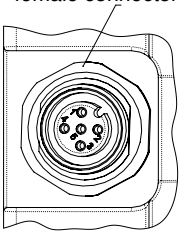
M12x1 5-pin male connector



CAN CONNECTIONS
1. GROUND
2. +SUPPLY
3. GROUND
4. CAN-H
5. CAN-L

SINGLE/REDUNDANT/HALF-REDUNDANT IN-OUT VERSION N-3-(S/R/H)

M12x1 5-pin female connector

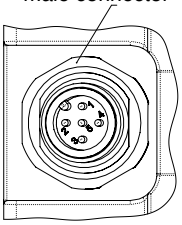


CAN CONNECTIONS
1. FLOATING
2. +SUPPLY
3. GROUND
4. CAN-H
5. CAN-L

PIN 1 male and female are internally connected

VIEW FROM N

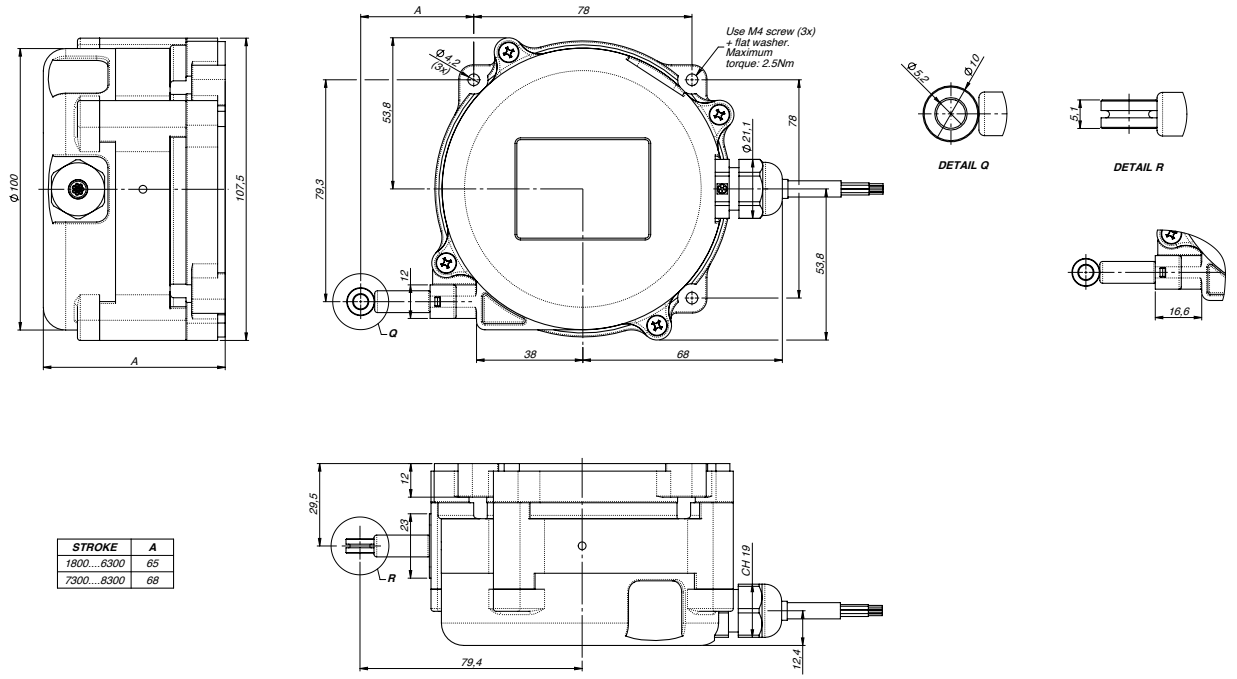
M12x1 5-pin male connector



CAN CONNECTIONS
1. FLOATING
2. +SUPPLY
3. GROUND
4. CAN-H
5. CAN-L

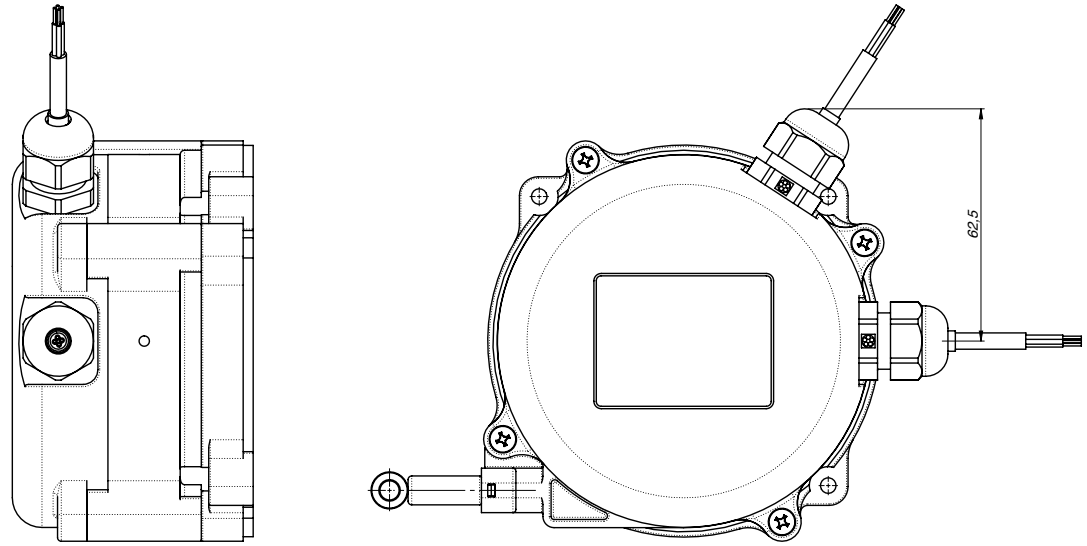
ITEMS MARKED “n.c.” MUST NOT BE CONNECTED

MECHANICAL DIMENSIONS - CABLE VERSION



STROKE	A
1800....6300	65
7300....8300	68

MECHANICAL DIMENSIONS - IN-OUT - CABLE VERSION - CANopen

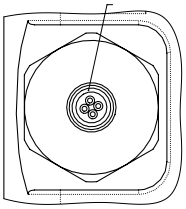


ELECTRICAL CONNECTION - CABLE VERSION

SINGLE VERSION **F-0-(S/H)**
IN-OUT VERSION **F-3-(S/R/H)**

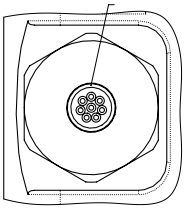
REDUNDANT VERSION **F-0-R**

IEC 60228 Cable
4 pole 0.34mm2
PUR OD 4.4mm



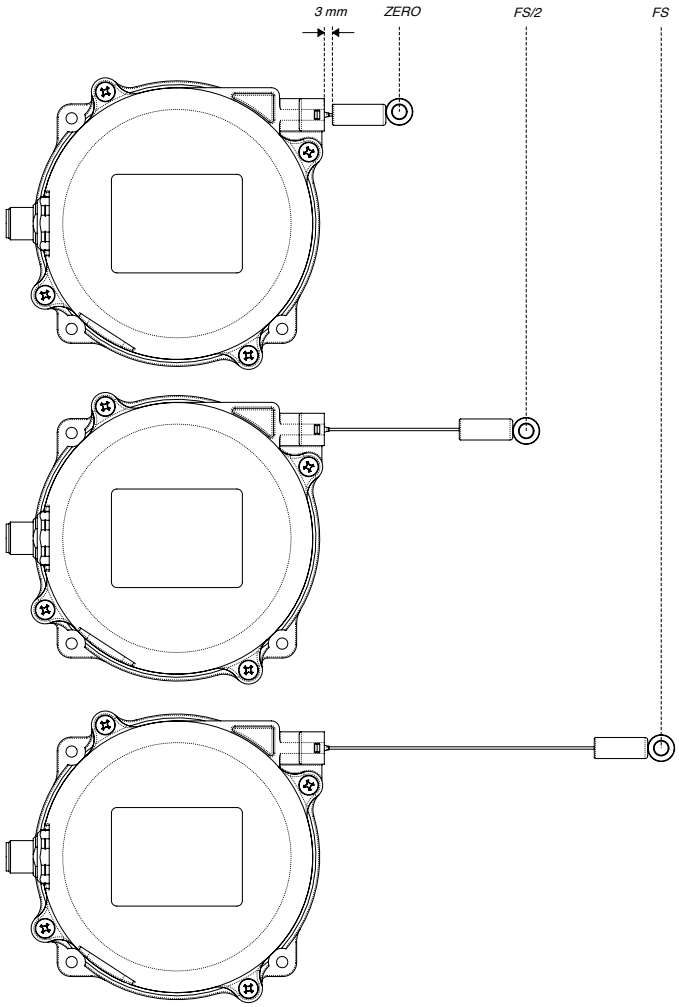
ANALOG OUTPUT CONNECTIONS		CAN CONNECTIONS	
RED	+SUPPLY	RED	+SUPPLY
BLACK	GROUND	BLACK	GROUND
BLUE	OUTPUT	BLUE	CAN-H
WHITE	n.c	WHITE	CAN-L

IEC 60228 Cable
8 pole 0.34mm2
PUR OD 5.8mm



ANALOG OUTPUT CONNECTIONS		CAN CONNECTIONS	
WHITE	+ SUPPLY CH1	WHITE	+ SUPPLY CH1
BROWN	GROUND CH1	BROWN	GROUND CH1
GREEN	OUT CH1	GREEN	CAN-H CH1
YELLOW	n.c.	YELLOW	CAN-L CH1
GREY	+ SUPPLY CH2	GREY	+ SUPPLY CH2
PINK	GROUND CH2	PINK	GROUND CH2
BLUE	OUT CH2	BLUE	CAN-H CH2
RED	n.c	RED	CAN-L CH2

SENSOR OUTPUT

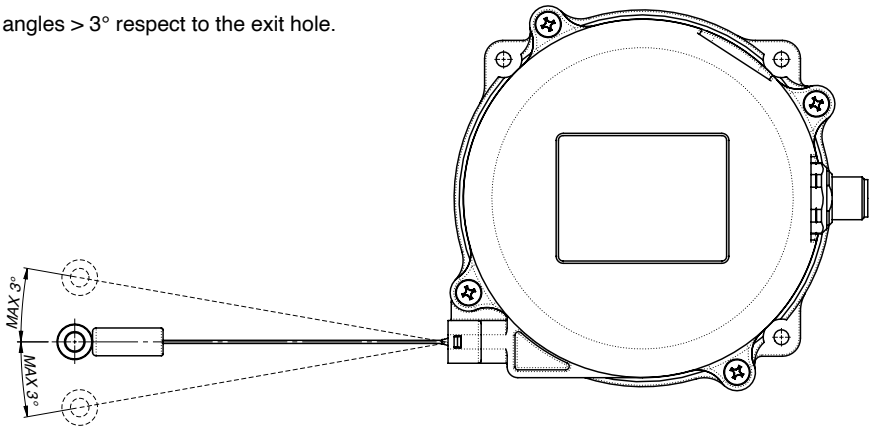


OUTPUT TYPE	ZERO	FS/2	FS
A1: 0.5…4.5V DC	0.5 V	2.5 V	4.5 V
A2: 0...10 V DC	~25 mV	5 V	10 V
A3: 4...20 mA	4 mA	12 mA	20 mA
C1: CANopen	Digital code corresponding to 0 mm	Digital code corresponding to FS/2 mm	Digital code corresponding to FS mm

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

INSTALLATION

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



ORDERING CODE

GSH - HALL-EFFECT WIRE POSITION TRANSDUCER

TRANSDUCER TYPE	
Wire transducer	**S**

ELECTRICAL CONNECTIONS	
M12 4P connector	**M**
M12 5P connector (CAN pin 1 n.c.)	**N**
M12 8P connector (only for redundant versions)	**O**
M12 5P connector (CAN pin 1 GROUND)	**P**
Cable output	**F**

CONNECTOR OPTIONS	
Cable output	**0**
1 male M12 4P or M12 5P connector (single/redundant version analog and CANopen output or half-redundant version only CANopen) or 1 male M12 8P connector (only for redundant version)	**1**
2 male M12 4P connectors (redundant version) or 2 male M12 5P connectors (redundant version)	**2**
1 male M12 5P connector and 1 female M12 5P connector or cable output (only for IN-OUT CANopen version)	**3**

CIRCUIT TYPE	
Single	**S**
Redundant	**R**
Half-redundant (only for CANopen output)	**H**

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

SUPPLY VOLTAGE	
+10...36 V DC	**H**

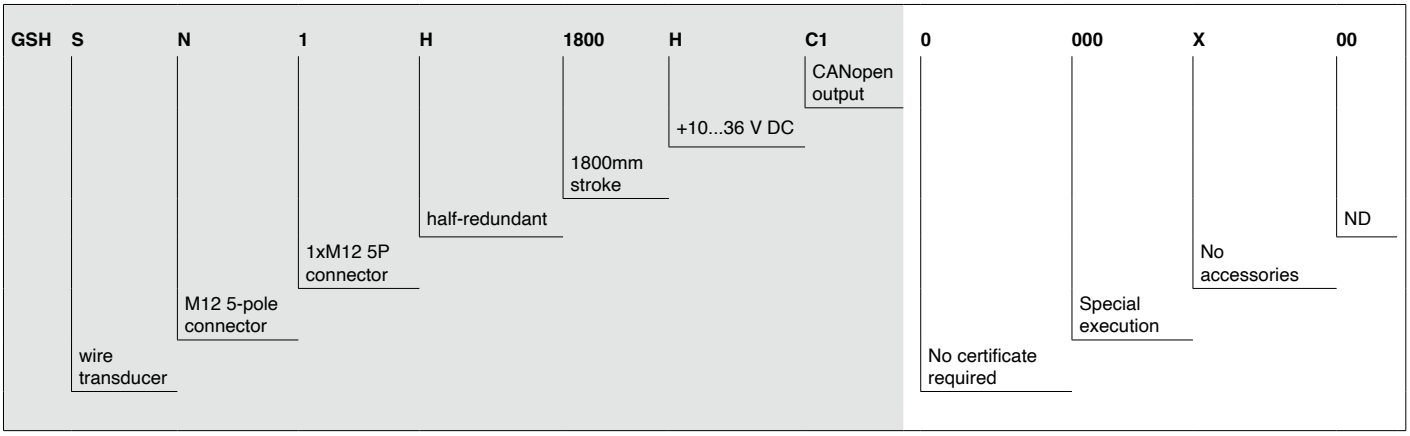
OUTPUT TYPE	
0.5…4.5 V (powered at +10..36 V DC)	**A1**
0…10 V (powered at +11..36 V DC)	**A2**
4…20 mA (powered at +10..36 V DC)	**A3**
CANopen (powered at +10..36 V DC)	**C1**

CERTIFICATES	
0	No certificate attached
L	Linearity curve attached

ACCESSORIES	
X	No accessories
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
E	**CON031**: 5-pin female mating connector M12x1; IP67 protection degree

CABLE LENGTH	
10	1 m cable
20	2 m cable
30	3 m cable
50	5 m cable
80	8 m cable
A0	10 m cable
.....	other lengths on request

Example of description: GSHSN1H1800HC1 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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