

 **WS58C**

Displacement sensor with
measurement length up to
2,500 mm

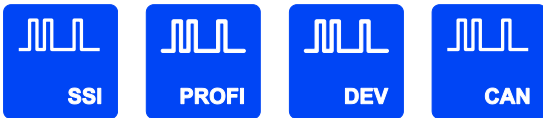


- Protection class up to IP64
- Aluminum housing
- With optical encoder

Product versions



Absolute encoder output



WS58C - Cable Extension Position Sensor
Version with absolute encoder output

Specifications

		Order options	
Measurement range	2500 mm	1	2500
Output for 12 bit per revolution (4096 steps / revolution)	0.04 mm (25 steps / mm)		
Output	Absolute encoder with synchronous serial output (SSI) Absolute encoder with Profibus interface Absolute encoder with Interbus interface Absolute encoder with DeviceNet interface Absolute encoder with CAN-interface Absolute encoder with CANopen interface	2	HSSI HPROF HINT HDEV HCAN HCANOP
Linearity	±0.05% f.s. (standard) ±0.01% f.s. (optional)	3	L01
Sensing device	Absolute encoder		
Material	Aluminum measuring cable: stainless steel		
Protection class	IP50 (IP64 optional), depending on encoder		
Cable fixing	M4 cable fixing Cable clip	4	M4 SB0
Connection	Depending on the type of encoder: connector or Bus cover		
Temperature range	-20 ... +85 °C		
Weight			
EMC	DIN EN 61326-1:2013		

Order code

WS58C	-	1	-	2	-	3	-	4
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Order example: WS58C – 2500 – HSSI – M4

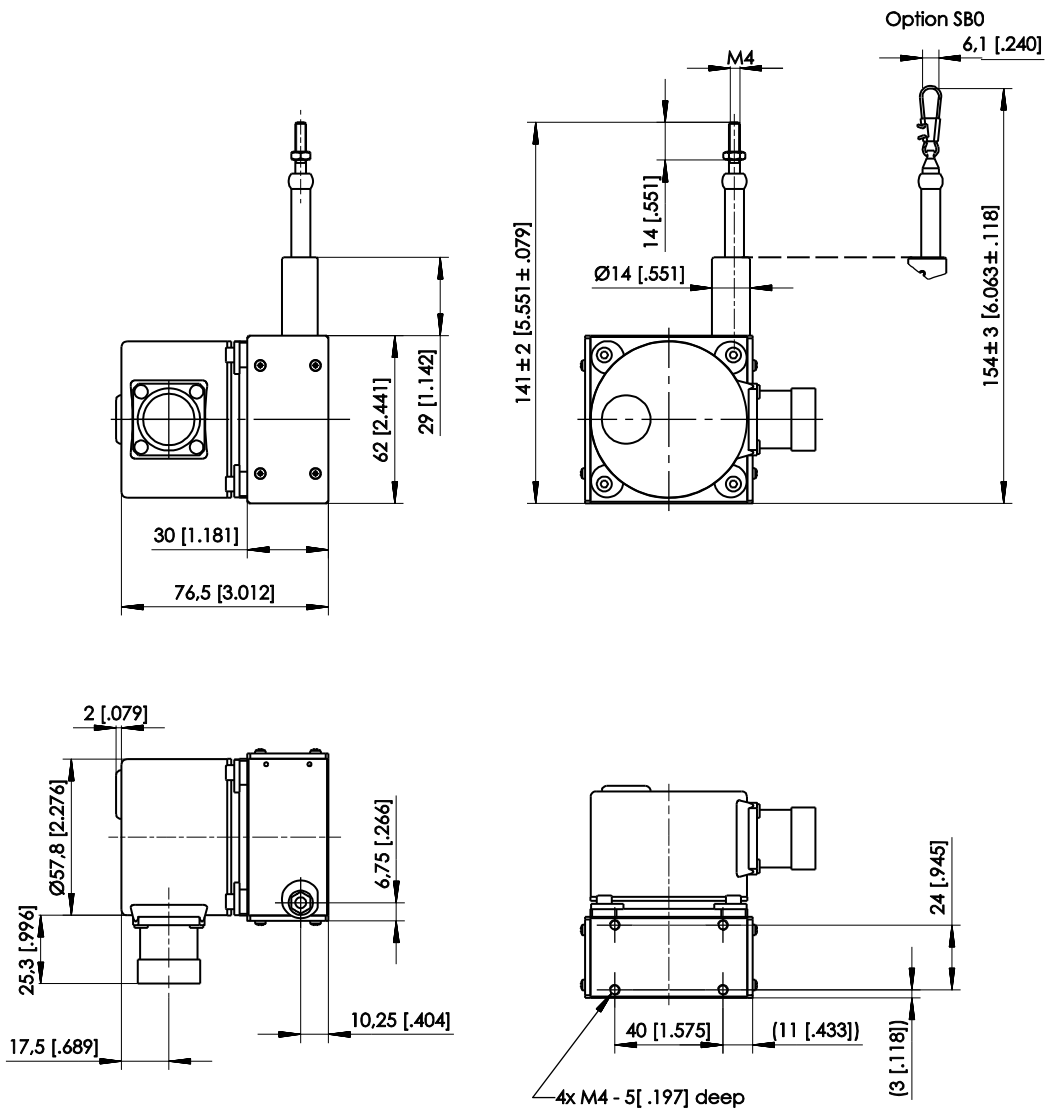
Accessories:

Mating connector CONN-CONIN-12F-G (see page 9)

Cable forces typical at = 20 °C	Measurement range [mm]	Maximum pull-out force [N]	Minimum pull-in force [N]
	2500	4.0	1.6

Dimensions

Measurement range 2500 mm, absolute encoder output HSSI

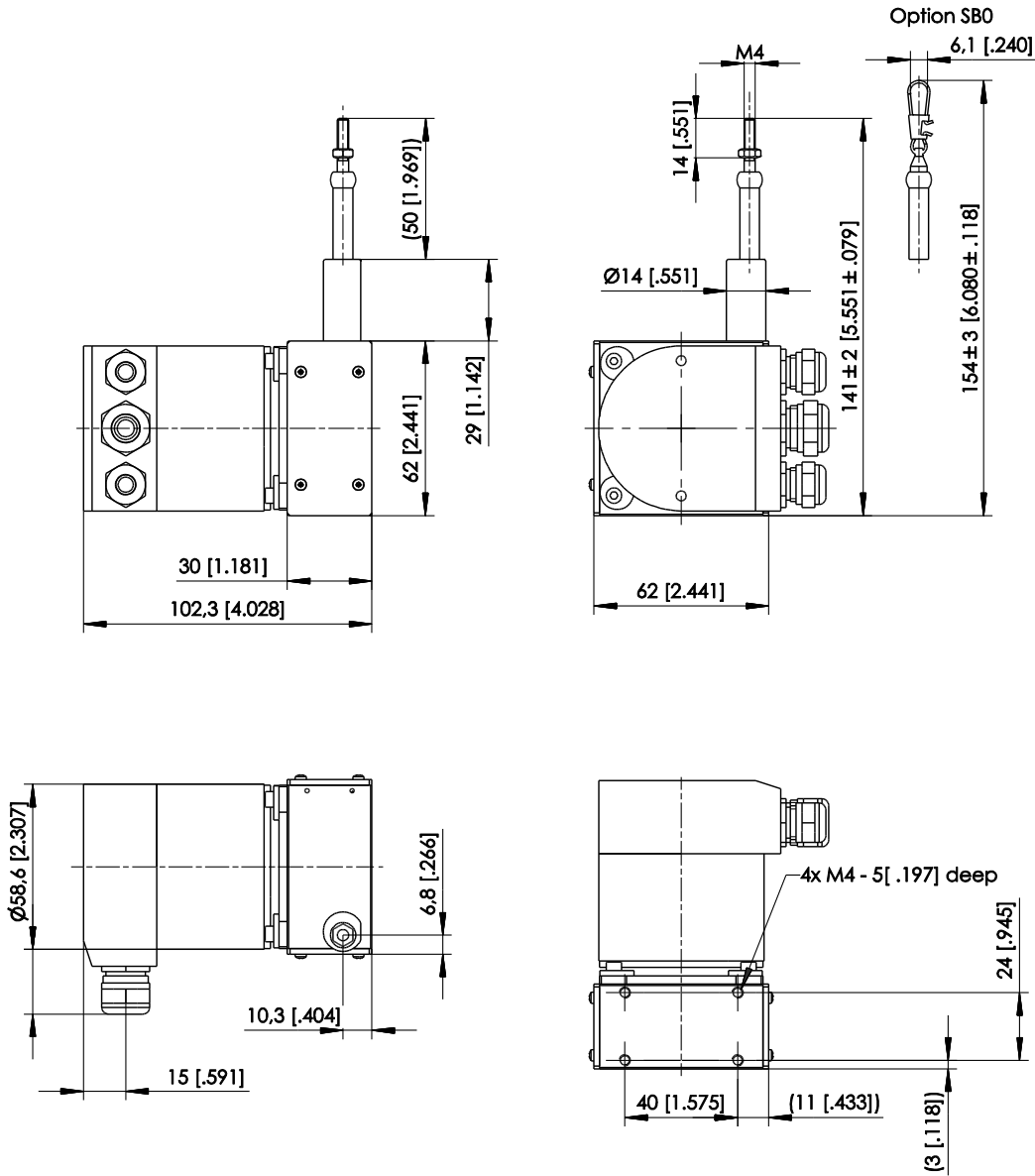


Dimensions in mm [inch]

Dimensions informative only.

For guaranteed dimensions consult factory.

Measurement range 2500 mm, absolute encoder output HPROF / HINT / HDEV / HCAN / HCANOP




Dimensions in mm [inch]

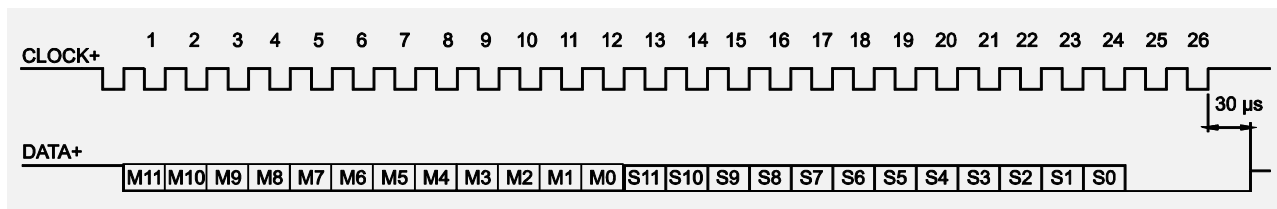
Dimensions informative only.

For guaranteed dimensions consult factory.

Output specifications Absolute encoder output

HSSI synchronous serial 	Excitation voltage	10 ... 30 V DC
	Excitation current	100 mA
	Interface	Standard-SSI
	Lines / drivers	Clock and data / RS422
	Code	Gray
	Resolution	12 + 12 bit
	3 dB cutoff frequency	500 kHz
	Control input	$\overline{\text{DIRECTION}}$
	Preset key	Zero adjustment with optical response
	Alarm output	Alarm bit (SSI option), warning bit
	Status LED	Green = OK, red = alarm
	Connection	12 pin male socket

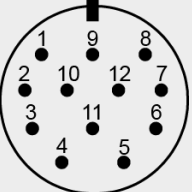
Data format




(Mx = Multiturn bits, Sx = Singleturn bits)

Transmission rate


Cable length	Baud rate	Note:
< 50 m	< 400 kHz	Extension of the cable length will reduce the maximum transmission rate.
< 100 m	< 300 kHz	
< 200 m	< 200 kHz	
< 400 m	< 100 kHz	

Signal wiring	Signal	Connector pin no.	Cable color
CONN-CONIN-12F-G  View to the sensor connector	Excitation +	8	white
	Excitation GND	1	brown
	CLOCK	3	yellow
	$\overline{\text{CLOCK}}$	11	green
	DATA	2	pink
	$\overline{\text{DATA}}$	10	grey
	Direction*	5	blue
	0 V Signal output	12	black

* unconnected or Excitation + = cw increasing code
0 V = cw decreasing code

HPROF Profibus 	Interface	RS485
	Excitation voltage	10 ... 30 V DC
	Excitation current	250 mA
	Protocol	Profibus DP with encoder profile C2
	Resolution	12 (10 ... 14) + 12 bit
	Output code	Binary
	Baud rate	Automatically selected between 9,6 kBaud and 12 MBaud
	Programmability	Resolution, preset, direction
	Integrated special functions	Velocity, acceleration, operating time
	Bus terminating resistor	Selectable via DIP switch
	Connection	Bus cover with T manifold
	EMC	Din EN 61326: Class A

Signal wiring	Output signals	Cable terminal no. (bus cover)
	U _b in	1
	0 V in	2
	U _B out	3
	0 V out	4
	B in	5
	A in	6
	B out	7
	A out	8

HDEV DeviceNet 	Interface	CAN highspeed according to ISO/DIS 11898 CAN specification 2.0 A (11 bit identifier)
	Excitation voltage	10 ... 30 V DC
	Excitation current	250 mA
	Protocol	DeviceNet according rev. 2.0, programmable encoder
	Resolution	12 (10 ... 14) + 12 bit
	Output code	Binary
	MAC-ID	Selectable via DIP switch
	Date refresh	Every 5 ms
	Baud rate	Selectable via DIP switch: 125 kBaud, 250 kBaud, 500 kBaud
	Programmability	Resolution, preset, direction
	Bus terminating resistor	Selectable via DIP switch
	Connection	Bus cover with T manifold
	EMC	DIN EN 61326-1:2013


Recommended transmission

Characteristic impedance	135 ... 165 Ω (3 ... 20 MHz)
Operating capacity	< 30 pF
Loop resistance	< 110 Ω/km
Wire diameter	> 0.63 mm
Wire width	> 0.34 mm ²

Transmission rate

Segment length	Kbit/s
500 m	125
250 m	250
100 m	500

Signal wiring	Output signals	Cable terminal no. (bus cover)
	U _b in	1
	0 V in	2
	CAN-L	3
	CAN-H	4
	Drain	5
	Drain	6
	CAN-H	7
	CAN-L	8
	0 V out	9
	U _b out	10

HCAN / HCANOP CANopen / CAN Layer 2 	Interface	CAN highspeed according to ISO/DIS 11898
	Excitation voltage	10 ... 30 V DC
	Excitation current	250 mA
	Protocol	CANopen according DS301 with encoder profile DSP406, programmable encoder according class C2
	Resolution	12 (10 ... 14) + 12 bit
	Output code	Binary
	Data refresh	Every millisecond (selectable), on request
	Baud rate	Selectable 10 up to 1000 kbit/s
	Base identifier	Selectable via DIP switch
	Programmability	CANopen: direction, resolution, preset, offset CAN L2: direction, limit values
	Integrated special functions	CANopen: velocity, acceleration, rotary axis, limit values CAN L2: direction, limit values
	Connection	Bus cover with T manifold
	EMC	DIN EN 61326-1:2013

Signal wiring	Output signals	Cable terminal no. (bus cover)
	U _b in	1
	0 V in	2
	CAN in – (dominant L)	3
	CAN in + (dominant H)	4
	CAN GND in	5
	CAN GND out	6
	CAN out + (dominant H)	7
	CAN out – (dominant L)	8
	0 V out	9
	U _b out	10

Accessories
Plug-in connector CONIN, 12 pin (straight coupling)

Order code:

CONN-CONIN-12F-G

Cable diameter
max. 6 ... 8 mm

