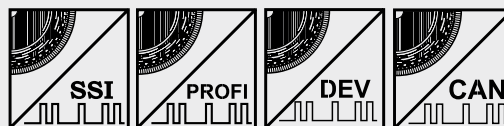


# POSIWIRE® WS58C Absolute Encoder Output



## Very compact position sensor

- Measuring range 0 ... 2500 mm
- With absolute encoder output
- High precision linearity up to  $\pm 0.01\%$  full scale



Specifications		
Output		See order code
Resolution for 12 bit/revolution (4096 steps/revolution)		0.04 mm Distance/revolution 163.84 mm
Linearity		$\pm 0.05\%$ f. s.; $\pm 0.01\%$ f. s. as option
Sensing device		Absolute encoder
Material		Aluminium and stainless steel; cable: stainless steel
Protection class		IP50 (IP64 as option), depend on the encoder
Connection		Depend on the encoder type: connector or bus cover
Weight		0.6 kg max., depending on the encoder
EMC, temperature		Refer to output specification

## Order code WS58C

WS58C - [ ] - [ ] - [ ] - [ ]

### Model name

### Measurement range (in mm)

2500 (smaller measurement ranges included)

### Output

- HSSI = Absolute encoder with synchronous serial interface (SSI)
- HPROF = Absolute encoder with Profibus interface
- HDEV = Absolute encoder with DeviceNet interface
- HCAN = Absolute encoder with CAN interface
- HCANOP = Absolute encoder with CANopen interface

### Linearity (option)

L01 =  $\pm 0.01\%$

### Cable fixing

- M4 = M4 cable fixing
- SB0 = Cable clip

Order code mating connector

HSSI: **CONN-CONIN-12F-G**

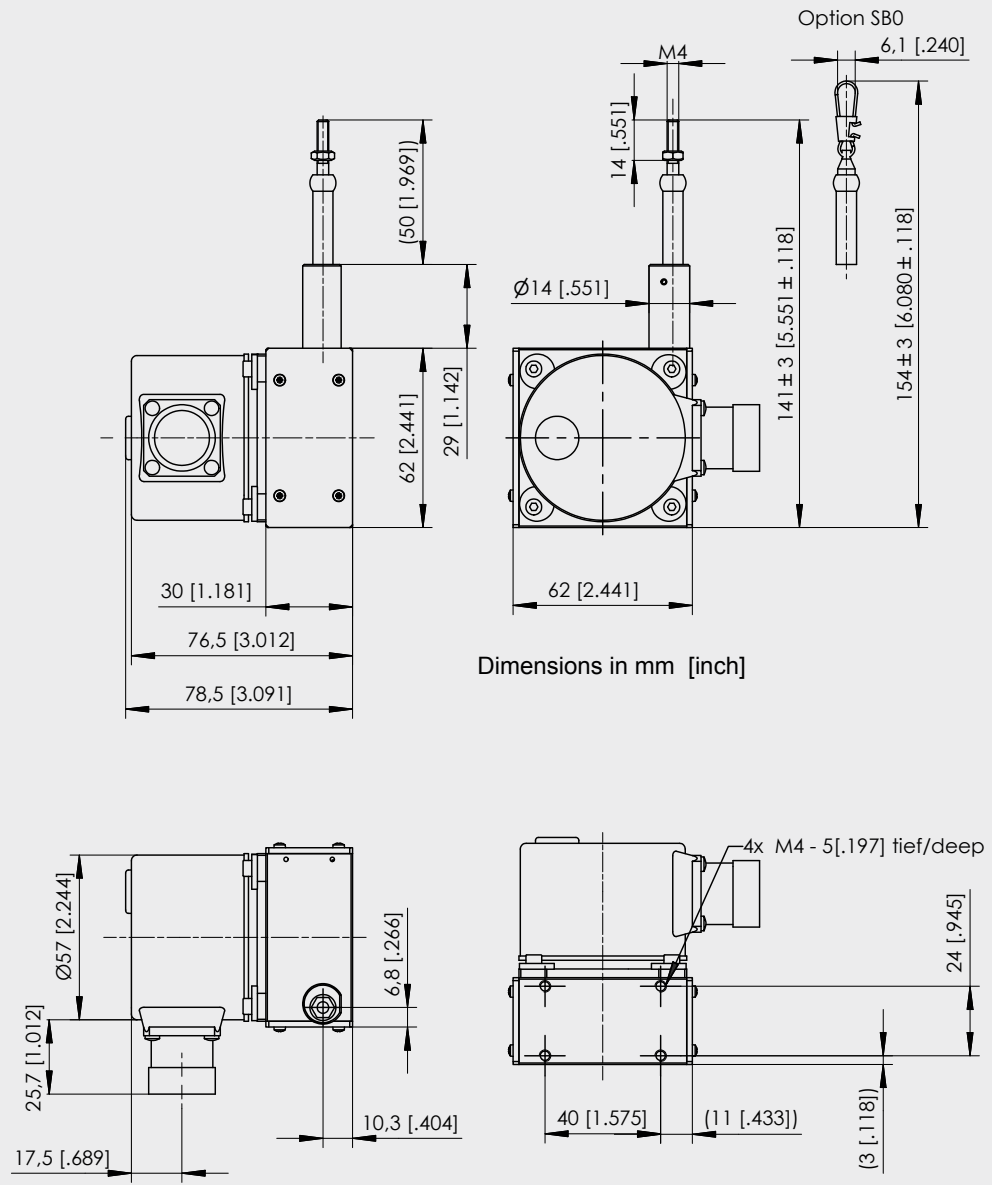
Order example: **WS58C - 2500 - HSSI - M4**

**POSIWIRE®**  
**WS58C**  
**Absolute Encoder Output**



Cable forces typical at 20 °C	Range	Max. pull-out force	Min. pull-in force
	[mm]	[N]	[N]
	2500	4.0	16

**Outline drawing  
HSSI**

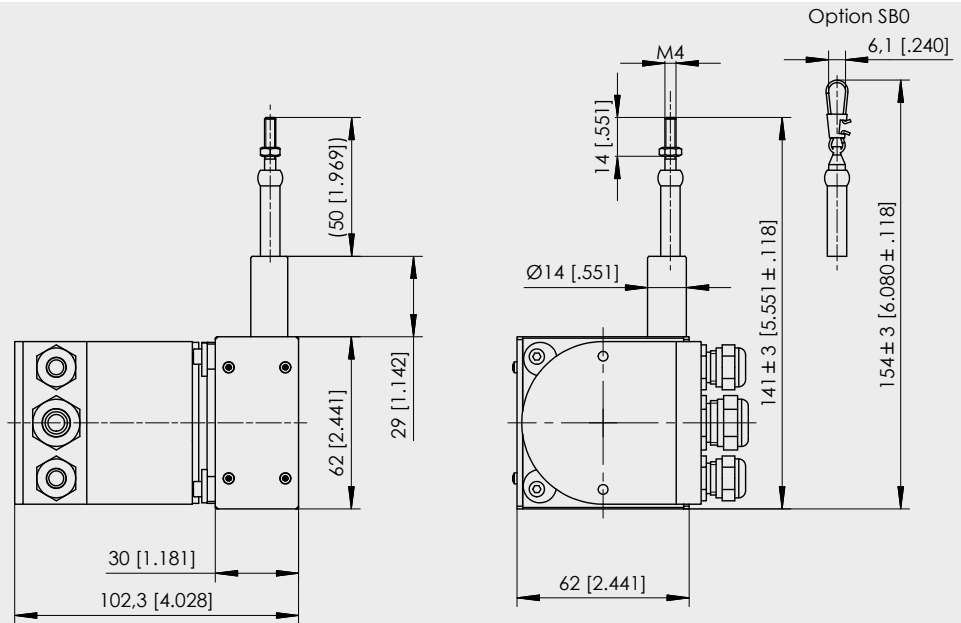


Dimensions informative only.  
For guaranteed dimensions consult factory.

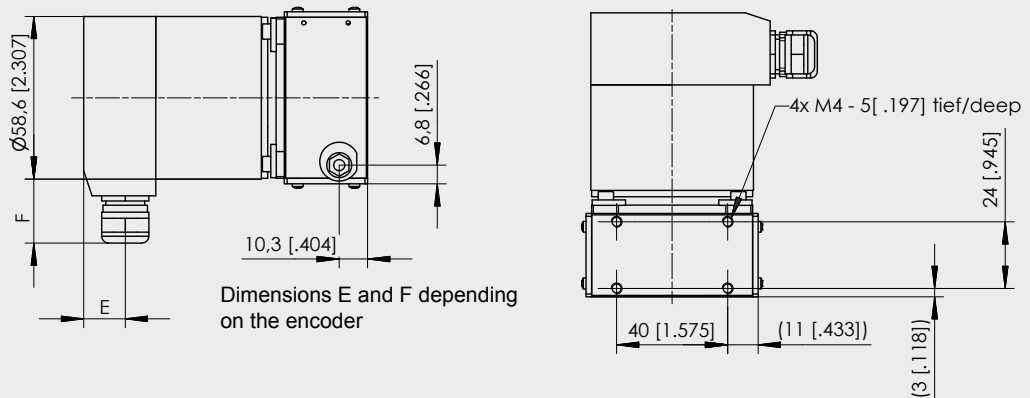
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**WS58C**  
**Absolute Encoder Output**



Outline drawing  
 HPROF/HDEV/  
 HCAN/HCANOP



Dimensions in mm [inch]



Dimensions informative only.  
 For guaranteed dimensions consult factory.

# POSIWIRE®

## HSSI

### Absolute SSI Encoder



<b>Signal conditioner</b> <b>HSSI</b> Absolute encoder 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	Cable or 12 pin male socket

<b>Data format</b>	<b>Resolution</b>	<b>Clock</b>												
		T1	T2	T3	...	T12	T13	...	T21	T22	T23	T24	T25	T26
		<b>Data bits</b>												
24 bit	M11	M10	M9	...	M0	S11	...	S3	S2	S1	S0	0		

Mx = multiturn bits, Sx = singleturn bits

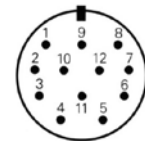
<b>Transmission rate</b>	<b>Cable length</b>	<b>Baud rate</b>	<b>Note:</b> Extension of the cable length will reduce the maximum transmission rate.
	< 50 m	< 400 kHz	
	< 100 m	< 300 kHz	
	< 200 m	< 200 kHz	
	< 400 m	< 100 kHz	

<b>Signal wiring</b>	<b>Signal name</b>	<b>Color</b>	<b>Connector pin no.</b>
	Excitation +	White	8
	Excitation GND (0 V)	Brown	1
	CLOCK	Yellow	3
	$\overline{\text{CLOCK}}$	Green	11
	DATA	Pink	2
	$\overline{\text{DATA}}$	Grey	10
	$\overline{\text{Direction}}$ *	Blue	5
	0 V Signal output	Black	12

\* Excitation + = cw increasing code, 0 V = cw decreasing code

### Connection

View to sensor  
connector



CONN-CONIN-12F

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## HPROF

### Absolute Profibus Encoder



#### Interface HPROF

Absolute encoder  
Profibus



Excitation voltage	10 ... 30 V DC
Excitation current	250 mA
Interface	RS485
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	EN 61326: class A

#### Signal wiring

Signal name	Cable terminal no. (bus cover)
U <sub>B</sub> in	1
0V in	2
U <sub>B</sub> out	3
0V out	4
B in	5
A in	6
B out	7
A out	8

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## HINT

### Absolute Interbus Encoder




<b>Interface HINT</b> Absolute encoder Interbus 	Excitation voltage	10 ... 30 V DC
	Excitation current	250 mA
	Interface	Interbus, ENCOM profile K3 (configurable), K2
	Output code	32 Bit binary
	Baud rate	500 kBaud
	Data refresh	Every 600 µs
	Resolution	12 (10 ... 14) + 12 bit
	Programmability	Direction, preset, offset, resolution
	Connection	Bus cover with T manifold
	EMC	EN 50081-2, EN 50082-2

<b>Data format</b> Interbus K2/K3		Differential signals (RS485) ENCOM profile K3, K2, 32 Bit, binary process data				
	DT-Format	Supi address	0	1	2	3
	(according to the Phoenix company)	Byte No.	3	2	1	0
	ID code K2	36 H (= 54 dec.)				
	ID code K3	37 H (= 55 dec.)				

Signal wiring	Signal name	Cable terminal no. (bus cover)
		U <sub>B</sub> +
	GND	2
	DI1	3
	$\overline{DI1}$	4
	DO1	5
	$\overline{DO1}$	6
	DO2	7
	$\overline{DO2}$	8
	DI2	9
	$\overline{DI2}$	10
	RBST	11
	GND	12

**POSIWIRE®**  
**HDEV**  
**Absolute DeviceNet Encoder**



<b>Interface HDEV</b> Absolute encoder DeviceNet 	Excitation voltage	10 ... 30 V DC
	Excitation current	250 mA
	Interface	CAN highspeed according to ISO/DIS 11898 CAN specification 2.0 A (11 bit identifier)
	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	EN 50081-2, EN 50082-2

<b>Recommended transmission</b>	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 <sup>2</sup>

<b>Transmission rate</b>	<b>Segment length</b>	<b>Kbit/s</b>
	500 m	125
	250 m	250
	100 m	500

<b>Signal wiring</b>	<b>Signal name</b>	<b>Cable terminal no. (bus cover)</b>
	U <sub>b</sub> in	1
	0V in	2
	CAN-L	3
	CAN-H	4
	Drain	5
	Drain	6
	CAN-H	7
	CAN-L	8

**POSIWIRE®**  
**HCAN/HCANOP**  
**Absolute CAN / CANopen Encoder**



**Interface**  
**HCAN/HCANOP**  
 Absolute encoder  
 CANopen/CAN Layer 2



Excitation voltage	10 ... 30 V DC
Excitation current	250 mA
Interface	CAN highspeed according to ISO/DIS 11898
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	EN 50081-2, EN 50082-2

**Signal wiring**

Signal name	Cable terminal no. (bus cover)
U <sub>B</sub> in	1
0V 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
0V out	9
U <sub>B</sub> out	10