























# POSIWIRE®

## ADSI16

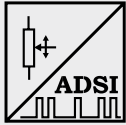
### A/D Converted SSI Output

- Resolution 16 bit, synchronous serial data transmission/SSI
- Optional available with 12 bit (ADSI) or 14 bit (ADSI14) resolution
- No loss of data at power down
- Easy to connect to PLC's with SSI input circuitry

#### Description

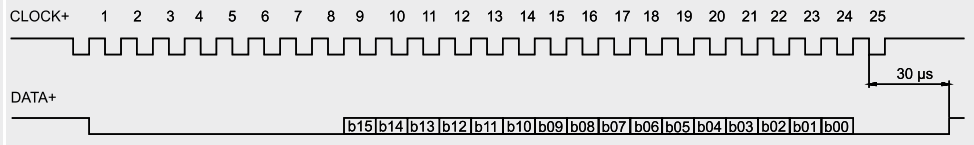
The sensing device of the ADSI is a precision potentiometer. The position information is given by an analog/digital converter output serialized as a data word. Data transmission takes place by means of the signals CLOCK and DATA. The processing unit (PLC, Micro-computer) sends pulse sequences which clock the data transmission with the required transfer rate. With the first falling edge of a pulse sequence the position of the sensor is recorded and stored. The following rising edges control the bit-by-bit A/D conversion, encoding and output of the data word. After a delay time the next new position information will be transmitted.

#### Signal conditioner ADSI16 A/D converted synchronous serial

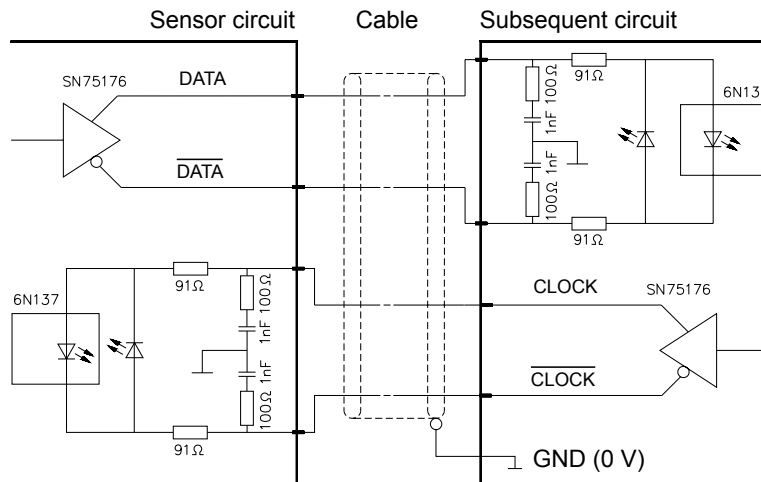


Interface	EIA RS422, RS485, short-circuit proof
Excitation voltage	11 ... 27 V DC
Excitation current	200 mA max.
Clock frequency	70 ... 500 kHz
Code	Gray code, continuous progression
Delay between pulse trains	30 µs min.
Resolution	16 bit (65536 counts) f.s.; optional 12 (ADSI) bit resp. 14 bit (ADSI14)
Stability (temperature)	±50 x 10 <sup>-6</sup> / °C f.s.
Operating temperature	-20 ... +85 °C
EMC	According to EN 61326:2006

#### Data format (train of 26 pulses)



#### Recommended processing circuit



#### Transmission rate

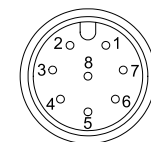
Cable length	Baud rate
< 50 m	< 300 kHz
< 100 m	< 100 kHz

#### Note:

Extension of the cable length will reduce the maximum transmission rate.

#### Signal wiring

Signal name	Connector pin no.
Excitation +	1
Excitation GND (0 V)	2
CLOCK	3
CLOCK	4
DATA	5
DATA	6
Shield	not connected




CONN-M12-8F

View to sensor  
connector

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## 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

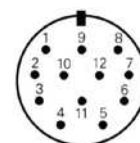
<b>Transmission rate</b>	<b>Cable length</b>	<b>Baud rate</b>	<b>Note:</b> Extension of the cable length will reduce the maximum transmission rate.
	< 50 m	< 400 kHz	
	< 100 m	< 300 kHz	
	< 200 m	< 200 kHz	
	< 400 m	< 100 kHz	

<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

#### Interface HINT 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

#### Data format 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> +	1
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

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## 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
	Data 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	

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## HCAN/HCANOP

### Absolute CAN / CANopen Encoder

<b>Interface</b> <b>HCAN/HCANOP</b> 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



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