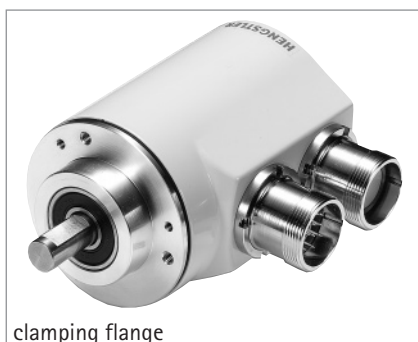


# Absolute Encoder

# Type RA 58-P SSI, programmable



synchro flange



clamping flange

## TECHNICAL DATA mechanical

- **New:** version with preset pushbutton
- SSI
- Multiturn
- Resolution 24 Bit
- Opto-ASIC
- Microprocessor technology
- EX-version see type RX- 70 P

Shaft diameter	6 mm (synchro flange), 10 mm (clamping flange)
Absolute max. shaft load	diam. 6 mm: axial 60 N (13 lbs), radial 110 N (24 lbs) diam.10 mm: axial 107 N (24 lbs), radial 160 N (35 lbs)
Absolute maximum speed	10,000 RPM (short term), 6,000 RPM (continuous duty)
Torque	≤ 0.5 Ncm
Moment of inertia	synchro flange: 14 gcm <sup>2</sup> , clamping flange: 20 gcm <sup>2</sup>
Protection class (EN60529)	Housing IP 65, bearings IP 64
Operating temperature	-10 ... +60 °C
Storage temperature	-25 ... +85 °C
Vibration proof (IEC 68-2-6)	100 m/s <sup>2</sup> (10 - 500 Hz) <sup>2)</sup>
Shock resistance (IEC 68-2-27)	1000 m/s <sup>2</sup> (6 ms) <sup>2)</sup>
Connection, axial or radial	1.5 m cable <sup>1)</sup> or flange connector
Housing	aluminium
Flange	S = synchro flange, K = clamping flange
Weight	approx. 350 g
Bearing life	1 x 10 <sup>10</sup> revolutions (typ.) at 35 % of full rated shaft load 1 x 10 <sup>9</sup> revolutions (typ.) at 75 % of full rated shaft load 1 x 10 <sup>8</sup> revolutions (typ.) at 100 % of full rated shaft load For example 30,000 h at 6,000 RPM with a 13 lb radial load (10 mm shaft)

<sup>1)</sup> other cable lengths possible on request

<sup>2)</sup> For applications with higher vibration and shock values, see section „Accessories: Encoder with shock module“

see section "Absolute Encoders – dimensioned drawings"

## DIMENSIONED DRAWINGS

## TECHNICAL DATA electrical

General design	as per DIN EN 61010-part 1, protection class III contamination level 2, overvoltage class II
Supply voltage	10 ... 30 V (SELV)
Power consumption	max. 0.2 A
Recommended external fuse	T 0.25 A
EMC	Interference emission according to EN 50081-2 Interference resistance according to EN 50082-2
Linearity	± ½ LSB
Type of code	Binary or Gray (programmable)

## TECHNICAL DATA SSI

Interface	RS 485
Baud rate	70 ... 1500 Kbits/s
Data update	every 600 µs
Inputs	Preset 1, Preset 2, Direction
Resolution <sup>1)</sup> physical	4096 pulses / 4096 revolutions 824 Bit) multiturn
Programmable functions	code sequence (Direction), scaling factor, Preset, Offset,
Output format, Output code	
Cable length	400 m <sup>2)</sup>

<sup>1)</sup> Resolution can be reduced as required by programming

<sup>2)</sup> 20 m for programming via RS 232 (RxD and TxD); see also "Recommended data transfer rate for SSI"

## RECOMMENDED DATA TRANSMISSION RATE FOR SSI

The maximum data transmission rate depends on the cable length. Please use twisted cable pairs and screened cable for clock rate / clock rate and data / data.

Cable length	Baud rate
< 50 m	< 400 kHz
< 100 m	< 300 kHz
< 200 m	< 200 kHz
< 400 m	< 100 kHz

## SYNCHRONOUS-SERIAL TRANSFER (SSI)

A clock brush is applied at the SSI interface, causing the encoder data to be serially clocked out. With each new clock brush (min. interval 30 ms) new data is readout.

The following main parameters are programmable:

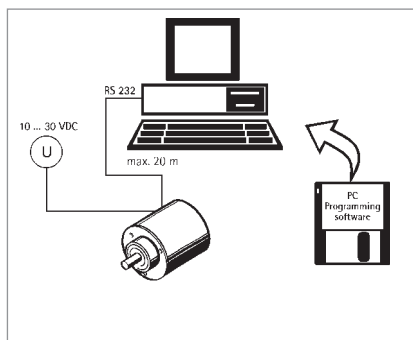
- **Preset**  
Software-Preset and via input/pushbutton settable presets (can be inactivated)
- **Offset**  
Relative shifting of actual encoder value.
- **Scaling**  
The actual value of the encoder is multiplied with the factor < 1.  
Direct entry, increments per measuring distance or per revolution.

- **Direction of rotation**  
Can be changed via software or input (can be inactivated)
- **Output formats SSI**  
Tannenbaum format or standard format (MSB oriented)
- **Output code**  
The choices are Gray or binary code, integer or two's complement representation. Selection of significant bit between 16 and 24 Bit.

In addition, programming of max. 7 status bits is possible:

- up to 4 warning positions
- overspeed
- encoder standstill
- parity
- encoder error
- direction of rotation

## PROGRAMMING WITH SSI



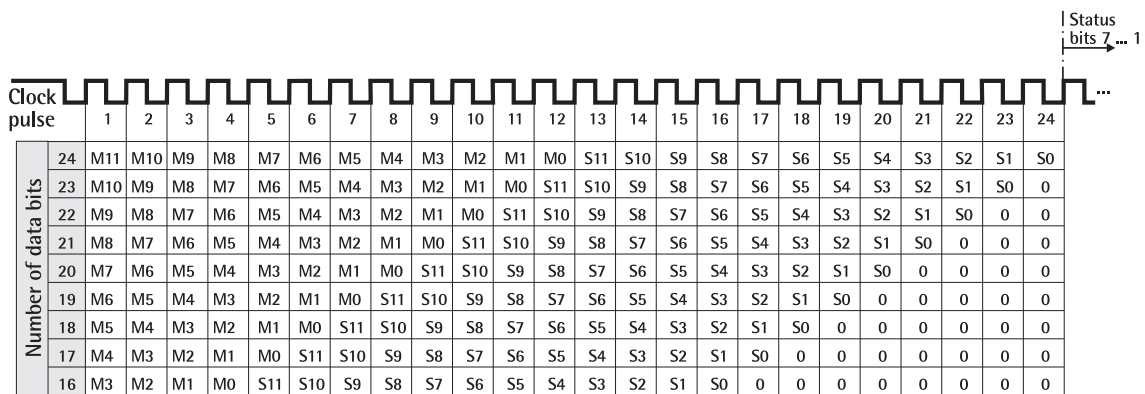
To program the absolute encoder you require a DOS-PC with programming software and the adapter cable.

The encoder is connected to the power supply and the serial interface of your PC with the adapter cable.

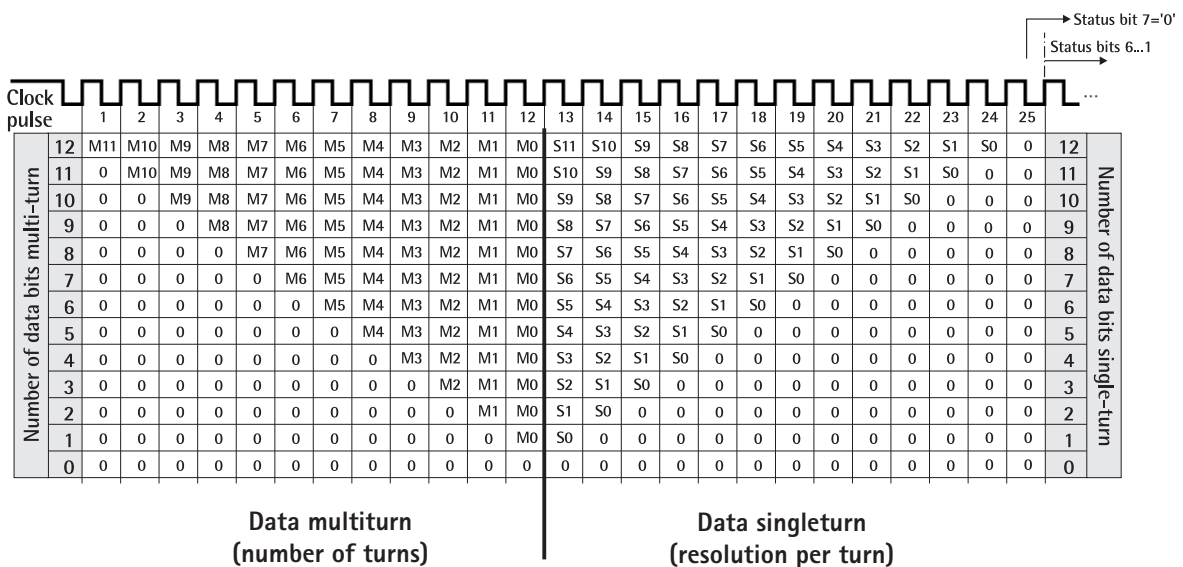
Using the menu-assisted programme you can then configure the encoder according to the parameters you require.

### OUTPUT FORMATS SSI

#### MSB-oriented



#### Tree format



# Absolute Encoders

# Type RA 58-P SSI, programmable

## CONNECTION DIAGRAM SSI

Cable	Flange connector	Signal
green	1	$\overline{\text{Clock}}$
yellow	2	Clock
pink	3	Data
grey	4	$\overline{\text{Data}}$
brown	5	RS 232 TxD
white	6	RS 232 RxD
black	7	0 V-signal output
blue	8	Direction
red	9	Preset 1
violett	10	Preset 2
white <sup>1)</sup>	11	10...30 VDC
brown <sup>1)</sup>	12	0 V (supply voltage)

<sup>1)</sup> larger cross section 0.5 mm<sup>2</sup>

## ACCESSORIES SSI

For SSI encoders	Ordering code
Programming software for DOS (including adapter cable) German	1 543 001
Programming software for DOS (including adapter cable), English	1 543 014
Position indicator "signo" 727-SSI	see section "Accessories"
User Manual SSI, German	2 543 002
User Manual SSI, English	2 543 005

## ORDERING DATA SSI

