

Quality - made in Germany



## RST 58 SSI

### Absolute single-turn encoder

- shockproof up to 200 g
- zero-setting, electrical
- Diagnosis output (DV)
- Resolution up to 13 Bit

#### Technical data

Resolution	12 or 13 Bit
Steps/Turn	4096 or 8192
Turns	1
Code	Gray, Binary
Interface	SSI

#### Electrical data

Operating voltage	UB = 10...30 VDC
Current consumption	Max. 50 mA (w/o load), at 24 VDC
Code change frequency	800 kHz
SSI pulse frequency	62,5 kHz to 1,5 MHz
Monoflop time	20µs
Pulse break	Min. 25 µs
Accuracy	± 0,025° with 400 kHz ± 0,05° with 800 kHz

#### Inputs

Control signals	CW/CCW and Zero
Level High	> 0,7 UB
Level Low	< 0,3 UB

#### Connection:

CW/CCW input with 10 kohms against UB, zeroing input with 10 kohms against GND SSI-pulse. Optocoupler input for electrical isolation.

#### Outputs

SSI data	RS 485-Driver
Diagnosis output	NPN-OC-output with 10 kohms protected against UB intern

Level Low (NPN)	< 0,5 V (bei I = 20 mA)
Loading Low	≤ 40 mA

#### Mechanical data

Speed (mechanical)	≤ 10.000 min <sup>-1</sup>
Speed (electrical)	≤ 6.000 min <sup>-1</sup>
Start-up torque	< 0,015 Nm
Shaft loading	< 40 N radial < 20 N axial
Moment of inertia	1,45 x 10 <sup>-6</sup> kgm <sup>2</sup>

#### Material

Housing	Steel
Flange	Aluminium
Weight	approx. 250 g

#### Ambient conditions

Vibration	DIN EN 60068-2-6 ≤ 100 ms <sup>-2</sup> (16...2000 Hz)
Shock	DIN EN 60068-2-27 ≤ 2.000 ms <sup>2</sup> (6 ms)
Operating temperature	- 20... + 85° C
Storage temperature	- 20... + 85° C
Humidity	Max. relative humidity 95 % no-condensing
Protection type	IP 65
Interference resistance	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4

#### Description of diagnostic functions

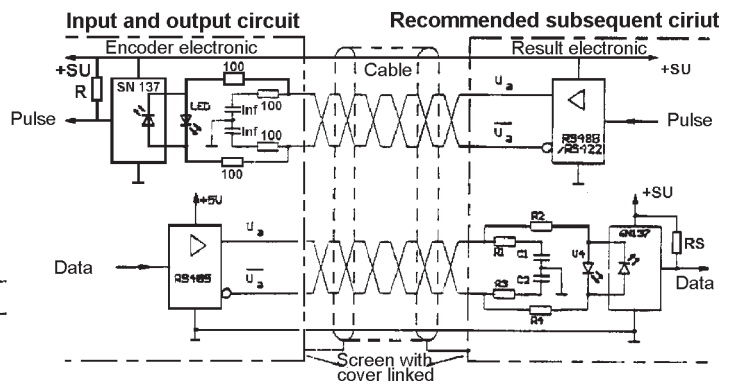
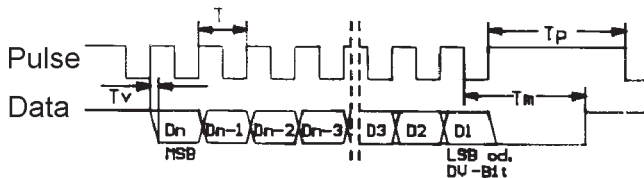
The following points are monitored during operation.

- Consistency test of code
- Exceeding of the permissible signal frequency
- LED failure, aging
- Receiver failure
- Code disk, glass breakage

**Contact description**

1 UB	Encoder power supply connection.	8 DV	Diagnostic output DV Jumps in data word, e.g. due to defective LED or photoreceiver, are displayed via the DV output. In addition, the power supply of the sensor unit is monitored and the DV output is set when a specified voltage level is dropped below. Both outputs are Low-active, i.e. are switched through to GND in the case of an error.
2 GND	Encoder ground connection. The voltage drawn to GND is UB.	9 CW/CCW	CW/CCW determines the direction of turn. From the point of view of the shaft CW means that the code increases when the shaft turns to the right. When the GND is added, the code changes to CCW (descending sequence). The unit leaves the factory in CW.
3 Pulse +	Positive SSI pulse input. Pulse + forms a current loop with pulse -. A current of approx. 7 mA in direction of Pulse + input generates a logical 1 in positive logic.	10 NC	Connection inoperative. For maximum interference the input is internally connected to GND.
4 Data +	Positive, serial data output of the differential line driver. A High level at the output corresponds to logical 1 in positive logic.	11 / 12	not in use
5 Zero	Zero setting input for setting a zero point at any desired point within the entire resolution. The zeroing process is triggered by a High pulse (pulse duration $\geq 100$ ms) and must take place after the rotating direction selection (UP/DOWN). For maximum interference immunity, the input must be connected to GND after zeroing.		
6 Data -	Negative, serial data output of the differential line driver. A High level at the output corresponds to logical 0 in positive logic.		
7 Pulse -	Negative SSI pulse input. Pulse -forms a current loop with pulse +. A current of approx. 7 mA in direction of Pulse -input generates a logical 0 in positive logic.		

**SSI (Synchron serielles Interface)**



# PIN - assignment RST 58 - SSI

Signal	PIN	Cable colour
UB	1	brown
GND	2	black
Pulse +	3	blue
Data +	4	beige
Adjustment	5	green
Data -	6	yellow
Pulse -	7	violett
DV single	8	<b>brown/yellow</b>
CW/CCW	9	pink
not in use	10	-
not in use	11	-
not in use	12	-

**Instructions:**

**CW/CCW** controls the direction of rotation. For the shaft, CW indicates a rising code for rotation to the right. In GND the code changes to CCW (falling code). The unit comes to you in the CW mode.

Zero adjustment for setting a zero point at any desired point within the entire resolution. The zeroing process is triggered by a High pulse (pulse duration  $\geq 100$  ms) and must take place after the rotating direction selection (UP/DOWN). For maximum interference immunity, the input must be connected to GND after zeroing.

**DV single** is the diagnosis output of single-turn  
**DV multi** is the output of multi-turn.

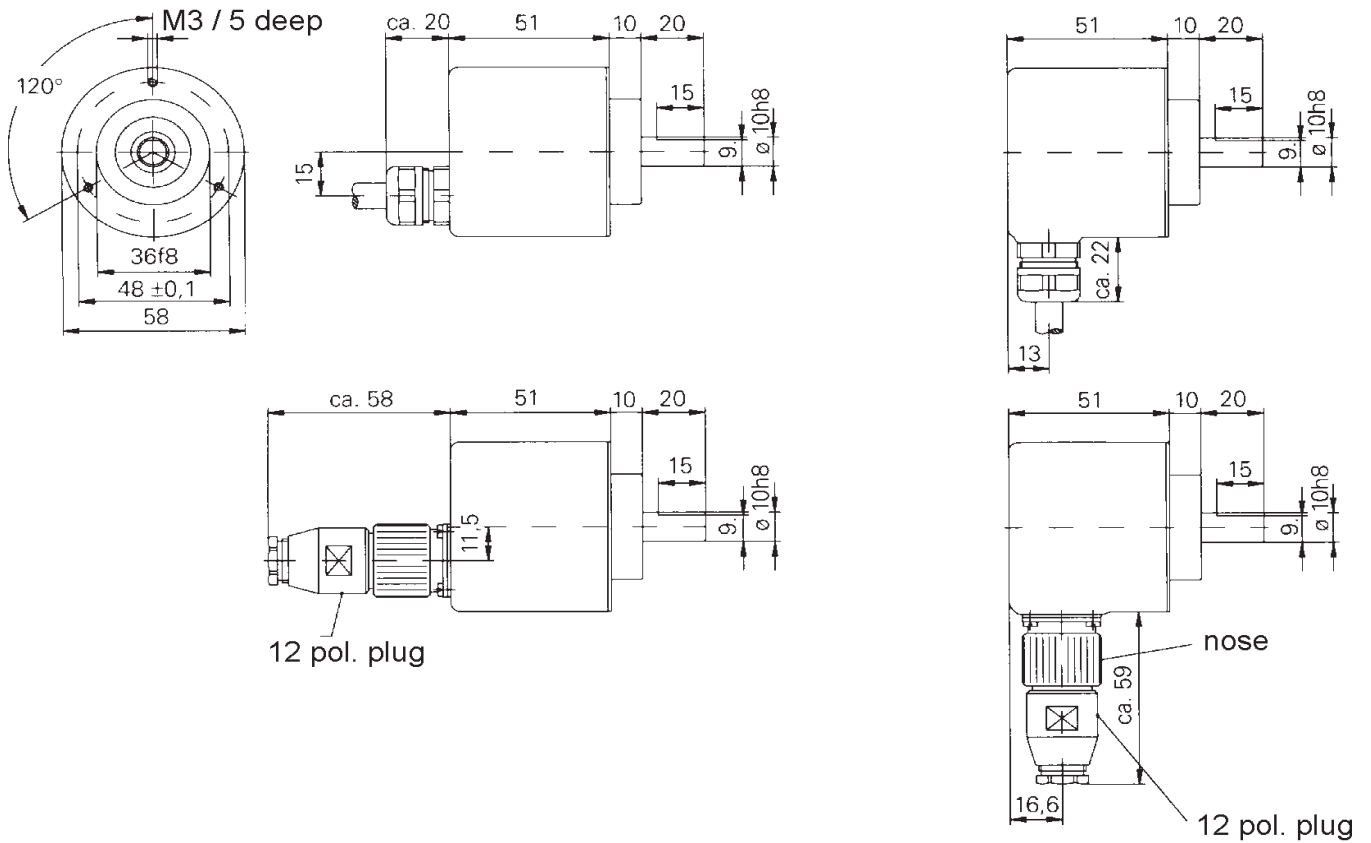
Please refer to the supply voltage stated on the nameplate.  
 Do not occupy any signals which are not required.

## Type key of encoder

Encoder type	Bit/Turn	Turn	Code	Voltage	Flange	Output	Option
<b>RST 58</b>	12 = 4096 S/T	1 = 1T	G = Gray	5 = 5 VDC	W 1 = 10 mm shaft clamping flange	KG = Cable axial	B = 12 Bit SSI + Parity-Bit
<b>RST 58</b>	13 = 8192 S/T		B = Binary	3 = 10 - 30 VDC	V 6 = 6 mm shaft servo flange	KS = Cable radial	
<b>RST 58</b>					V 1 = 10 mm shaft servo flange	SG = 12pol. plug axial	
<b>RST 58</b>						SS = 12pol. plug radial	
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# Dimension and cutout RST 58 - SSI

## 10 mm shaft, clamping flange



## 6 mm shaft, servo flange

