



Type SCA18

- Shaft Encoder - \varnothing 18 mm
- Shaft: \varnothing 4 mm
- Resolution up to 5000 ppr
- Standard IP 50

Electrical Specifications

Code:	Incremental
Resolution:	100 to 5000 ppr (pulses per revolution)
Supply Voltage:	4,5 Vdc min. to 30 Vdc max. (35 mA max. - no load) **
Output Voltage:	Low: 500 mV max. at 10 mA High: ($V_{in} - 0,6$) at -10 mA ($V_{in} - 1,3$) at -25 mA
Output Current:	25 mA max. load per output channel **
Frequency Response:	200 kHz max. **
Output Format:	Two channel (A, B) quadrature with Index (Z) and optional complementary (A-, B-, Z-) outputs
Phase Sense:	A leads B clockwise (CW) from the mounting end of the encoder
Index:	Gated with Channels A and B high
Accuracy:	+/- 0,8 arc-min.
Outputs:	ASIC Differential
Electrical Protection:	Reverse polarity and output short circuit protected
Noise Immunity:	Tested to EN61000-6-2 : 2005 (industrial environments) Electromagnetic compatibility (EMC) and EN 61000-6-3 : 2007 (residential, commercial, and light-industrial environments) for Electromagnetic compatibility (EMC)

**= It is recommended user not to combine max. Value for all 3 parameters

Mechanical Specifications

Material:	Housing: Aluminum / Brass Cap: Aluminum Shaft: Brass
Weight:	Encoder: ~ 15 gr (0,53 oz) Cable: 50 gr / meter (1,76 oz / meter)
Bearing Life:	$> 1,9 \times 10^{10}$ revolutions at rated load
Shaft Speed:	12.000 rpm (max.)
Starting Torque:	$< 0,005$ Nm (0,708 oz-in) at 25° C
Mass Moment of Inertia:	0,25 gcm ² ($3,54 \times 10^{-6}$ oz-in-sec ²)
Shaft Loads:	Axial: 10 N (2.25 lbs) max. Radial: 10 N (2.25 lbs) max.

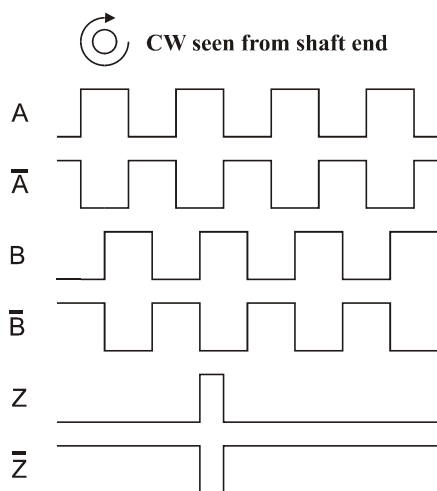
Environmental Specifications

Operating Temp.:	-20° to +70° C
Storage Temp.:	-20° to +85° C
Shock:	100 G / 11 ms
Vibration:	10-2000 Hz / 10 G
Bump:	10 G / 16 ms (1000 x 3 axis)
Humidity:	98 % RH without condensation
Enclosure Rating:	IP 50 / Nema 5 (approx.) - flat cable

Connection Options

Cable:	8 leads (0,05 mm ² , 30 AWG) twisted pairs; shielded
Flat Cable:	10 lead flat cable with IDC connector

Output waveform



Channel tolerance $180^\circ \pm 36^\circ$
 Phase difference tolerance $90^\circ \pm 18^\circ$
 Z channel tolerance $90^\circ \pm 18^\circ$

Disk Resolutions (pulses per revolution)

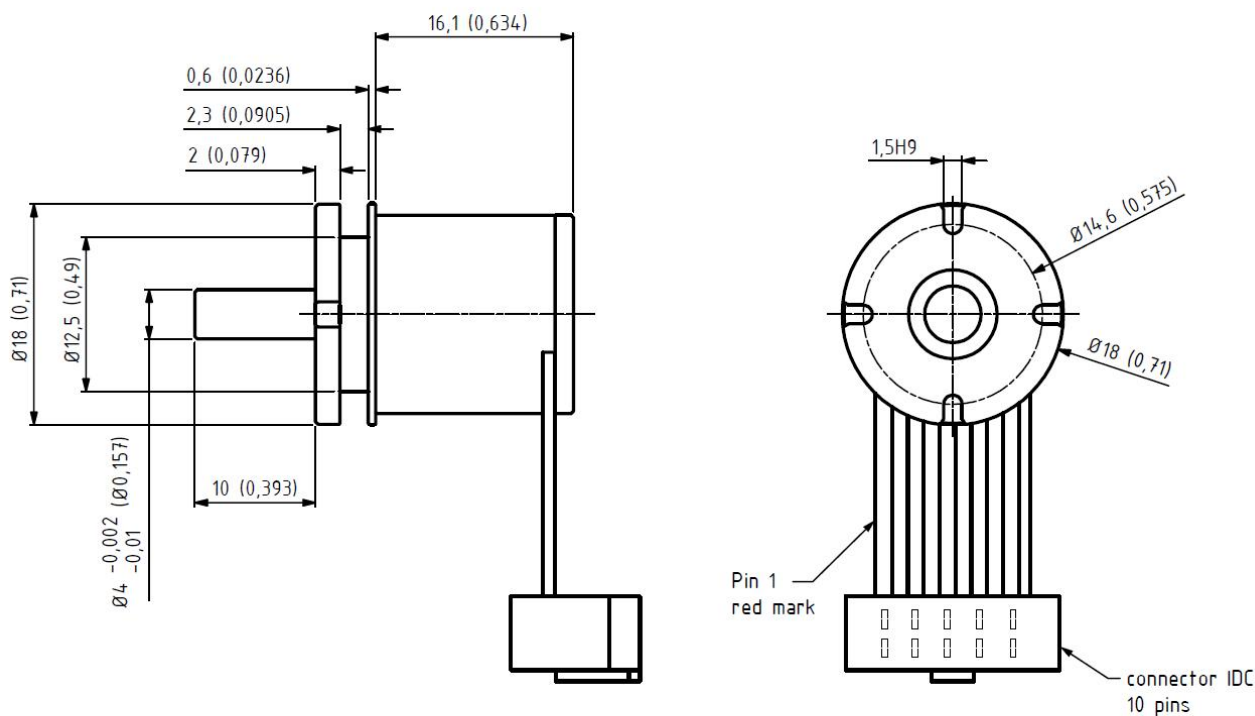
100	125	160	256	300
360	500	1000	1024	2000
2500	3600	5000*		

Other options on request

Pulses per revolution,
 min. 1 – max. 5.000

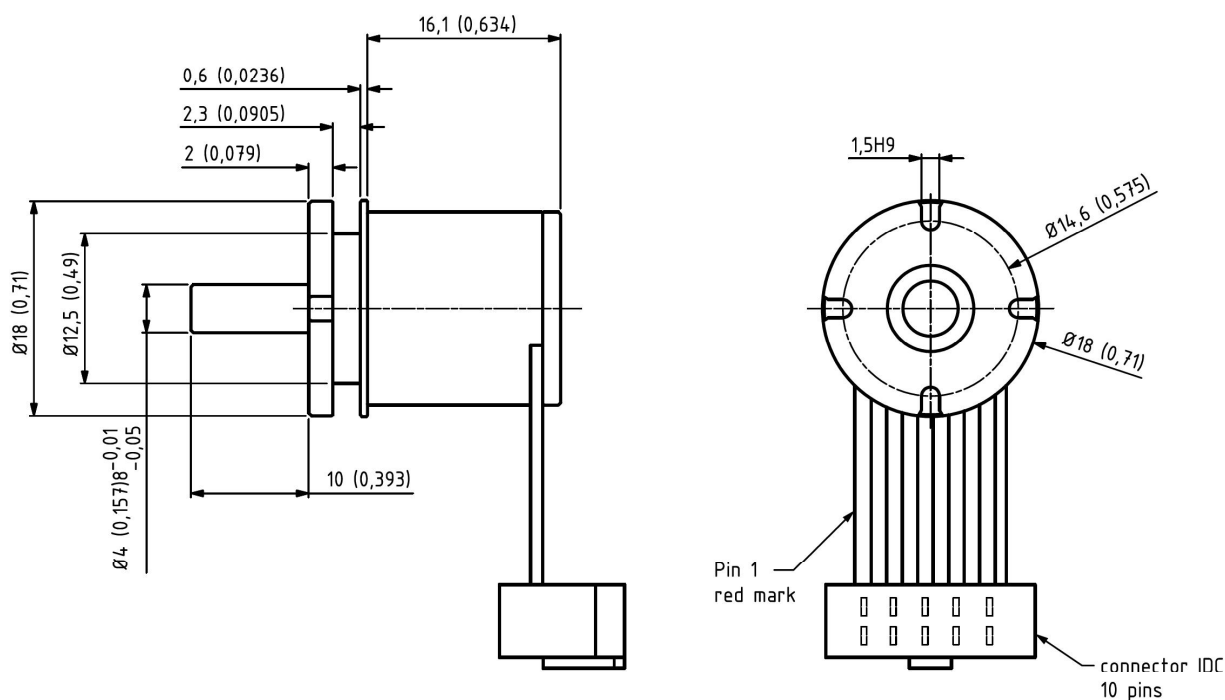
* Operating temperature: -20°C to 50°C

Mechanical Dimensions



Flat Ribbon Cable with IDC connector

mm (inches)



Flat Ribbon Cable with IDC connector

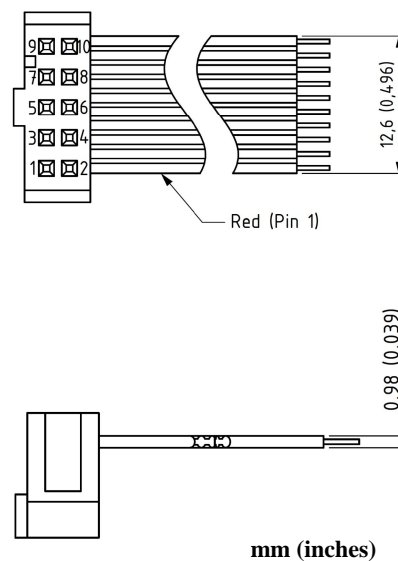
mm (inches)

Output Terminations

Standard Cable		Flat Cable w/ IDC Connector		
	Differential Output		Differential Output*	Inverted Output**
Channel	Wire Color	Position	Channel	Channel
A	Pink	1	NC	A -
A -	Gray	2	Vsup	NC
B	Green	3	GND	NC
B -	Yellow	4	NC	NC
Z	White	5	A -	NC
Z -	Brown	6	A	GND
Vsup	Red	7	B -	NC
GND	Blue	8	B	B -
		9	Z -	Vsup
		10	Z	Z

GND = Circuit Ground

* Hewlett Packard (HP) compatible
 ** ID # required for ordering



- IP 50 rating
- CE mark not available
- 0,5 m, 1 m, or 2 m cable length only

