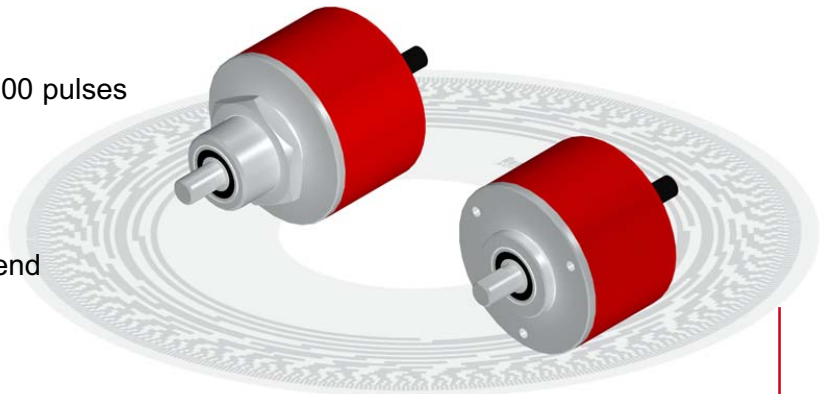


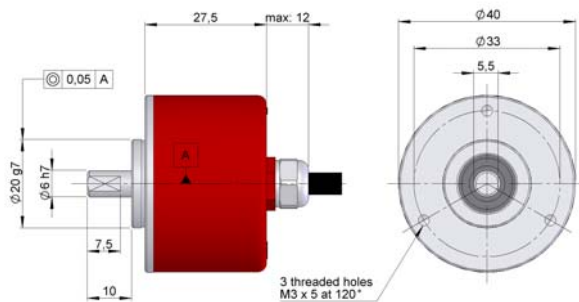
# SERIE 21

## SOLID SHAFT INCREMENTAL ENCODER FOR SIMPLE INDUSTRIAL APPLICATIONS

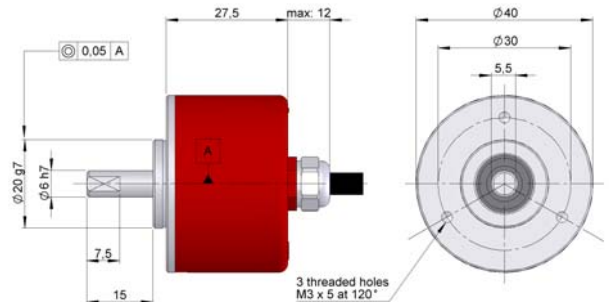
- Any number of pulses available from 1 to 500 pulses
- External diameter 40 mm
- Shaft 6 mm
- Protection class IP41 according DIN40050
- Connection by cable (any cable length available) or air industrial connector at the end



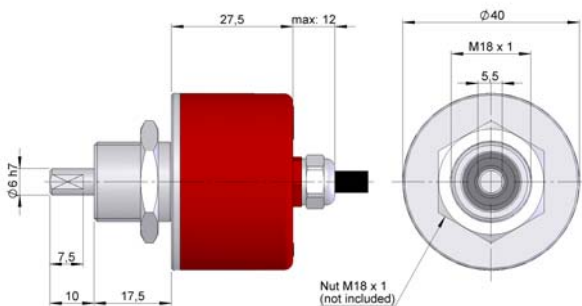
**Mechanical A**



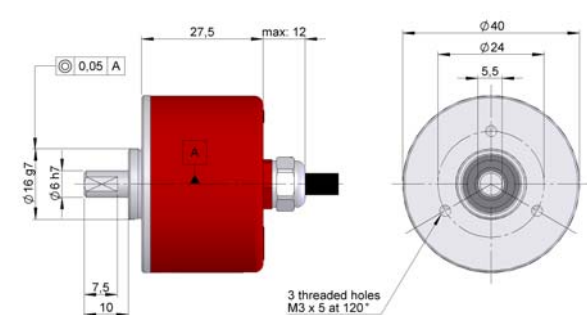
**Mechanical B**



**Mechanical C**



**Mechanical D**



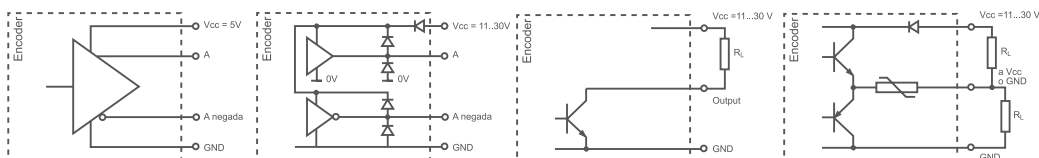
Previous mounting and installation of the encoder is recommended to read the section "TECHNICAL CONSIDERATIONS".

### MECHANICAL SPECIFICATIONS

Housing	Aluminium.
Shaft	Stainless Steel.
Bearings	Ballraces.
Bearings lifetime	1x10 <sup>10</sup> rev.
Maximum number of revolutions permitted mechanically	5000 rpm.
Protection against dust and splashes according to DIN 40050	IP41.
Rotor inertia moment	10 gcm <sup>2</sup> .
Starting torque at 20°C (68°F) ,	Max. / 0,4 Ncm.
Maximum load permitted on axial shaft	5 N.
Maximum load permitted on radial shaft	5 N.
Weight aprox.	0,2 Kg.
Operating temperature range	-20°C to +60°C.
Vibration	100 m/s <sup>2</sup> (10Hz...2000Hz).
Shock	1000 m/s <sup>2</sup> (6ms).
Maximum pulses per turn	500.
Axial connection	Cable 1 metre (other cable lengths available on order).

## ELECTRICAL SPECIFICATIONS

### OUTPUT SIGNALS



	RS422 (TTL compatible)	Push-Pull Differential	NPN Open Collector	Push-Pull without inverted
Power supply	5 V ±5%	11...30 V	11...30 V	11...30V
Consumption	Typical: 70 mA Max: 150 mA	Typical: 45 mA Max: 150 mA	40 mA	Typical: 45 mA Max: 150 mA
Max. load capability	±20 mA	±30 mA	40 mA	±30 mA
Length of cable allowed	1200 m	100 m	50 m (a 24 V)	50 m
"Low" signal level	$V_{OL} < 0,5 V$	$V_{OL} < 2,5 V$	$V_{OL} < 0,4 V$ (a 24 V)	$V_{OL} < 2,5 V$
"High" signal level	$V_{OH} > 2,5 V$	$V_{OH} > V_{CC} - 3 V$	$V_{OH} > 2,2 V$ (a 24 V)	$V_{OH} > V_{CC} - 3 V$
Frequency	300 kHz	200 kHz	100 kHz	200 kHz
Short circuit protection	Yes	Yes	Not permanent	Yes
Protection against polarity inversion	No	Yes	Yes	Yes
Channel B leads (90° electric) channel A				

### CONNECTION

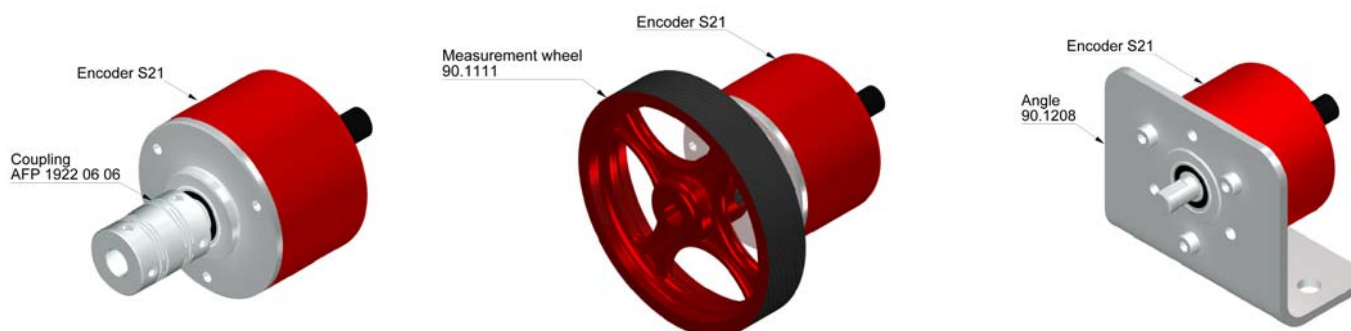


	Cable 5x0.14	Cable 3x2x0,14+2x0,34
GND	Yellow	Black
Vcc	White	Red
A	Brown	Yellow
B	Green	Green
A inverted		Brown
B inverted		Blue
0 (reference)	Grey	Grey
0 inverted	Grey	Orange

## ORDERING CODE

SERIE	MECHANICAL OPTION	OUTPUT SIGNALS	ELECTRONIC OUTPUT	PULSES NUMBER
21	●	●	●	● ● ●
	1- A 2- B 3- C 4- D see dimensions	1- A 2- A + B 3- A + B + 0 4- A + B + 0 7- $\tilde{A}\tilde{A} + \tilde{B}\tilde{B} + 0\tilde{0}$ 8- AA + BB	0- Open collector NPN 11..30V 1- Push-Pull 11..30V (without inverted) 7- Standard RS422. 5V. Compatible TTL 9- Differential line driver. Push-Pull 11..30V	

## ACCESSORIES



All the accessories available in the sections "SIGNAL CONDITIONERS" and "MOUNTING ACCESSORIES".