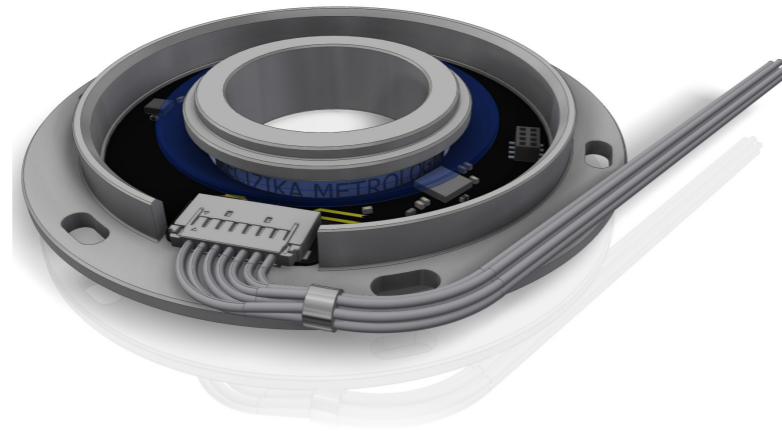


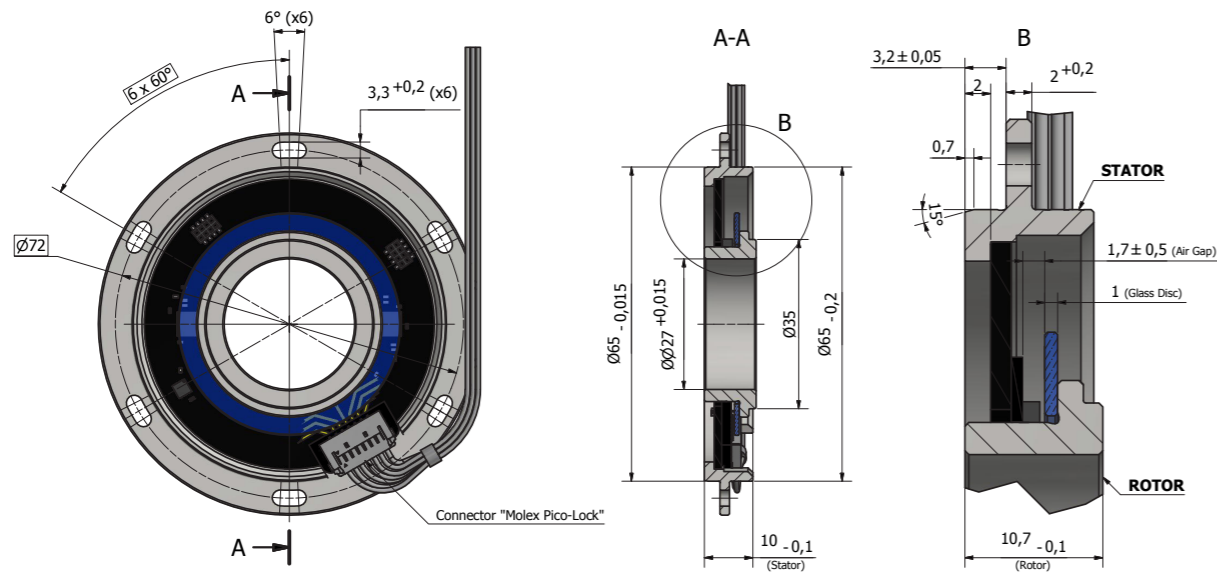
# AR SERIES

AR79



This is a high-resolution, singleturn absolute encoder kit with a 22 Bit BiSS-C interface. The encoder consists of several optical reflectance sensors arranged at an angle of 180 degrees to each other.

This allows to eliminate mechanical errors in the application, such as the runout of the measured shaft, by using subsequent electronics.



## MECHANICAL DATA

Maximum shaft speed	20000 rpm
Permissible axial motion of measured shaft	±0.03 mm
Permissible radial runout of measured shaft	±0.03 mm
Rotor moment of inertia	< 30 x 10 <sup>-6</sup> kgm <sup>2</sup>
Protection (IEC 529)	IP00
Max. weight	0.05 kg
Operating temperature	-40...+100 °C
Storage temperature	-40...+100 °C
Maximum humidity (non-condensing)	98 %

## ELECTRICAL DATA

Resolution	22 bit
Output code	Binary
Data interface	BiSS C
Periods number of signals 1Vpp	512
Accuracy*	± 100 arc. sec

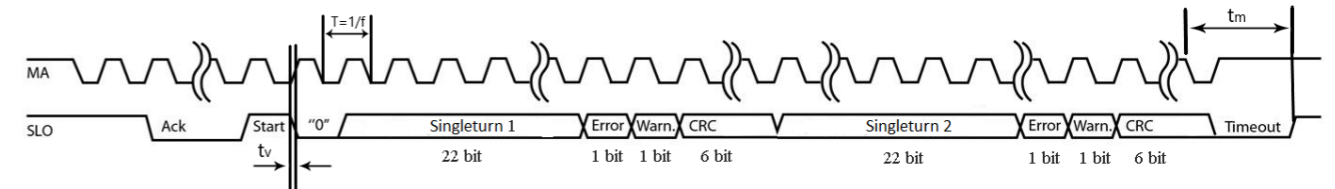
Supply voltage	+5V ± 5%;
Supply current	80 - 220 mA
Start up time	13 ms
Scan ratio of T	40 - 60 %
Time lag	80 ns
Monoflop time	timeout + T/2 us
Rise and fall time	4 - 15 ns
Analog signals	~1Vpp (512 ppr)
Cutoff frequency	< 240 kHz
Amplitude output voltage	0.6 - 1.2 V
Maximum output current	22 mA
Light source	LED

\*Expected at optimum installation, additional deviations due to mounting and inaccuracy of the measured shaft are not taken into account.

Note: Maximum working rotation speed (with proper encoder counting) is limited by maximum operating frequency and maximum mechanical rotation speed.

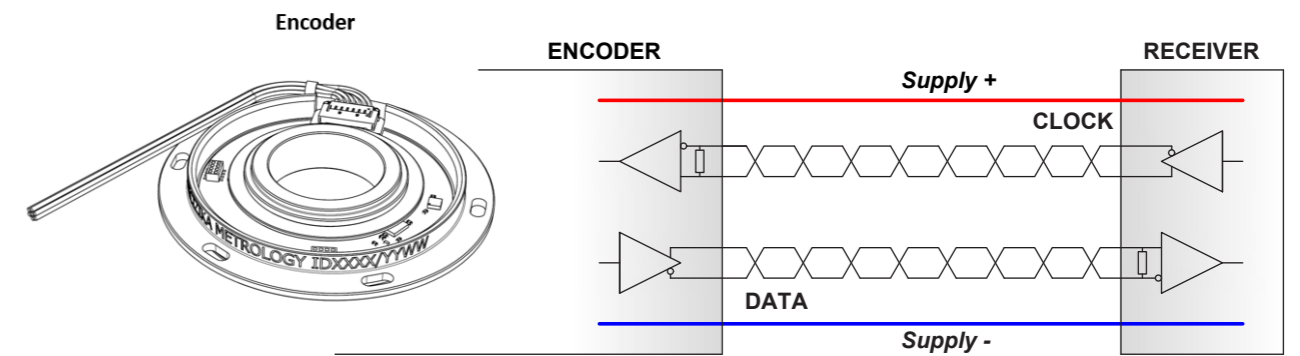
## INTERFACE

### DATA TRANSFER BISS-C

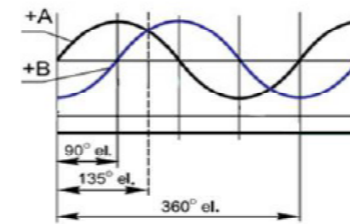


DESCRIPTION	DATA
T <sub>timeout</sub>	0.075 us - 24 us
Clock frequency	62.4 kHz - 20 MHz

### TYPICAL OPERATING CIRCUIT FOR BISS-C



### SINE-WAVE VOLTAGE SIGNAL

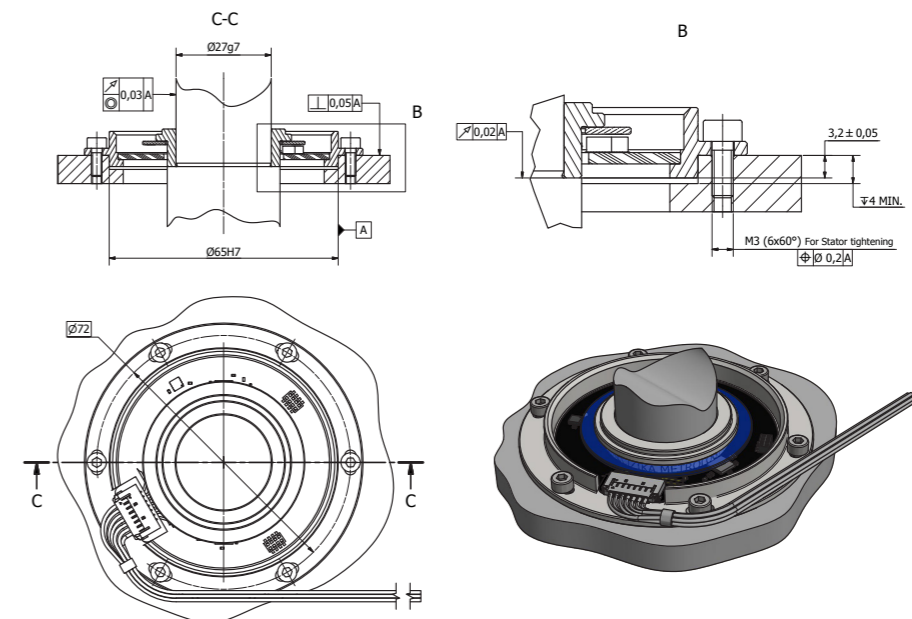


## INSTALLATION ERROR

Due to dimensional and form error of the customer's shaft as well as its radial runout and fit tolerances with encoder disc / hub assembly the unwanted runout of the circular scale appears and leads to increased angle measurement error. The following installation error  $\Delta\Phi$  relationship between the radial runout  $r$  and the mean diameter  $D$  of the graduation is expressed:

$$\Delta\Phi = \pm 412 \times 0.5r / D \quad D = 42,80 \text{ mm}$$

## MECHANICAL DIMENSION



This is just one example of a tailor made encoder kit. For other mechanical, electrical configurations or different interface options please contact us directly: sales@precizika.com