



COMBUSTION MEASUREMENT

SENSORS AND SIGNAL CONDITIONING / SENSORS

ANGLE ENCODER 365R

Introduction

The Angle Encoder 365R is a high precision sensor for angle-related measurements mainly for indicating purposes.

The optical function is based on reflection light principle from marks of a rotating component at the crank shaft to the pick-up. It is the most commonly used system in engine indicating technology due to the high precision in extreme operating conditions. The angle mark resolution is 1.0 or 0.5 degree crank angle (up to 0.05 deg. CA max. by means of multiplication).

The electronic components must be mounted separately from the sensor (crank shaft) to minimize the influence of electric interference, temperature and vibration. There is a track on the rotating component fitted with marks with a high number of pulses for the angle information which includes trigger pulse information per revolution too for synchronization purposes.

The angle information is transmitted by light pulses from the encoder through an optical cable, length 2 m, to an emitter-receiver-electronic.

There is no need of installation of additional mass because the marker trace is adapted to a rotating component of the crank shaft itself (mass free marker trace). The manufacturing of the trace at this component is done either by the customer (with AVL support) or by AVL.

Material recommendation: stainless steel, titanium.

Areas of Usage

The Angle Encoder 365R is specially designed for racing application. By means of reflecting principle Trigger and CDM are detected. Due to its small size 365R can even be adapted at engine locations with difficult access close to the crank shaft. The marker trace is laser cut.

Product Benefits

- No additional mass to the crank shaft
- Small required space
- Low effort for adaptation of pick-up

Technical Features

The encoder's 365R design is quite similar to the AVL Angle Encoder 365X but much smaller, the size of the optical window is 4 x 0.4 mm, the size of the mounting flange is approx. 30 x 14 mm.

Possible diameter of rotating component:

- Diameter 65 mm to 120 mm with 360 slits
- Diameter 100 mm to 200 mm with 720 slits

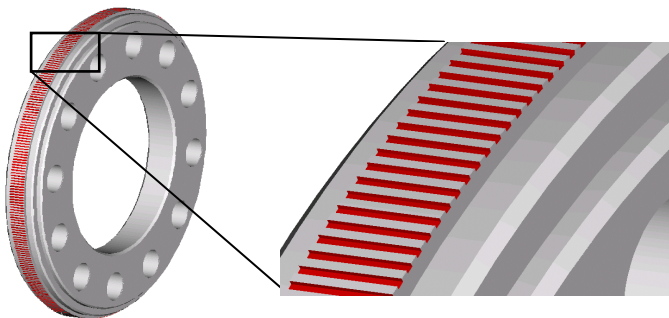
Necessary surface width for manufacturing the marker trace: 8 mm

Technical Data

Speed range	200 to 25 000 rpm
Vibration stability	500g (max. vibration peak 1000g)
Max ambient temperature	Sensor head: 0 °C.....140 °C Electronics: 0 °C.....70 °C
Degree of protection	IP54

Requirements to the rotating component for manufacturing the marker trace:

Structure of marks must provide good specification regarding reflection and absorption, recommended material: stainless steel, Titanium.



Options

Machining marker wheel 720 marks to 365R
Machining marker wheel 360 marks to 365R

Accessories

Electronics (BO4293)
Connecting cable BV2026 or BV2836