A PUBLICATION OF:

TR ELECTRONIC

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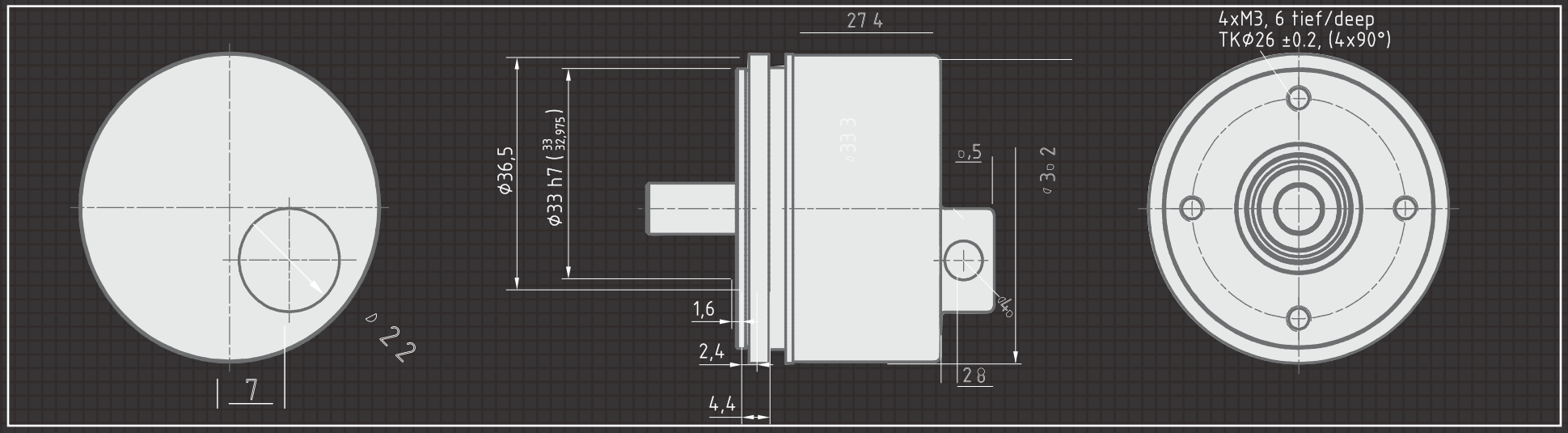
Rely on Proven Multi-Turn Gear Technology

IP69K ABSOLUTE AND INCREMENTAL ENCODERS

ADVANCED ENCODER TECHNOLOGY



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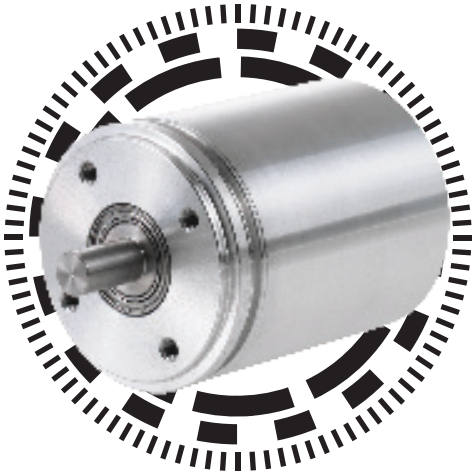

ADVANCED ENCODER TECHNOLOGY

EXTREMELY DURABLE ROTARY ENCODERS.

Available Communication Interfaces: SSI, Incremental, Dual SSI Outputs, and analog.

Request a Demo

Go to Product Page

BEARING FREE

- No moving internal parts
- Encapsulated electronics up to IP69K. (Single-Turn only)

COMPACT DESIGN

- 36mm diameter compact design
- Available as single-turn or multi-turn.

MULTI-TURN

No counters, no battery buffering, robust against electromagnetic interference

INTEGRATED SOLID SHAFT

- Proven double bearing technology.

-Installed via flange with clamps or front side screws.

DOUBLE ROTARY ENCODER

- Redundant Sensor System
- A single-turn encoder with 2 x SSI outputs with 4096 steps/revolution.

IP69K Encoders:
Advanced Encoder Technology

A compact 36mm diameter encoder with advanced detection technology and a proven multi-turn gear system.

The compact 36mm series of rotary encoders have completely encapsulated electronics and offer an optional IP69K gear rating.

The compact 36mm series of rotary encoders have completely encapsulated electronics and offer an optional IP69K rating. The Single-Turn encoders have no moving internal parts and feature proven double bearing technology. The CMF, CDF, IMF versions employ contact free scanning, which eliminates mechanical wear and tear. The Double encoders (CDV , CDF) feature 2 redundant encoder outputs; its like having two encoders in one.

The NEW 36mm small multi-turn absolute and incremental rotary encoders communicate with the control unit via incremental signals (K1, K2, K0 and negating), SSI, double SSI, SSI + incremental (DriveCLiQ and CAN interfaces coming soon). Key features of the CM_36 / IM_36 series are:

Key Features:

- IP69K Protection and Class Rating
- Working temperature of -40 °C... +70 °C
- Customized adaptations available upon request.

VARIATIONS OF THE 36mm ENCODER SERIES

Seven Absolute Rotary Encoders and
2 Incremental Rotary Encoders

ABSOLUTE ENCODER CMV36S - SSI

- IP69K Protection Class
- Up to 4096 programmable steps per revolution
- Preset and count direction triggered via electrical input
- Fully encapsulated electronics
- Solid shaft design
- SSI Interface
- Further interfaces available

ABSOLUTE ENCODER CMF36S - SSI

- IP69K Protection Class
- Programmable steps per revolution up to 4096
- Preset and count direction triggered via electrical input
- Fully encapsulated electronics
- Solid shaft design
- SSI Interface
- Further interfaces available

CMF-CDF VARIATIONS ARE NOT MULTI-TURN

The multi-turn 36mm encoders have shafts that are linked internally to a gearing system.

This is also why the multi-turn encoders are not available with an IP69K rating.

CDV36M-SSI

Shaft turn accumulation for a total count of 16,777,216 counts

ABSOLUTE ENCODER CDV36S - SSI

- IP69K Protection Class
- Dual redundant scanning system
- Fully encapsulated electronics
- Solid shaft design
- Preset direction change triggered via electrical input
- Steps/rev, SSI data bits, gray or binary code all selectable via TRWinprog Software
- Further interfaces available

ABSOLUTE ENCODER CDF36S - SSI

- IP69K Protection Class
- Separate bearing design
- Redundant sensor system
- Fully encapsulated electronics
- Solid shaft design
- SSI interface
- Further interfaces available
- Special parameters upon request

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INCREMENTAL ENCODER

IP69K Protection Class

INCREMENTAL ENCODER IMV36

- IP69K Protection Class
- Incremental Interface
- Fully encapsulated electronics
- Magnetic sensor technology

INCREMENTAL ENCODER IMF 36

- IP69K Protection class
- Incremental Interface
- Design for separate bearing
- Fully encapsulated electronics
- Magnetic sensor technology

ROTARY ENCODER SELECTION

A STEP BY STEP GUIDE

Download Guide

Choosing the right encoder may seem overwhelming. There are so many options and configurations that you may or may not require for your application. It is important to select an encoder that will provide you with the flexibility and features you need.

Here are a few things you need to know when choosing an encoder.

CHOOSING THE RIGHT ENCODER

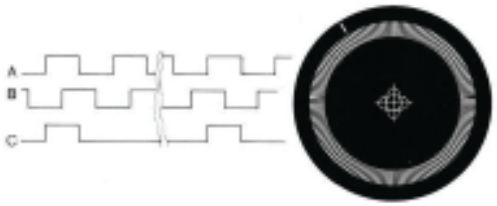
THE OPTIONS:

- Incremental Vs. Absolute
- Single Turn Vs. Multi-Turn
- Programmable Vs. Non-Programmable
- Output Interface
- Mechanical Interface Style
- Steps per Revolution & Revolutions
- Supply Voltage
- Special Requirements

INCREMENTAL Vs. ABSOLUTE

Choose one:

☐



INCREMENTAL ENCODER

Incremental encoders are very simple and basic devices which provide pulses or signals to a controller. They DO NOT maintain positional data. Pulses are typically provided in an A Quad B format. Details can be found in Output Formats 101(Incremental).

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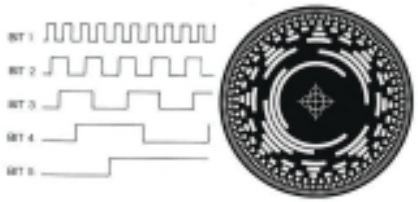
ABSOLUTE ENCODER

Absolute encoders provide a digital value to the controller, maintaining positional data even when power is turned off. There are many different formats in which the data can be transmitted; Point to Point, Fieldbus and Ethernet. Details can be found in Industrial Communications 101.



SINGLE-TURN Vs. MULTI-TURN

Choose one:

☐

SINGLE-TURN

Single Turn encoders resolve a single revolution or turn into measuring increments. They provide positional data, which rolls over after one complete revolution. The number of measuring increments per revolution are measured using a single code disk.

☐

MULTI-TURN

Multi-Turn encoders provide positional data over multiple or continuous turns, up to the maximum revolutions. The positional data rolls over after the total number of revolutions has been made. The number of measuring increments is measured using a main disk and satellite disks which are driven through internal reduction gears.

PROGRAMMABLE Vs. NON-PROGRAMMABLE

Choose one:

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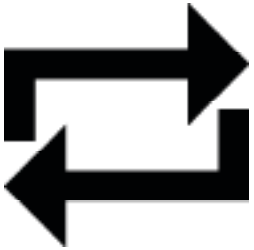

PROGRAMMABLE

Programmable encoders offer the end user the flexibility to change specific parameters of the encoder in the field. Parameters such as total resolution, steps per revolution, preset values and direction are amongst the many parameters that are customizable.

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NON-PROGRAMMABLE

Non-Programmable encoders have all of the specifications defined at the time of ordering. They provide a single configuration / setup which can not be changed once the encoder is manufactured.

MECHANICAL INTERFACE STYLE

Measuring Length = Steps per Revolution x Revolutions

SOLID SHAFT

Solid Shaft encoders are available in a variety of lengths and diameters, with options such as: flats: with or without keys and in metric and US dimensions. They require a mechanical coupler to join the encoder to the device being monitored.

HOLLOW SHAFT

Hollow Shaft encoders mount directly on a shaft, allowing the shaft to penetrate through the entire body of the encoder. They are available with or without keys, in metric and US diameters up to 25 mm.

BLIND SHAFT

Blind Shaft encoders mount similarly to a Hollow Shaft, however they only allow the shaft to penetrate partially into the housing of the encoder. They are also available with or without keys, in metric and US diameters up to 25 mm.

INTEGRATED COUPLING

Integrated Coupling encoders are designed for flush mounting against a specific coupler, such as those used in String Pots (Cable Retractors). Main disk and satellite disks are driven through internal reduction gears.

STRING POT [CABLE RETRACTOR]

String Pot (Cable Retractor) refers to an encoder mounted onto a spring loaded drum and cable. This allows a rotary encoder to measure linear position when the environment or application would not allow for a standard linear encoder.

SUPPLY VOLTAGE

Choose one:

☐ ***5 Vdc***

☐ ***11 - 27 Vdc***

OUTPUT INTERFACE

Choose one:

POINT TO POINT

- ☐ SSI *(Synchronous Serial Interface)*
- ☐ ISI *(Incremental Serial Interface)*
- ☐ ASI *(Asynchronous Serial Interface)*
- ☐ Parallel
- ☐ Analog
- ☐ Sin/Cos
- ☐ OTHER _____.

FIELDBUS

Fieldbus interfaces provide a higher level of communication and include:

- ☐ DeviceNet
- ☐ ProfiBus
- ☐ CANopen
- ☐ LWL (Optical Waveguide)
- ☐ Interbus
- ☐ OTHER _____.

ETHERNET

EtherNet interfaces provide the highest level of communication using the EtherNet Protocol and include

- ☐ EtherNet/IP
- ☐ ProfiNet
- ☐ EtherCAT
- ☐ PowerLink

SPECIAL REQUIREMENTS

Special Requirements include Heavy Duty Housings, Custom Wire Connectors, High Vibration, Heavy Shaft Loading, Unique Mounting, or any other variables unique to your application.

TR ELECTRONIC WILL WORK WITH YOU TO DEVELOP THE BEST SOLUTION FOR YOUR APPLICATION.

TR's flexible product manufacturing process allows for custom product design with the highest quality and precision you demand. TR Electronic provides local service and support with North American factory trained technicians who are ready to assist you.

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