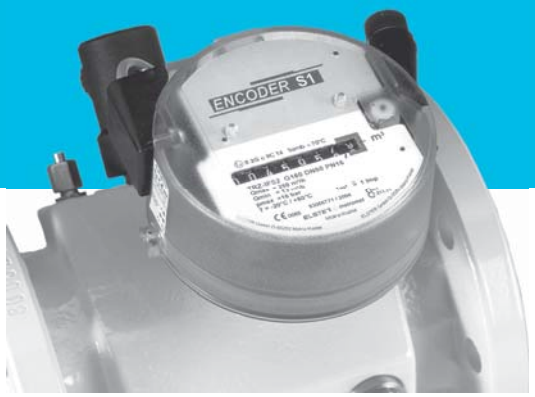
Absolute-ENCODER S1/D

Electronically readable mechanical index



Applications

The Absolute-ENCODER index is an ideal combination of mechanical and electronic indexes for the improvement of data quality between gas meters and follow-up system

Brief information

In this system, the individual drums of the mechanical index are scanned opto-electronically. The readout process of the Absolute-ENCODER thus is equivalent to the manual readout of the mechanical index on site. It does not require its own power supply, because it is a normal mechanical index. By means of the optionally selectable interface variation the described technology can be adapted flexibly to the application.

Operation: The individual drums of the mechanical index are scanned opto-electronically. For this purpose, the individual drums have three slots, which are of different lengths and are ordered asymmetrically. Five beams of light then scan the slots to determine their position. The slots are ordered in such a way that every position of the drum and thus the number on each drum is clearly identifiable.
The light barriers consist of phototransistors; LEDs and photoconductors, which are all, scanned and evaluated one after the other. The light barriers are controlled and evaluated by a controller. This controller exactly defines the position of each individual number on the roller and transfers this as part of a pre-defined protocol to the supplementary device (e.g. volume corrector, data logger or bus-system) via the electrical interface.
Depending on the interface type the protocol contains additional meter data, e.g. meter number or meter size. By use of the "plug and play" system a later parameterising is not necessary in such cases.

Interface variations: With three interface variations the Absolute-ENCODER can be used flexibly in connection with different devices and selected also over bus systems. The associated hardware is implemented on a separate circuit board and thus enables individual adjustment to the applications.

Namur - Unidirectional serial interface for direct connection on EK260, DL210, gas-net or Model 2000 (level correspond to the standard EN 60947-5-5).

M Bus - Particularly suitable for connecting several meters to an electronic evaluation device, e.g. within the industrial range or also within the domestic metering.

SCR * - Low power interface works with a protocol in accordance with IEC-62056-21 (formerly IEC 1107) and is already quite common in water meters. With the help of a small, separate, external wiring system the SCR interface can be made compatible with the CL interface.

* System for Communication and Readout of Meters

Main features

- Opto-electronic readout of the mechanical original meter reading
- Remote data readout of the mechanical index
- No power supply required
- PTB approval as main index for all Elster-Instromet RVG, IRM, TRZ2, SM-RI, Q and Q75
- PTB approval as top index on the mechanical take-off
- PTB approval as add-on Index on an instrument drive
- Add-on index available as single index or double index (for universal rotating direction)
- Unrestricted validity of calibration
- ATEX approval
- Different data interfaces available
- Protection class IP67
- Maintenance-free

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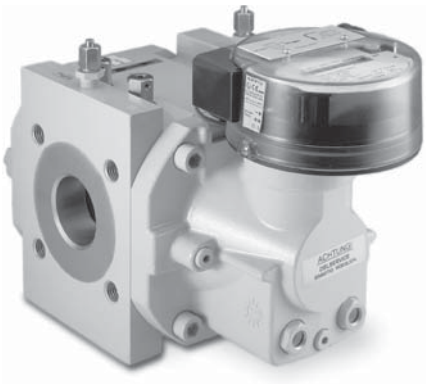
Absolute ENCODER S1: Electronically readable mechanical index

Technical data		
	ENCODER S1 Single index	**ENCODER S1D Double index**
Number of drums	8	8
Temperature range	-20 °C to +60 °C	-20 °C to +60 °C
Protection class	IP 67	IP 67
Interfaces	NAMUR (II 2G EEx ia IIC T4)	NAMUR (II 2G EEx ia IIC T4)
ATEX approval	SCR (II 2G EEx ib IIB T4)	SCR (II 2G EEx ib IIB T4)
M-Bus		
Meter types	TRZ2, SM-RI, Q, all sizes	RVG, IRM-1, IRM-3 DUO
LF-pulser	Optional or retrofit INS-10, INS-11, INS-12 U_{max} = 24 V, I_{max} = 50 mA, P_{max} = 0,25 VA, R_i = 100 Ω (series resistor)	Optional or retrofit INS-10, INS-11, INS-12 U_{max} = 24 V, I_{max} = 50 mA, P_{max} = 0.25 VA, R_i = 100 Ω (series resistor)
Additional specifications ENCODER top		
Torque	0.2 Nmm	0.2 Nmm
Maximum rotation speed of the instrument drive	1 Hz	1 Hz
Mechanical take-off	According to EN 12261	According to EN 12261
Take-off value TR	0,1 - 1 - 10	0,1 - 1 - 10
Decimal places	2 - 1 - 0	2 - 1 - 0

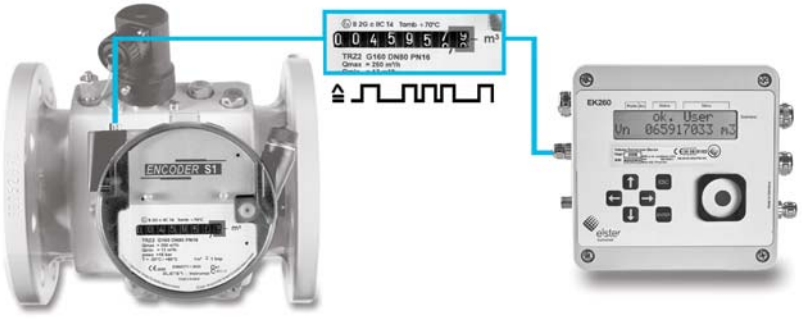
Typical area of application

TRZ2 + ENCODER S1



RVG + ENCODER S1D

Typical application example Namur interface



Schematic representation of transferring the original meter reading via Namur interface to the battery-powered EK260 volume corrector

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