

HAND THROTTLE - Metis Series

METIS Series Hand Throttle - Presentation

The innovative Hall-effect hand throttle of the Metis series is designed to ensure maximum reliability for all electrically-powered vehicles endowed with wheelhouse, which require a 0-5 volt analog input proportionate to position in order to interface with the speed control of the engine, in particular for handling and lifting machinery (pallet trucks, forklifts, tractors, tugs, cranes).

The Hall-effect operating principle, the firmware system for the output and the trip threshold, as well as the innovative magnetic-return system make the mechanics of the product extremely simple and reliable (reducing to the essential the presence of contact parts subjected to wear); The accurate and repeatable signal output can be configured by the customer. These characteristics, together with the resin sealing operation and the sealed housing, make the throttle control suitable for use in harsh environments.



POINTS OF STRENGTH

1. **Total immunity against infiltrations**
2. **It doesn't lose calibration** while using the device
3. **No initial calibration** needed
4. **Excellent quality/price ratio**
5. **Cable outlet**

METIS Series Hand Throttle – Distinctive Features

VERSATILITY

- Supply voltage: 5 V; 10-30 V; 12-48V;
- Programmable analog output (standard voltage 0-5V; 0-10V): min-max levels within the supply voltage range;
- Increasing or decreasing inclination angle;
- IVS single (windowed) or double; NO or NC;
- Programmable trip threshold
- Output signal: single or double
- Customizable shaft length
- Customizable cable and connector

RELIABILITY

- Contactless Hall-effect
- Output and IVS managed by the firmware, without contact switches or manual calibrations
- Protection class IP67
- Unlimited life cycle thanks to the magnetic return system
- Reversed polarity protection to ensure that no damages occur to the throttle if connected incorrectly.
- No calibration nor maintenance is required

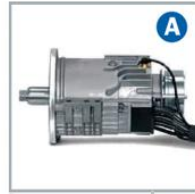
FUNCTIONAL SAFE

- Suitable for safety applications in accordance with the EN ISO13849 standard
- Independent and galvanically-isolated circuits

METIS Series Hand Throttle - Applications

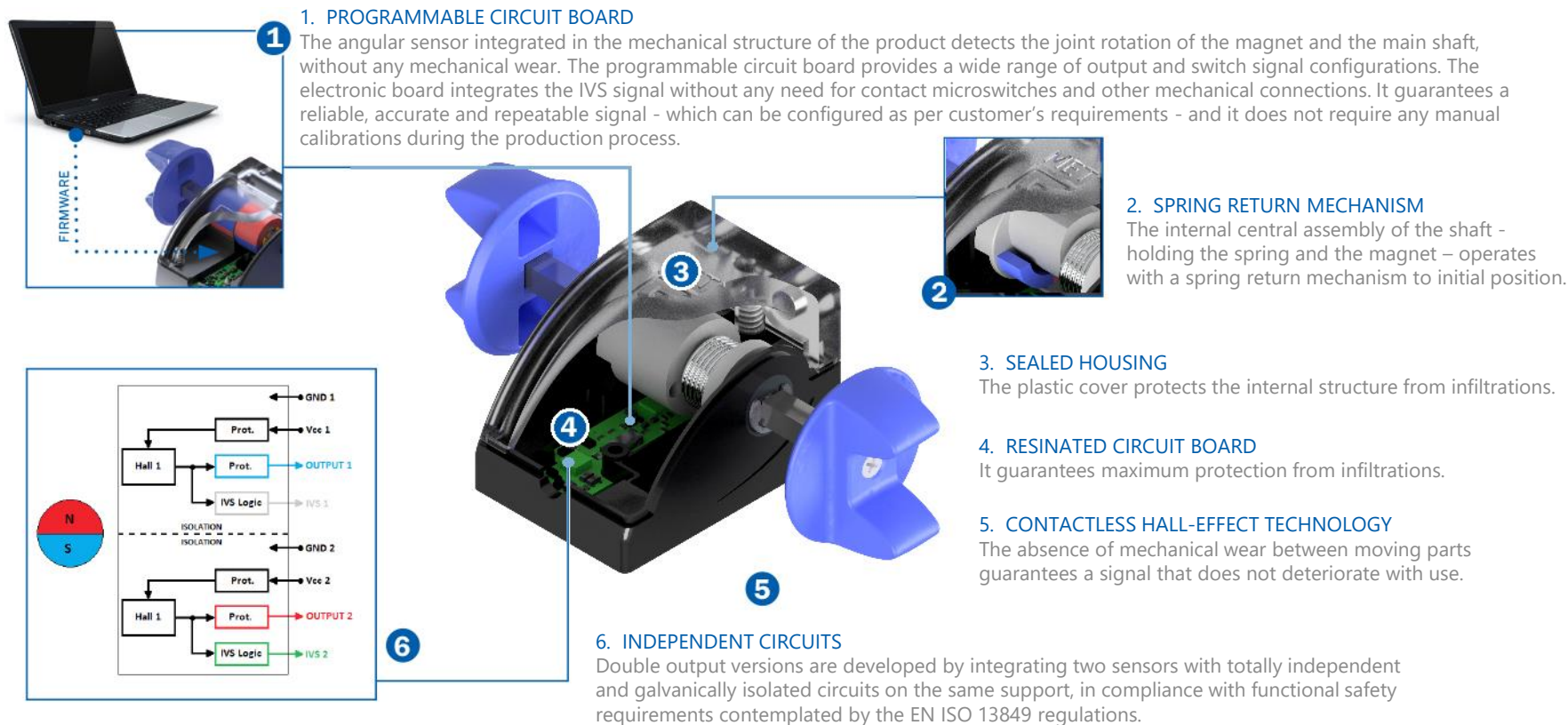
A. Electric motor

B. Wheelhouse



- 2. Pallet trucks
- 3. Fork-lift trucks
- 4. Electric tractors
- 5. Electric cranes

METIS Series Hand Throttle – Constructive characteristics



1. PROGRAMMABLE CIRCUIT BOARD
The angular sensor integrated in the mechanical structure of the product detects the joint rotation of the magnet and the main shaft, without any mechanical wear. The programmable circuit board provides a wide range of output and switch signal configurations. The electronic board integrates the IVS signal without any need for contact microswitches and other mechanical connections. It guarantees a reliable, accurate and repeatable signal - which can be configured as per customer's requirements - and it does not require any manual calibrations during the production process.

2. SPRING RETURN MECHANISM
The internal central assembly of the shaft - holding the spring and the magnet - operates with a spring return mechanism to initial position.


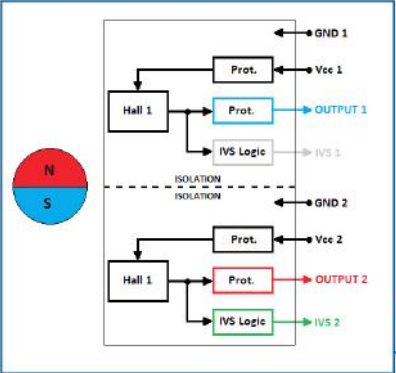
3. SEALED HOUSING
The plastic cover protects the internal structure from infiltrations.

4. RESINATED CIRCUIT BOARD
It guarantees maximum protection from infiltrations.

5. CONTACTLESS HALL-EFFECT TECHNOLOGY
The absence of mechanical wear between moving parts guarantees a signal that does not deteriorate with use.

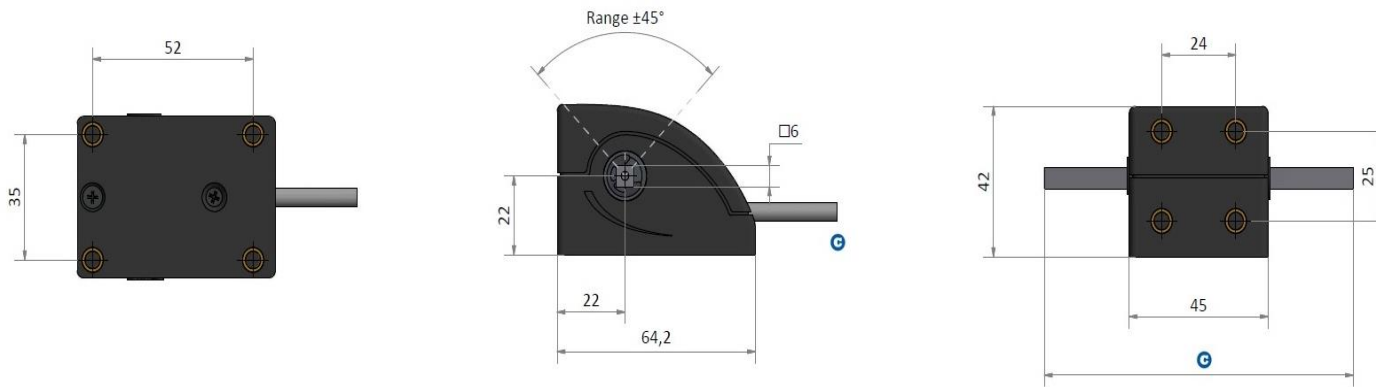
6. INDEPENDENT CIRCUITS
Double output versions are developed by integrating two sensors with totally independent and galvanically isolated circuits on the same support, in compliance with functional safety requirements contemplated by the EN ISO 13849 regulations.

FIRMWARE



METIS Series Hand Throttle – Mechanical characteristics

Standard version



Connectors



TYCO Superseal



TYCO Mate N - Lock



GHW CONI 1



TYCO Econoseal



Souriau UTS series



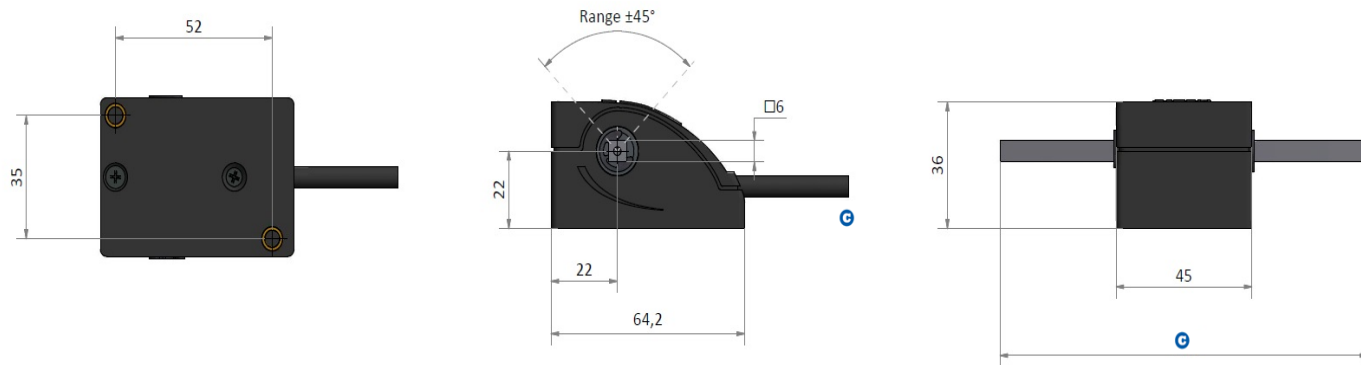
Deutsch



AMP MQS

METIS Series Hand Throttle – Mechanical characteristics

Low-profile version



Connectors



TYCO Superseal



TYCO Mate N - Lock



GHW CONI 1



TYCO Econoseal



Souriau UTS series



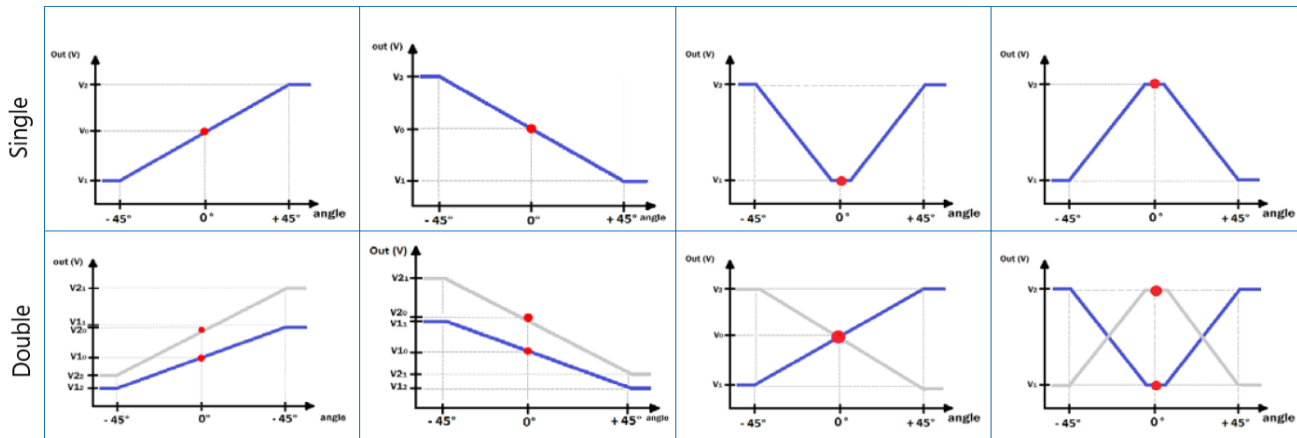
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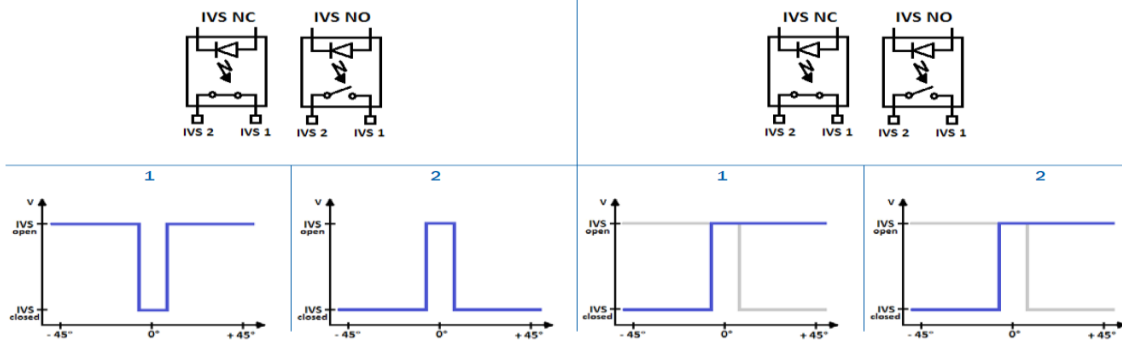
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METIS Series Hand Throttle – Other output configurations

Output Signals



IVS Signals

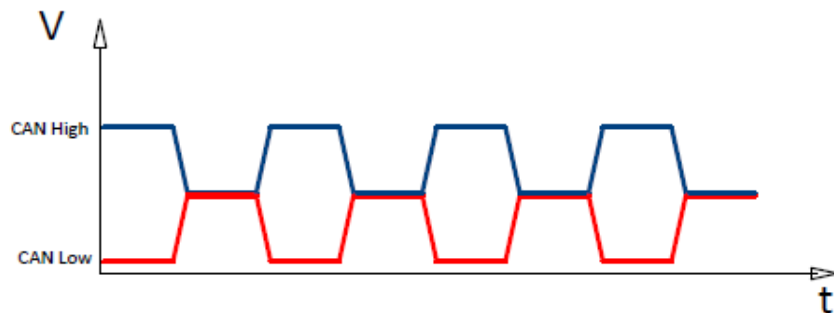


METIS Series Hand Throttle – CAN J1939 Output

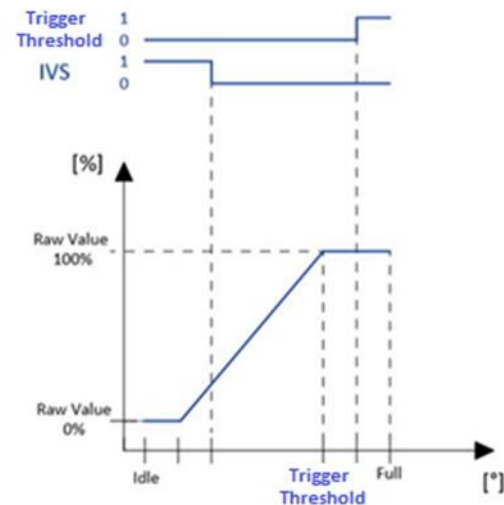
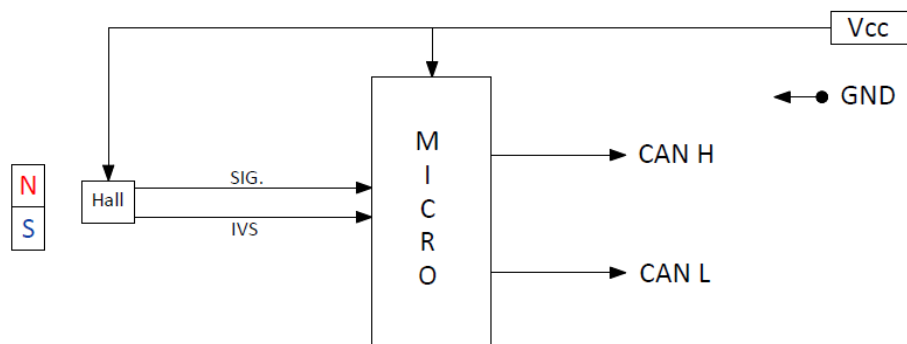
CAN J1939

NEW

Output Signal



Functional Scheme



General features of ELEN products

1. ELEN S.r.l. designs and manufactures hall-effect electronic sensors and input devices **specifically intended for industrial vehicles sector** and load-handling vehicles.
2. Besides a standard products offer, it provides with the most specific and **innovative solutions** for any application, giving particular focus on the most recent R&D developments and promptly meeting the new market needs.
3. The company know-how, the market analysis, the **strong and direct customer relationship** allow to introduce cutting edge solutions in accordance with **sector's standards and regulations**, offering a products portfolio that distinguishes ELEN from its competitors.

