

Hand Throttle with lever

- AXIOS Series -

AXIOS Hand Throttle – Applications

The Axios Lever Control is suitable for a wide variety of applications. In particular, it has been designed for demanding off-road applications. It combines high level of versatility, mechanical robustness and high life cycle.

MAIN FUNCTIONS

- Engine RPM detection
- Hydraulic pump control
- Vehicle speed control
- Vehicle equipment control

FIELDS OF APPLICATION

- Agricultural Machinery
- Construction Machinery
- Lifting vehicles
- Material handling vehicles
- Industrial multi-purpose vehicles



AXIOS Hand Throttle – Distinctive features

MECHANICAL CONFIGURATION

- Integrated compact solution
- Robust plastic core structure
- Metal lever – available in two different standard configurations
- Standard hand grip
- Versatile mechanics: Customizable lever and hand grip; Customizable fixing flange (metal plate)
- Fiction-hold lever: It keeps last position when released
- Travel/Angle of rotation: $60^\circ (\pm 30^\circ)$
- Customizable travel angle
- Plug&Play and easy mounting solution
- Cable outlet
- Cable length and connector type: fully customizable



AXIOS Hand Throttle – Distinctive features

MECHANICAL LAYOUT AND MOUNTING SIZES

1. STANDARD layout and mounting sizes



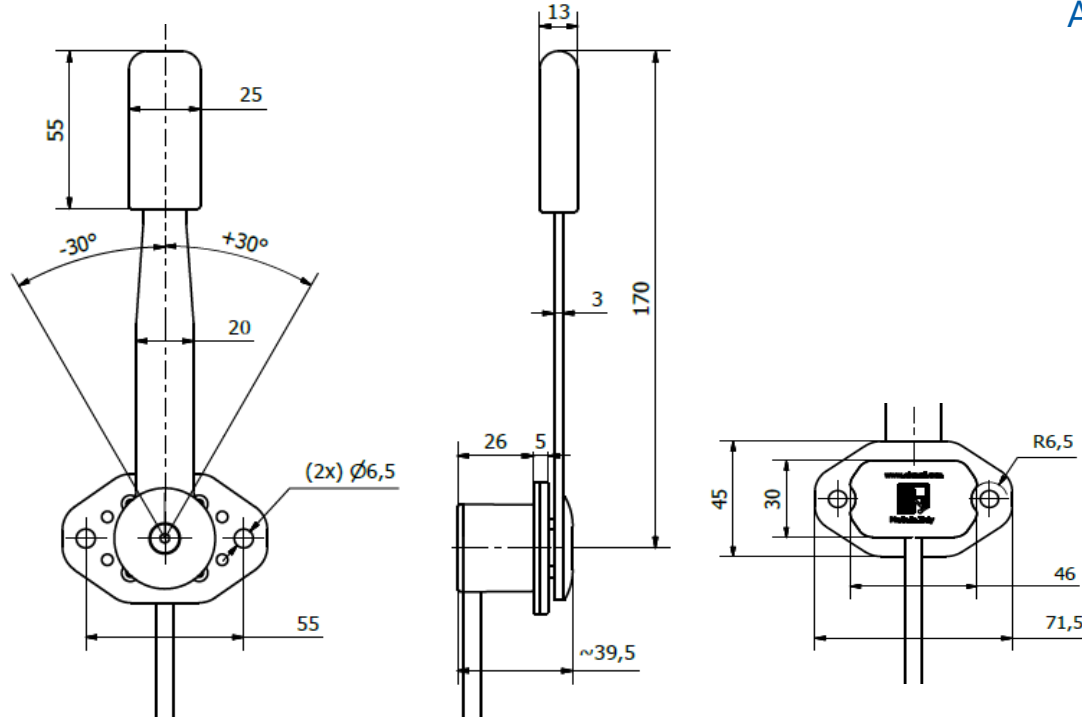
2. ADJUSTABLE mounting sizes



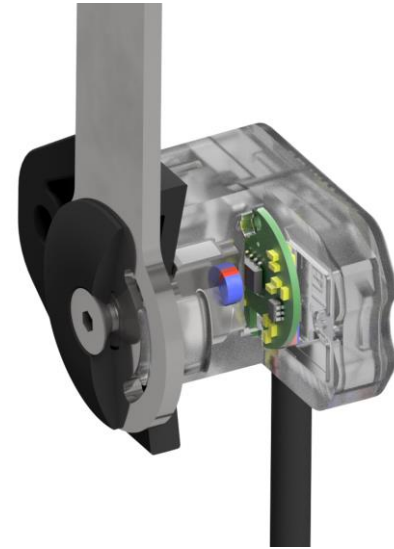
The fixing flange can be realized as a sheet-metal custom element in accordance with specific mounting requirements.

AXIOS Hand Throttle – Distinctive features

MAIN DIMENSIONAL DATA



CONSTRUCTION CHARACTERISTICS AND INTERNAL STRUCTURE



AXIOS Hand Throttle – Distinctive features

ELECTRONIC CONFIGURATIONS

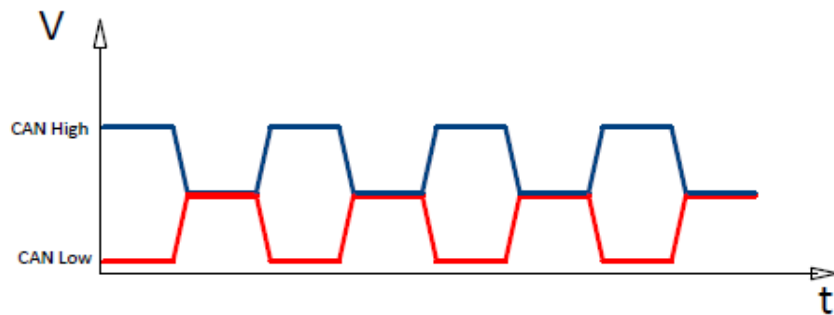
- Versatile electronics: programmable, integrated electronic board
- Supply voltage: 5V; 10-30V
- Single or double output signal
- Programmable analogue output (current or voltage); min.-max. levels within the supply voltage range
- Single or double IVS (N.O. or N.C.); Programmable tripper threshold
- PWM output available; Programmable [%]duty-cycle
- CAN-BUS output option available (SAE J1939 version); Customizable CAN message
- CANOPEN under development

AXIOS Hand Throttle – CAN J1939 Output

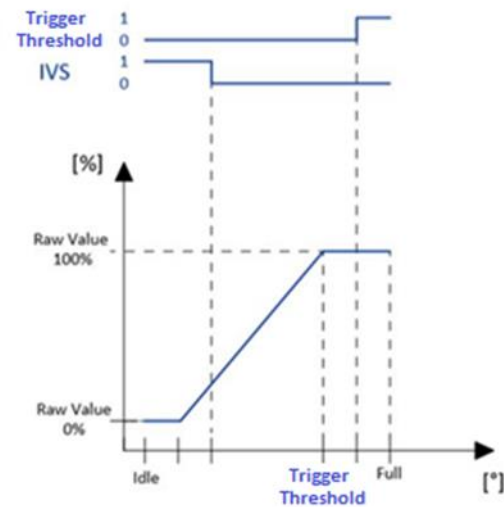
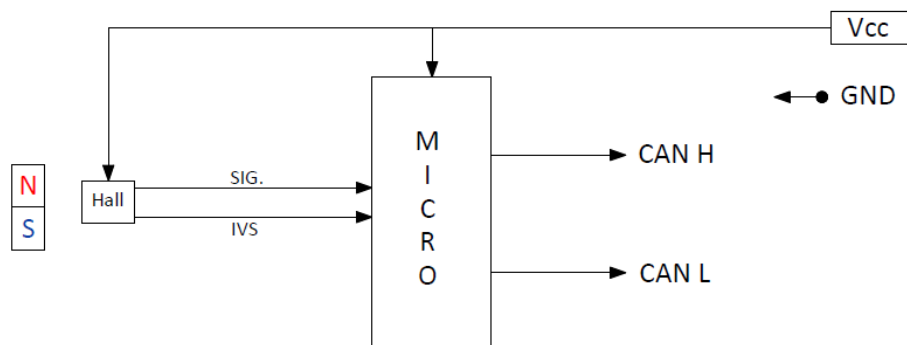
CAN J1939

NEW

Output Signal



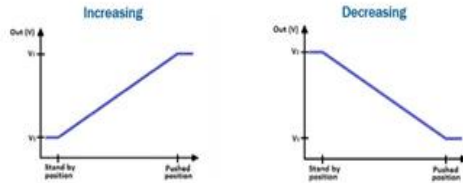
Functional Scheme



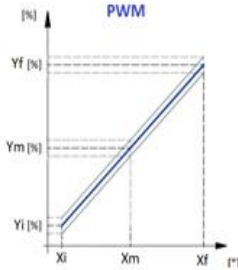
AXIOS Hand Throttle – Other output configurations

SINGLE SIGNAL

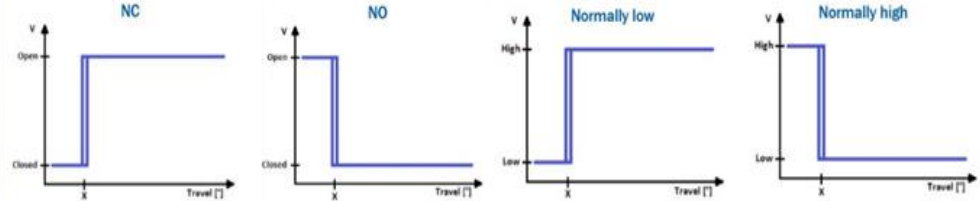
Analogic



PWM

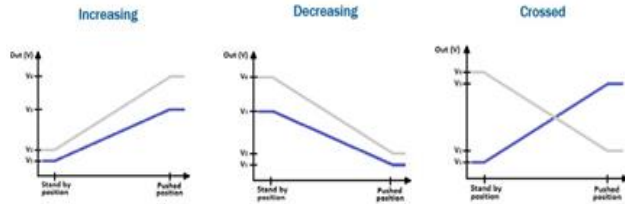


IVS (Idle Validation Switch)

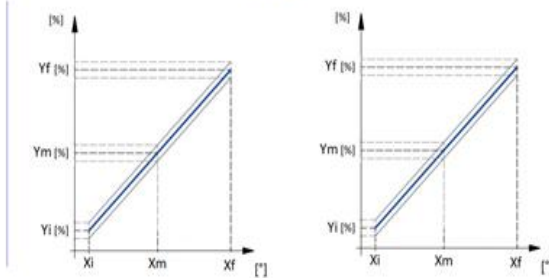


DOUBLE SIGNAL

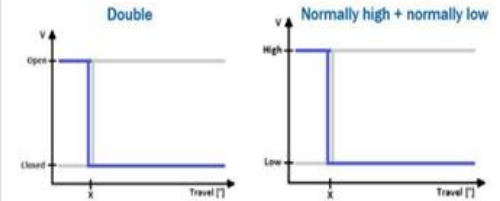
Analogic



PWM



IVS (Idle Validation Switch)



AXIOS Hand Throttle – Overall technical features

HALL EFFECT TECHNOLOGY - CONTACTLESS

An hall-effect sensor, integrated in the core structure, detects the field strength of a magnet integral with the lever. It guarantees a reliable signal, immune to premature failures due to mechanical wear.

INTEGRATED ARCHITECTURE

The magnet - integral with the lever - and the electronic board - integral with the core structure - are located in the optimal position to reduce overall dimensions and remove contact micro-switches as well as redundant mechanical components.

INDEPENDENT CIRCUITS – FUNCTIONAL SAFETY

Double output versions are obtained by integrating on the same electronic support two sensors with completely independent and galvanically isolated circuits, in compliance with functional safety standards (EN ISO 13849)

PROGRAMMABLE ELECTRONIC BOARD

The programmable electronic board allows to set up the output signal values and the trigger threshold for the switch signal without hardware interventions and manual calibrations. It provides a wide range of output configurations and it guarantees the highest level of signal reliability, precision and repeatability.

AXIOS Hand Throttle – Overall technical features

RELIABILITY

- Operating principle: Hall-effect contactless
- Output and IVS are handled by firmware without any contact switch or manual calibration
- IP67 rating
- Operating temperature: -40°C to 85°C
- Immune to vibrations and electromagnetic interferences
- Protection against ESD, load-dump, overvoltage, reverse polarity, short-circuits
- Independent isolated circuits for output redundancy in accordance with Functional Safety standards
- Life cycle over 10 million cycles

