ELEN
industrial vehicles sensors

Electronic Pedal
for Agricultural Machineries
ANTHOS Series

Hard work is our job

ANTHOS Electronic Pedal – Applications

NEW

The Anthos Electronic Gas Pedal is a brand new product in ELEN portfolio.
It has been designed for agricultural machineries, mainly tractors.

It is an integrated pedal that combines mechanical robustness and reliability; It is suitable to be used in harsh environments under severe and demanding conditions.

MAIN FUNCTIONS

- Accelerator pedal for electronically driven heat-engines subjected to emission standards (Tier IV Final, Stage V)
- Accelerator pedal for electrically driven vehicles

FIELDS OF APPLICATION

- Agricultural tractors
- Telehandlers for agricultural applications
- Other agricultural machineries

ANTHOS Electronic Pedal – Distinctive features

NEW

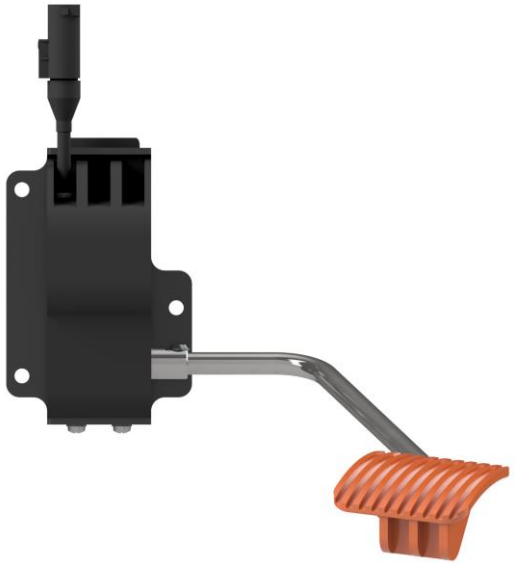
MECHANICAL CONFIGURATIONS

- Integrated solution
- Robust plastic core structure
- Metal lever
- Standard footboard RAL2004
- Customizable lever and footboard
- Pedal travel: 17°
- Plug&Play and easy mounting solution
- Customizable fixing flange
- Cable output
- Cable lenght and connector type: fully customizable
- Fully interchangeable with other solutions on the market

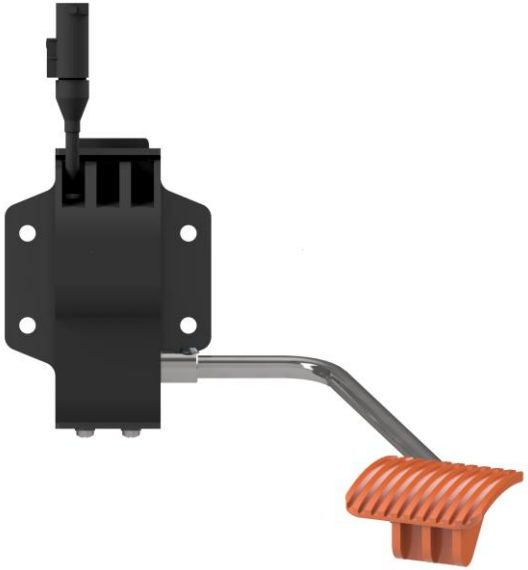
ANTHOS Electronic Pedal – Distinctive features

MECHANICAL LAYOUT AND MOUNTING SIZES

1. STANDARD layout and mounting sizes



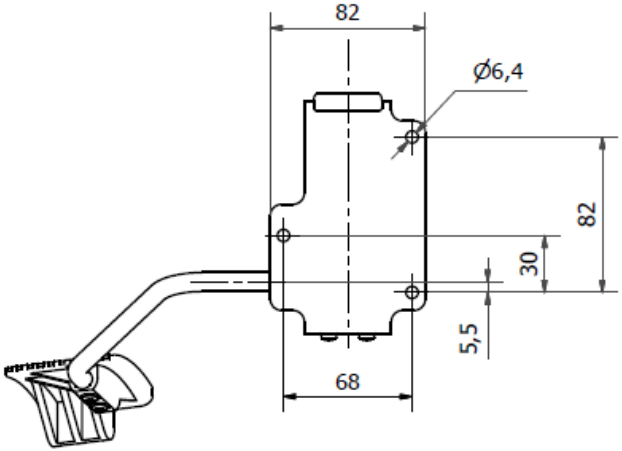
2. ADJUSTABLE mounting sizes

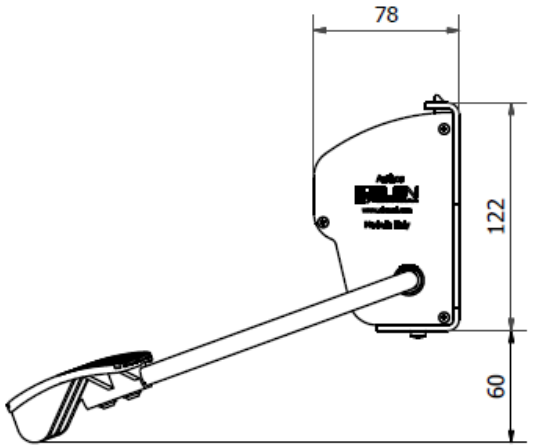


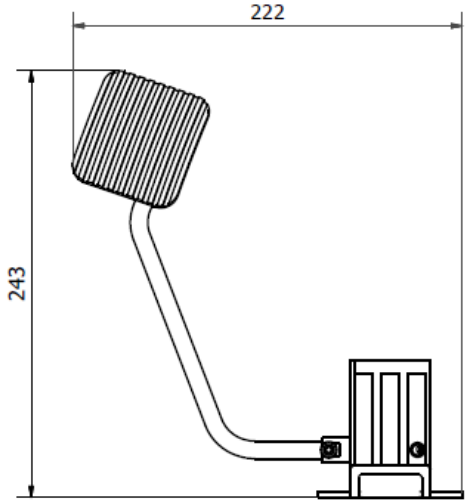
The fixing flange can be realized as a sheet-metal custom element in accordance with specific mounting requirements

ANTHOS Electronic Pedal – Distinctive features

MAIN DIMENSIONAL DATA







ANTHOS Electronic Pedal – Underfloor mounting version

MECHANICAL LAYOUT

ANTHOS Electronic Pedal – Underfloor mounting version

APPLICATIONS

ANTHOS Electronic Pedal – Distinctive features

CONSTRUCTION CHARACTERISTICS AND INTERNAL STRUCTURE

HALL EFFECT TECHNOLOGY - CONTACTLESS

An hall-effect sensor, integrated in the core structure of the pedal, 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 foodboard - and the electronic board - integral with the core structure - are located in the optimal position to reduce overall dimensions and remove contract micro-switches as well as redundant mechanical components.

ANTHOS Electronic Pedal– Distinctive features

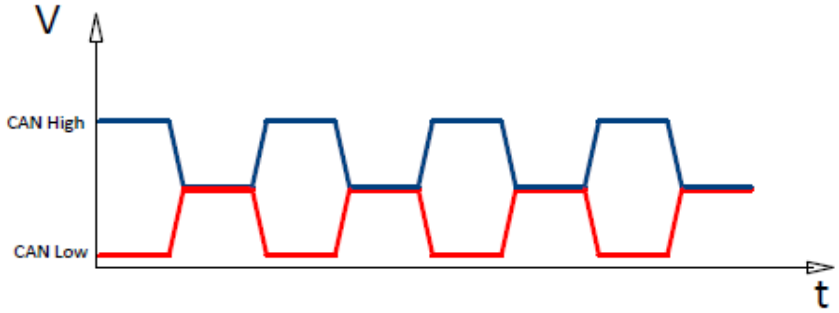
ELECTRONIC CONFIGURATIONS

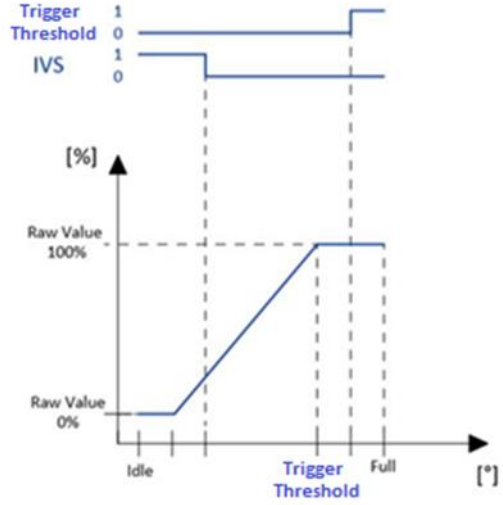
- Versatile electronics: programmable, integrated electronic board
- Supply voltage: 5V; 10-30V
- Single or double output signal
- Programmable analogue output (current or voltage); min.-max. levels within the supply voltage range
- Single or double IVS (N.O. or N.C.); Programmable tripping threshold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

ANTHOS Electronic Pedal – CAN J1939 Output

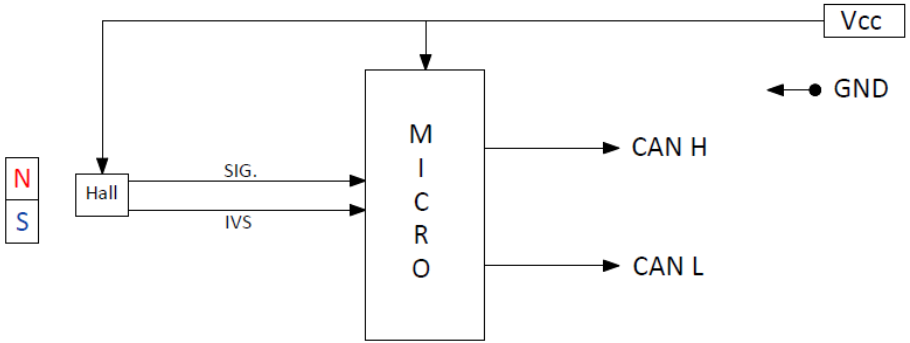
CAN J1939

Output Signal





Functional Scheme

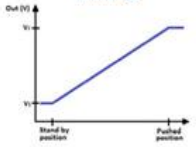


ANTHOS Electronic Pedal– Other output configurations

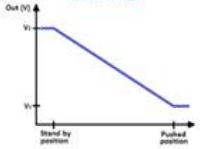
SINGLE SIGNAL

Analogic

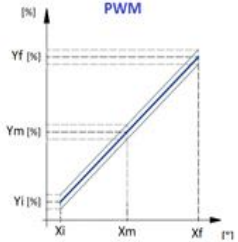
Increasing



Decreasing

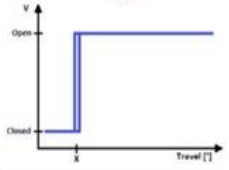


PWM

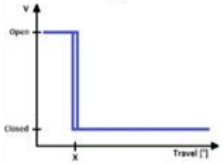


IVS (Idle Validation Switch)

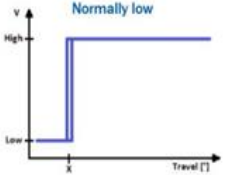
NC



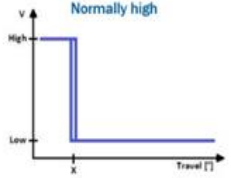
NO



Normally low



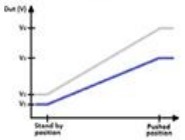
Normally high



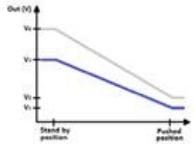
DOUBLE SIGNAL

Analogic

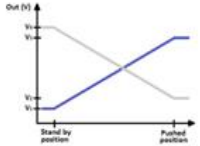
Increasing



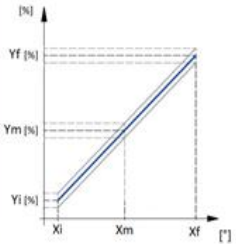
Decreasing

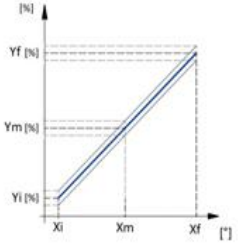


Crossed



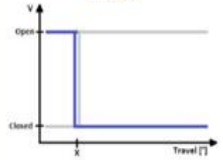
PWM



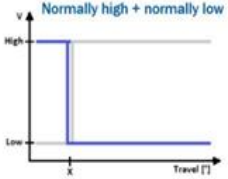


IVS (Idle Validation Switch)

Double



Normally high + normally low



ANTHOS Electronic Pedal – Overall technical features 1/2

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.

ISOLATION OF THE ELECTRONIC BOARD

The compartment for the positioning of the electronic board is obtained from the housing structure in order to ensure total isolation from external environment and maximum mechanical robustness, at the same time.

RESIN-COATED BOARD COMPARTMENT

It ensures absolute impermeability to water/dust/corrosive agents infiltrations and makes the electronic board compartment a completely sealed subassembly of the product structure.

ANTHOS Electronic Pedal – Overall technical features 2/2

RETURN TO STARTING POSITION

It is implemented to maintain the minimum overall dimensions and at the same time to guarantee The redundancy of the springs, a suitable operating load as well as a high life cycle.

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