

# Low-profile Electronic Pedal KOSMOS Series

# KOSMOS Electronic Pedal – Applications

The KOSMOS Electronic Pedal is a brand new product in ELEN portfolio.

It has been designed for industrial vehicles and indoor vehicles. Thanks to its low-profile it is placed and fixed underfloor very closed to the platform.

This pedal is particularly suitable to be installed on vehicles with limited spaces. It combines mechanical robustness and reliability.

## MAIN FUNCTIONS

- Accelerator pedal for electronically driven heat-engines
- Accelerator pedal for electrically driven vehicles

## FIELDS OF APPLICATION

- Forklifts
- Telehandlers
- Multifunction vehicles
- Electrical vehicles
- Forestry machines
- Compact loaders



# KOSMOS Electronic Pedal – Distinctive features (1/5)



## MECHANICAL CONFIGURATIONS

- Low-profile floor type pedal
- Space saving solution
- Ergonomic design
- Robust plastic structure
- Pedal travel: 25°
- Easy mounting solution
- Mounting under the cabin platform: only the footboard emerges
- Customizable fixing flange
- Customizable footboard
- Cable output
- Cable length and connector type: fully customizable

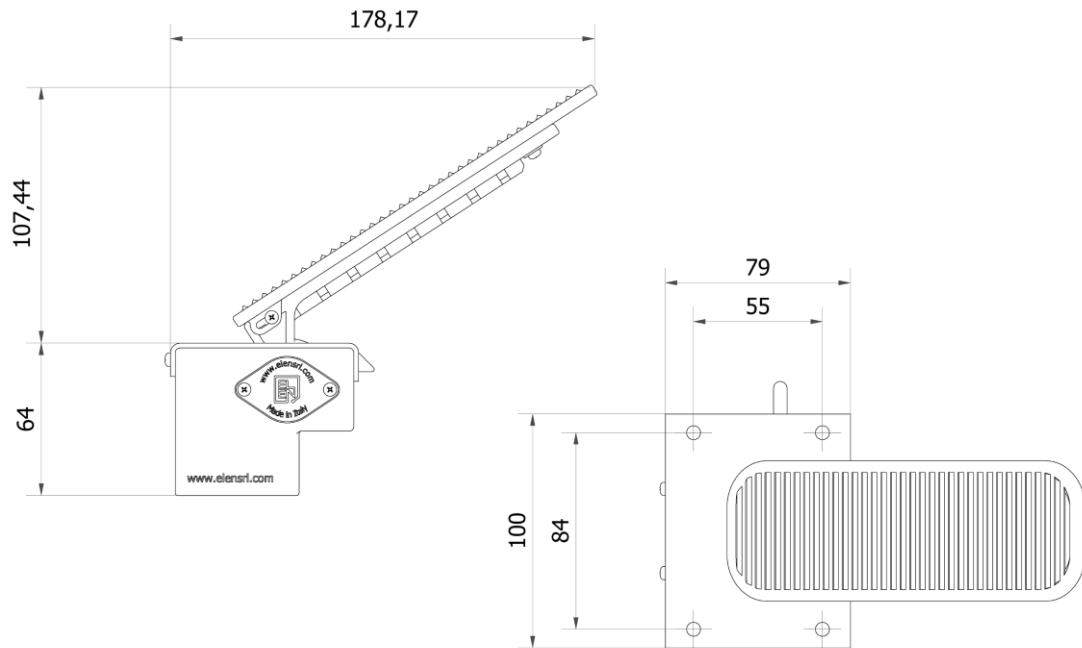


# KOSMOS Electronic Pedal – Distinctive features (2/5)

## CONSTRUCTION CHARACTERISTICS AND INTERNAL STRUCTURE



## MAIN DIMENSIONAL DATA



# KOSMOS Electronic Pedal – Distinctive features (3/5)

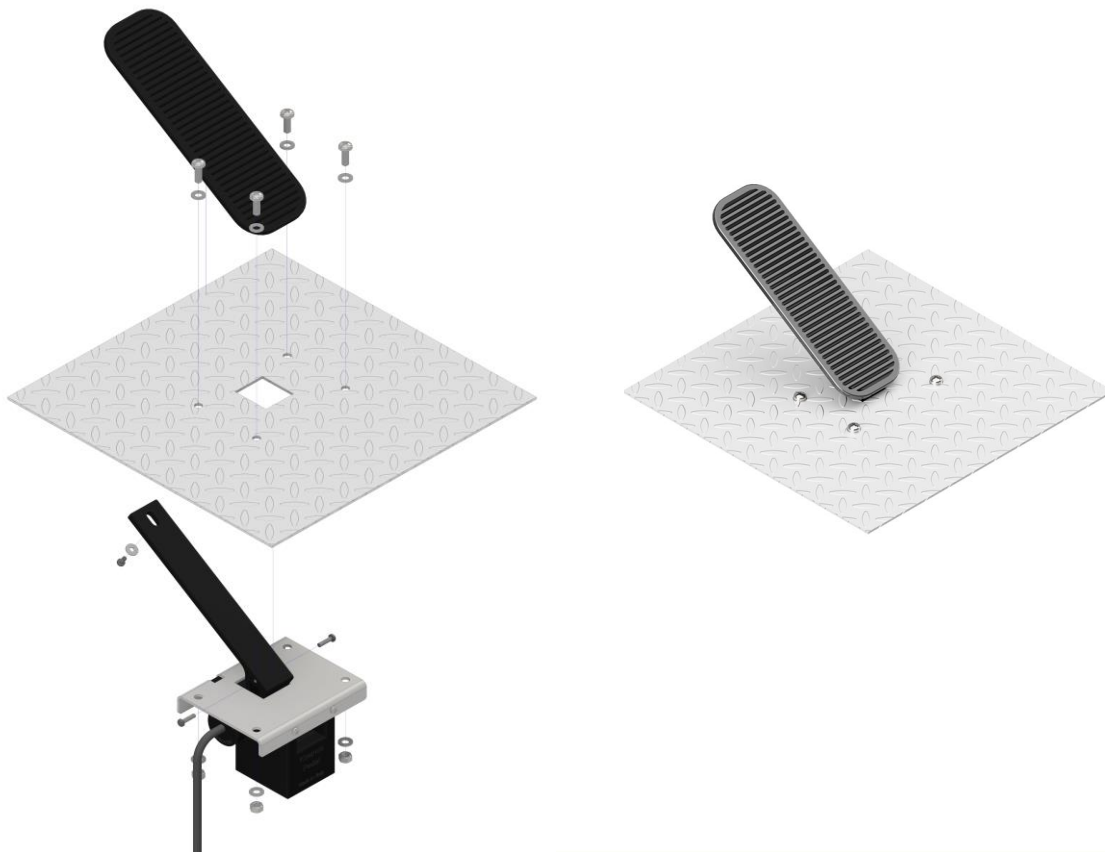
## INSTALLATION

Step 1 :

The pedal structure is placed and installed under the cabin platform, then fixed with screws on the platform.

Step 2 :

The footboard is mounted and fixed on the bracket that emerges from the cabin platform.



# KOSMOS Electronic Pedal – Distinctive features (4/5)

## MECHANICAL LAYOUT AND MOUNTING SIZES

1. STANDARD layout and mounting sizes



2. ADJUSTABLE mounting sizes:



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

# KOSMOS Electronic Pedal– Distinctive features (5/5)

## ELECTRONIC CONFIGURATIONS

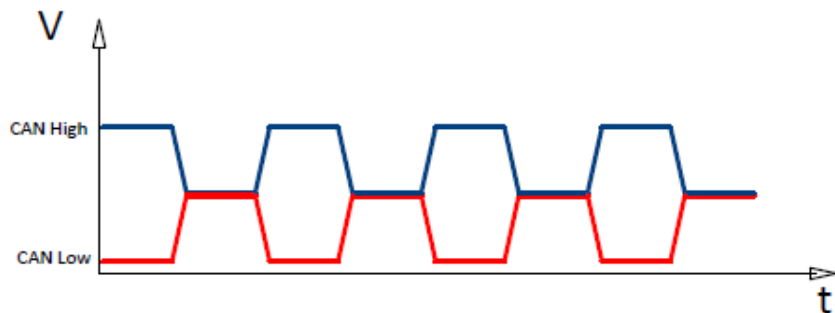
- Versatile electronics
- Supply voltage: 5V; 10-30V
- Single or double output signal
- Programmable analogue output (current or voltage); min.-max. levels within the supply voltage range
- Single or double IVS (N.O. or N.C.); Programmable tripping threshold
- PWM output available; Programmable [%]duty-cycle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

# KOSMOS Electronic Pedal – CAN J1939 Output

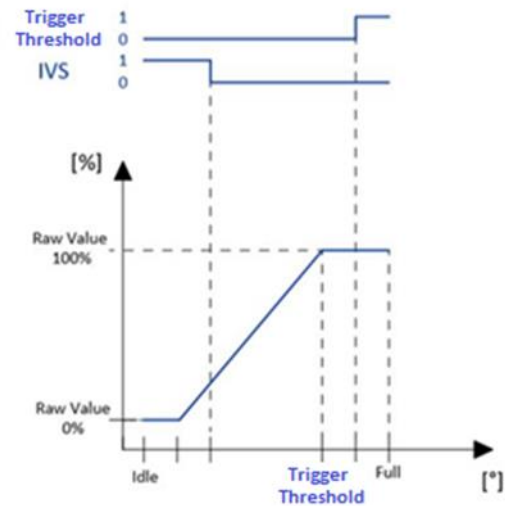
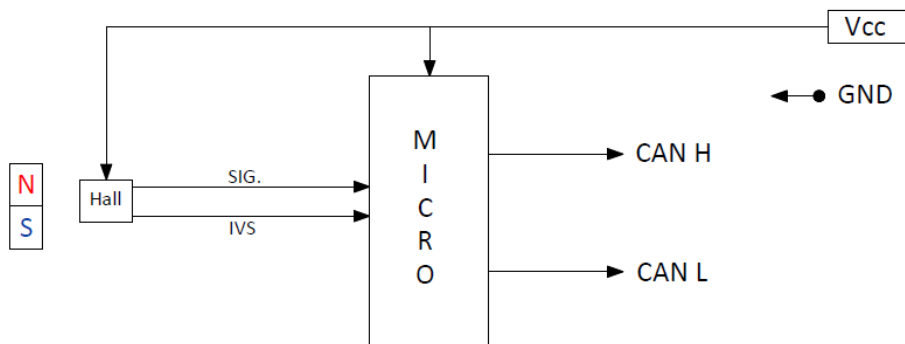
## CAN J1939

NEW

### Output Signal



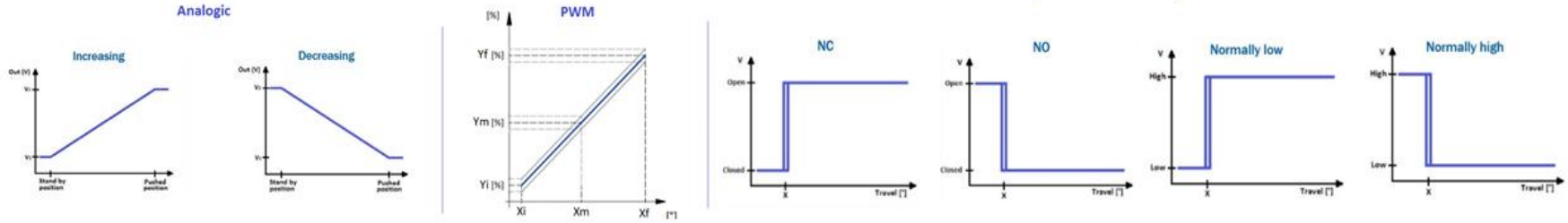
### Functional Scheme



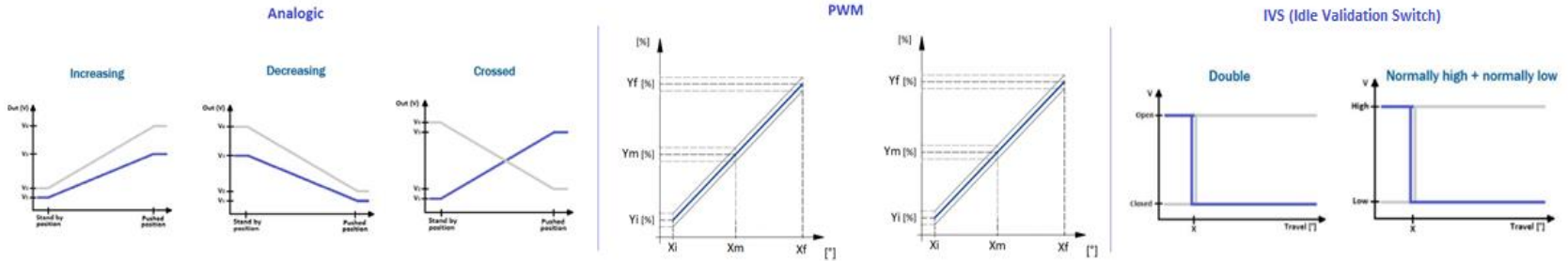


# KOSMOS Electronic Pedal– Other output configurations

## SINGLE SIGNAL



## DOUBLE SIGNAL



# KOSMOS Electronic Pedal – Overall technical features 1/2

## HALL EFFECT TECHNOLOGY - CONTACTLESS

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

## 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 electronic board is placed in a separate compartment, ensuring total isolation from external environment and mechanical robustness.

# KOSMOS Electronic Pedal – Overall technical features 2/2

## 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.

## RETURN TO STARTING POSITION

It is implemented to maintain the minimum overall dimensions and at the same time to guarantee the redundancy of the spring, 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

