



Multifunctional Control Module for Mobile Machinery Equipment





This module is designed for data input, sensor monitoring, electronic device control, and status indication. Input is performed via tactile buttons with programmable functions, while external devices are controlled through high-power outputs supporting a wide load range. Clear data visualization is provided by a bright color display with customizable interfaces for specific tasks. The device supports CAN bus integration (J1939) for seamless communication with other vehicle systems or industrial equipment.



Key Features:

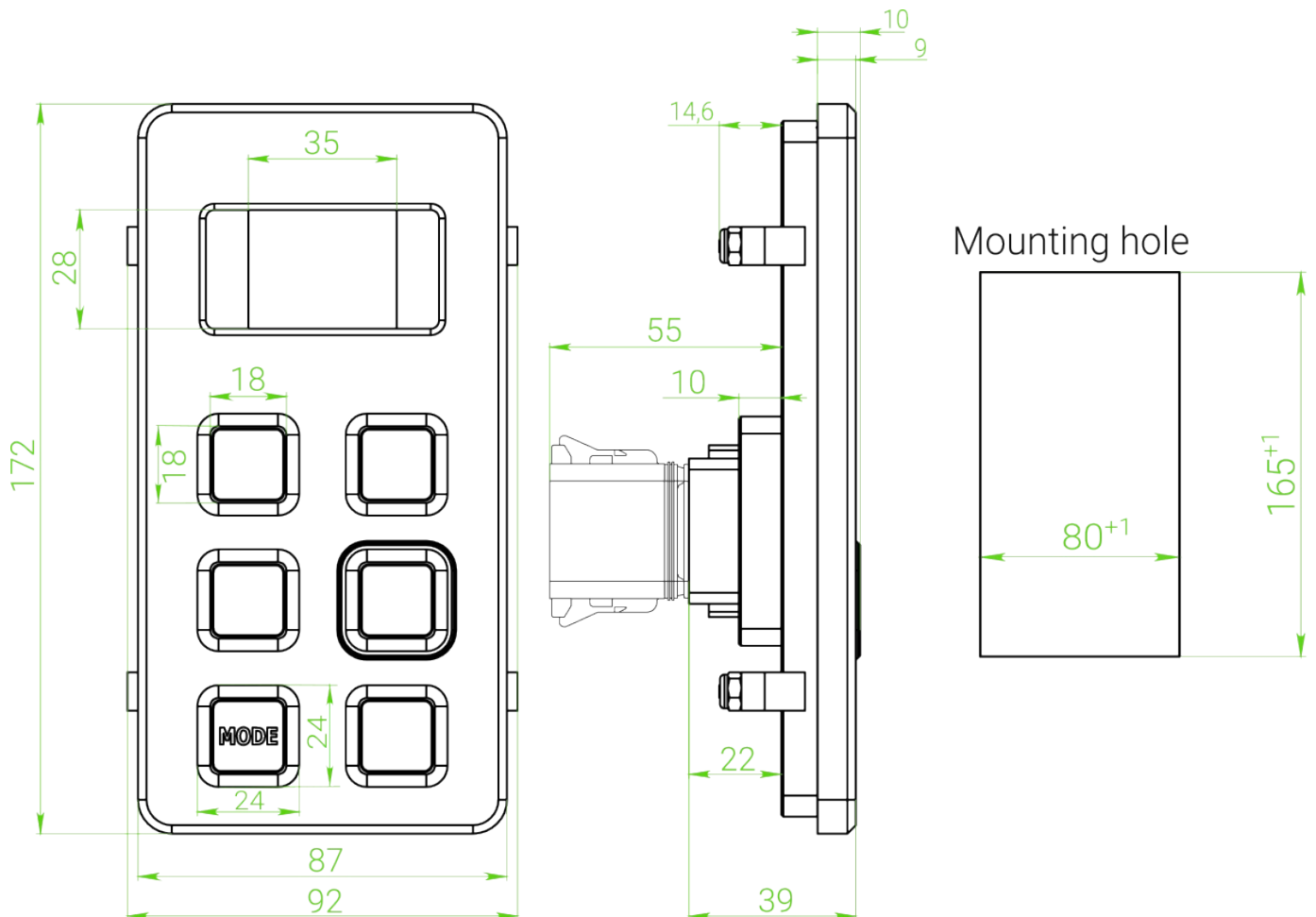
Rugged Construction – Durable buttons, clear indicators, IP65 enclosure.

Custom labels – Configurable for project-specific requirements.

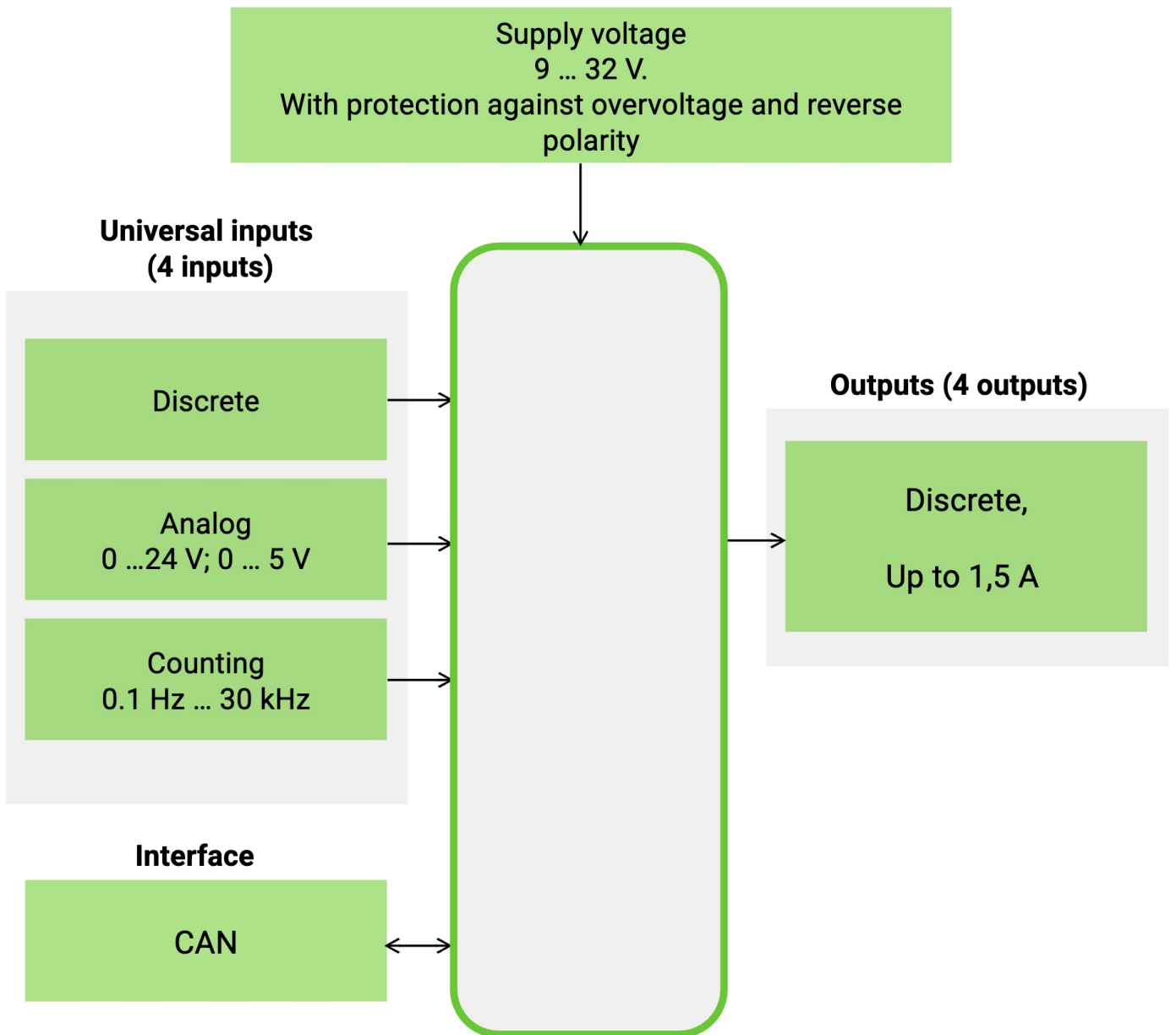
CAN System Integration – On/off, reset, and confirmation functions.

Flexible Configuration – Both hardware and software customization.

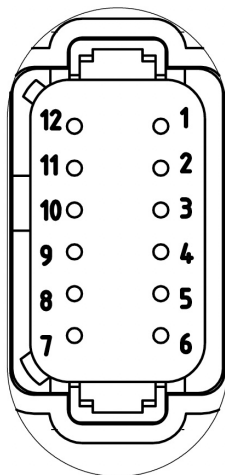
Overall Dimensions



I/O Block Diagram



Device connector pins



1	CAN H
2	CAN L
3	Input ACD-1
4	Input D-4
5	Input D-3
6	Power supply (+V)
7	GND
8	Output D-2
9	Output D-1
10	Input ACD-4
11	Input ACD-3
12	Input ACD-2

Legend:

ACD – analog-counter-discrete;
D – discrete

Technical specifications

Core	
CPU	32-bit, ARM Cortex-M4, 128 MHz
RAM	3072 kb
Flash memory	192 kb

Outputs	
Discrete	4 outputs, (24 V, max. current 1,5 A)

Display	
Resolution	128x160
Brightness	500 кд/м ²
Technology	TFT (color)
View angle	60° horizontal

Interface	
CAN	1 CAN, ISO 11898, 2.0 A/B, SAE J1939 (without 120 ohm termination resistor)
USB	Available with KN-1 kit (separate device)

Control buttons	
Number	6 momentary buttons
Feedback	mechanical click
Actuation force	3 ... 4 N
Button travel	0,8 mm
Maximum allowable force	30 N
Backlight	Two-color options: - Inactive: white - Active: green - Custom (upon request)
Durability	1 million press cycles

Operating conditions	
Supply voltage range	8 ... 32 V
Rated supply voltage	12 or 24 V
Minimum current consumption	30 mA
Max. current	7 A
Operating temperature range	-40 ... +65 °C

Outputs	
Universal	4 inputs, each configurable as: Analog: 0...5 V or 0...24 V (selectable range) Discrete: 0...24 V Counter: Frequency input (0.1 Hz – 30 kHz)

Housing and connection	
Connector type	12-pin AT06-12SA
Protection degree	IP65
Housing material	aluminum alloy D16T with protective coating (powder paint or anodizing)
Dimensions	172x87x39 mm
Weight	400 g

Backlight control and diagnostics

Standard J1939 protocol messages are used to control the backlight:

pgn53248 - Cab Illumination Message	
Transmission Repetition Rate	on change of state, but not faster than 100 ms, and every 5 s
Data Length / page	8 byte / 0
PDU Format	208
PDU Specific	DA
Default Priority	6
Parameter Group Number	53248 (00D000 16)

spn1487 - Illumination Brightness Percent	
Data Length	1 byte
Resolution	0.4 %/bit , 0 offset
Vehicle Application Layer	J1939-71
Data Range	0 to 100 %
Type	Status
Suspect Parameter Number	1487
Parameter Group Number	[53248]

Manual adjustment of the backlight brightness is done by simultaneously pressing "Mode" and +/-



Switching to diagnostic mode is done by simultaneously pressing "Mode" and the middle key on the right



Application scenarios



Tire pressure control systems

The driver selects surface type (asphalt, off-road, sand) via the control buttons. An ON/OFF button automatically vents the air supply lines.



Engine speed control

The panel interfaces with the engine ECU through CAN (J1939 protocol).

Buttons allow to:

- Select engine operating modes.
- Toggle automatic RPM regulation.
- Start/stop engine rotation.



Gear selector functions

Integrated with the gearbox and vehicle systems via CAN (J1939).

Button functions include:

- Drive (D), Neutral (N), Reverse (R) selection.
- Lock button to prevent accidental shifting.



Control and indication devices according to individual design

Depending on configuration, the buttons can control specialized functions:

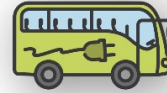
- Activating auxiliary equipment.
- Selecting operational modes.
- Managing hydraulic and other CAN-connected systems.

Scope of applications

Bus



Electric bus



Trucks



Municipal



Fire trucks



Railway





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