

MMX IOS

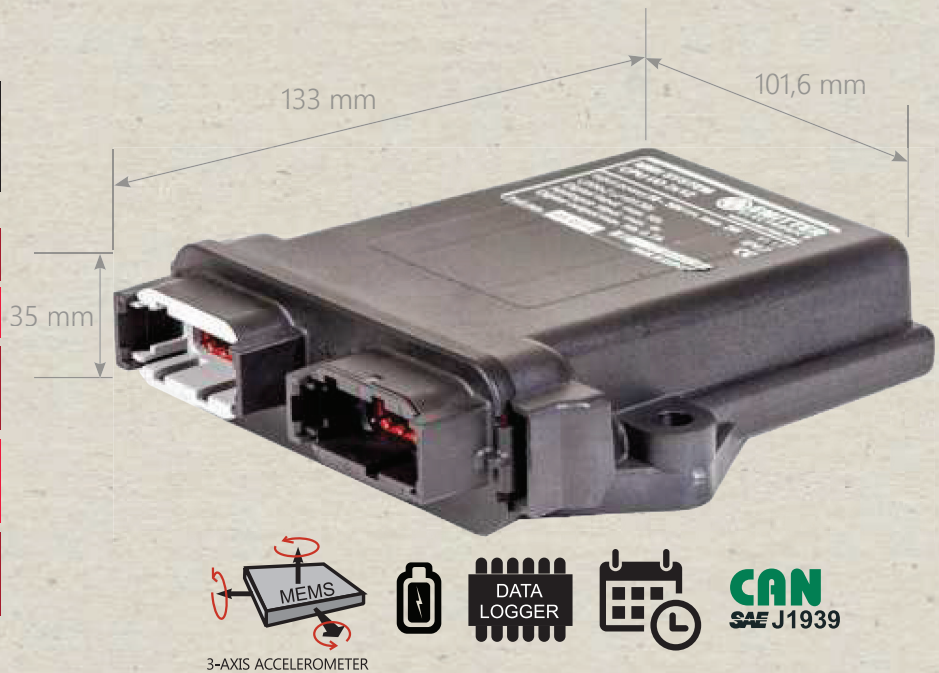
E-CAN, J1939, CAN OPEN

16 UNIVERSAL PINS

POSITIVE, NEGATIVE, TRISTATE
OR PWM OUTPUTS

POSITIVE, NEGATIVE, ANALOGUE,
RTD OR RPM INPUTS

EXTENSION OPTIONS: DATA
LOGGER, RF, RS232, RS485



Black Connector: Pin Description

Pin	Type	Options			
1	Fixed	Battery +			
2	Fixed	Battery +			
3	Fixed	CAN Low			
4	Configurable	CAN Low	J1939 CAN Low		
5	Configurable	Analogue Input	Digital Input +/-	Digital Output +	
6	Configurable	Analogue Input	Digital Input +/-	Digital Output +	
7	Configurable	Analogue Input	Digital Input +/-	Digital Output +	RTD
8	Configurable	Analogue Input	Digital Input +/-	Digital Output +	
9	Configurable	CAN High	J1939 CAN High		
10	Fixed	CAN High			
11	Fixed	Battery -			
12	Fixed	Battery -			

Features / Advantages

- Designed for use in automotive or industrial equipment applications.
- Several IO Nodes coexistence is provided.
- Easy extensible with other MMX modules, such as level gauges, keyboards, pressure governor, displays, etc.
- Each signal pin is configurable to input or output.
- Up to 16 pins can be configured as digital inputs with ground or battery + activation.
- Up to 16 pins can be configured as digital outputs, 8 with positive polarity and the other 8 as tri-state outputs (high side, low side, open).
- Output overcurrent, overvoltage, thermal and reverse polarity protection.

IO Node-Controller

MMX IO node provide a smart solution for defining operation of different kind of vehicle consumers. Sensors, switches, CAN messages and other inputs can be easily connected.

Besides, other MMX modules data as keyboards, a pump governor, etc. can take part in defining outputs operation. Several IO nodes can be connected over Emitter CAN to collaborate.

IO nodes-controllers needs to be configured with Emitter Electronics MMX PC configuration tool. A Standard IO Node has two 12 pin connectors. Almost all pins are configurable. Black Connector is dedicated to power supply and CAN support as well as, among others, to analogue inputs. On the other hand, Grey connector offers 12 pins for digital inputs or outputs.

Grey connector: Pin Description

Pin	Type	Options			
1	Configurable	Digital Input +/-	Digital Output +/-	PWM	
2	Configurable	Digital Input +/-	Digital Output +/-	PWM	
3	Configurable	Digital Input +/-	Digital Output +/-	PWM	RS485, Relay, etc (via UART)
4	Configurable	Digital Input +/-	Digital Output +/-	PWM	RS485, Relay, etc (via UART)
5	Configurable	Digital Input +/-	Digital Output +/-	PWM	relay, etc (via SPI)
6	Configurable	Digital Input +/-	Digital Output +/-	PWM	relay, etc (via SPI)
7	Configurable	Digital Input +/-	Digital Output +/-	PWM	DAC, Relay, etc (via I2C)
8	Configurable	Digital Input +/-	Digital Output +/-	PWM	DAC, Relay, etc (via I2C)
9	Configurable	Digital Input +/-	Digital Output +		
10	Configurable	Digital Input +/-	Digital Output +		
11	Configurable	Digital Input +/-	Digital Output +		
12	Configurable	Digital Input +/-	Digital Output +		

- Output current of each output pin is limited to 1 A.
- Acquisition of 4 analogue values is supported with several signal ranges: 4 – 20 mA, 0 – 5 V, 0 – 10 V.
- Sealed and compact enclosure with industry standard Deutsch connectors.
- Integrated dual CAN, one of them with SAE J1939 support.
- Highly configurable via software tool with diagnostic and simulation support.
- Incremental output shedding capability.
- Supply voltage 8 – 30 V DC.
- Industrial temperature range -40 to +85 °C (105 °C).