



SPN6M ST

CONTROLLER



- ECU which can handle up to 32 inputs and up to 32 outputs
- Redundant architecture
- 2 units equipped with M7 high-performance microprocessors
- Freely programmable using LOGIClab Ldevelopment platform
- Implementable in a serial line (RS232) or a CAN network, as MASTER or SLAVE unit
- compatible with installation on the ISOBUS network (For prepared version)
- Polyurethane resin case

TECHNICAL FEATURES

MASTER CODE SP.6M.439

POWER SUPPLY 9-30 VDC / CURRENT CONSUMPTION 120 mA @ 24 VDC (STAND BY MODE)

INPUT

TOTAL No. 32 INPUTS, SOFTWARE CONFIGURABLE AS:

- UP TO 32 DIGITAL INPUTS (TOP SIDE)
- UP TO 28 DIGITAL INPUTS (LOW SIDE)
- UP TO 28 ANALOGUE INPUTS (0-40 V)
- UP TO 8 ANALOGUE INPUTS (4-20 mA)
- UP TO 4 FREQUENCY INPUTS (1-1000 Hz)

OUTPUT

TOTAL No. 32 OUTPUTS, SOFTWARE CONFIGURABLE AS:

- UP TO 16 HIGH-SIDE PWM OUTPUTS (MAX 2 A EACH)
- UP TO 8 LOW-SIDE DIGITAL OUTPUTS (MAX 0,5/0,3 A EACH)
- UP TO 32 HIGH-SIDE OUTPUTS (MAX 2 A EACH)

MAX CURRENT SUPPLIED BY THE DEVICE: 10 A for each unit

CAN BUS

No. 2 PORTS: 2.0B COMPLIANT - (11, 29 BIT) - ISO 11898 - UP TO 1MBIT/S
PROTOCOLS: CAN OPEN (DS401 DEVICE PROFILE FOR GENERIC I/O MODULE, WITH DS306 EDS FILE

OPTIONAL CAN BUS ISOBUS

No. 2 PORTS: CAN BUS 2.0 A/B – 11/29 BIT - UP TO 1 MBIT/S - ISO 11783 compliant
PROTOCOLS: ISO 11898-2 compliant

SERIAL

No. 1 PORT: RS232

OPTIONAL RTC

Internal buffer battery for real-time clock (time and date) keeping up to 10 year

CONNECTION
See «MATING CONNECTORS» table

MOLEX 48 PIN

CASE

ENCAPSULATED IN PUR RESIN - SELF-EXTINGUISHING UL94 (V0)

PROTECTION

IP68

WORKING TEMPERATURE

-40°C +85°C



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ELECTRONIC FEATURES

SLAVE USAGE

On CPU B or A

EDS FILE

MASTER USAGE

on CPU A

LOGIClab

C PROGRAM OPEN-SOURCE SOFTWARE

PROGRAMMING

FIRMWARE UPLOAD BY CAN BUS WITH ALOADER SOFTWARE TOOL

CPU

Family: 32-bit Arm® Cortex®-M7

Frequency: 400 MHz

MEMORY

FLASH: 2 MB - RAM: 1 MB

External EEPROM: 128 KB

OPTIONAL: QSPI 64 MB/128 MB

STANDARDS

DIRECTIVE

2014/30/EU (EMC)

ELECTROMAGNETIC COMPATIBILITY

EN 50498

ELECTROMAGNETIC EMISSIONS

EN 61000-6-4

ELECTROMAGNETIC IMMUNITY

EN 61000-6-2

ROAD VEHICLES

ELECTRICAL DISTURBANCES FROM CONDUCTION AND COUPLING — PART 2

ISO 7637-2: 2011

ROAD VEHICLES

COMPONENT TEST METHODS FOR ELECTRICAL DISTURBANCES FROM NARROWBAND RADIATED ELECTROMAGNETIC ENERGY — PART 1

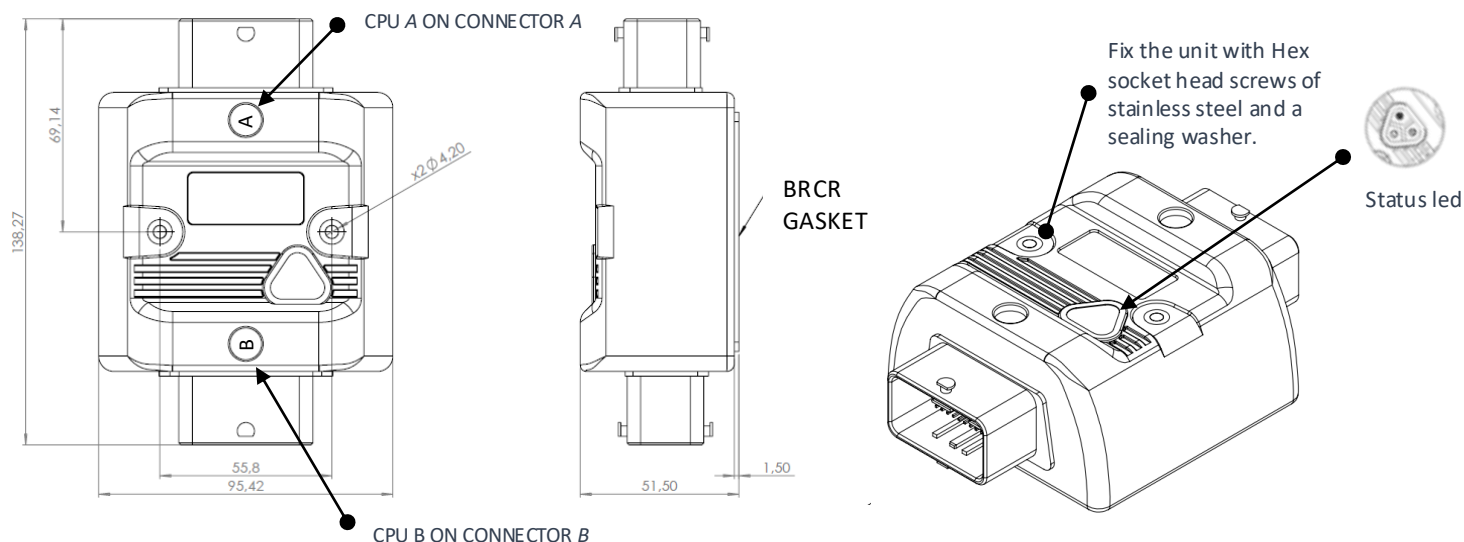
ISO 11452-1: 2005

PERFORMANCE AND SAFETY INTEGRITY LEVEL

PLd – SIL2

(DUAL-CHANNEL INTERNAL SCHEME)

SIZE (mm)





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48 PINS CONNECTOR

A

PIN	A	B	C	D	E	F	G	H	J	K	L	M
1	DIGITAL / PWM OUTPUT 13	SUPPLY OUTPUTS 9...16	DIGITAL / PWM OUTPUT 12	DIGITAL / PWM OUTPUT 11	DIGITAL / PWM OUTPUT 10	DIGITAL / PWM OUTPUT 9	GND POWER SUPPLY	DIGITAL OUTPUT 8	DIGITAL OUTPUT 7	DIGITAL OUTPUT 6	SUPPLY OUTPUTS 1...8	DIGITAL OUTPUT 4
2	DIGITAL / PWM OUTPUT 14	INPUT 9 0...40Vdc / DIGITAL	INPUT 8 0...40Vdc/ DIGITAL	INPUT 7 0...40Vdc/ DIGITAL	INPUT 6 4...20mA / 0...40Vdc/ DIGITAL	INPUT 5 4...20mA / 0...40Vdc/ DIGITAL	INPUT 4 4...20mA / 0...40Vdc/ DIGITAL	INPUT 3 4...20mA/ 0...40Vdc/ DIGITAL	INPUT 2 0...40Vdc/ DIGITAL	INPUT 1 0...40Vdc/ DIGITAL	DIGITAL OUTPUT 5	DIGITAL OUTPUT 3
			DIGITAL LS OUTPUT 8 500 mA	DIGITAL LS OUTPUT 7 500 mA	DIGITAL LS OUTPUT 6 30 mA	DIGITAL LS OUTPUT 5 30 mA	DIGITAL LS OUTPUT 4 30 mA	DIGITAL LS OUTPUT 3 30 mA	DIGITAL LS OUTPUT 2 500 mA	DIGITAL LS OUTPUT 1 500 mA		
3	DIGITAL / PWM OUTPUT 15	INPUT 10 0...40Vdc / DIGITAL	FREQ. / DIGITAL INPUT 11	FREQ. / DIGITAL INPUT 12	INPUT 13 0...40Vdc / DIGITAL	INPUT 14 0...40Vdc / DIGITAL	INPUT 15 0...40Vdc / DIGITAL	INPUT 16 0...40Vdc / DIGITAL	CAN2(H) / RS232 1 RX *	CAN2(L) / RS232 1 TX *	GND POWER SUPPLY	DIGITAL OUTPUT 2
4	DIGITAL / PWM OUTPUT 16	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	CAN H	CAN L	MODULE POWER SUPPLY	GND	DIGITAL OUTPUT 1

48 PINS CONNECTOR

B

PIN	A	B	C	D	E	F	G	H	J	K	L	M
1	DIGITAL / PWM OUTPUT 29	SUPPLY OUTPUTS 25...32	DIGITAL / PWM OUTPUT 28	DIGITAL / PWM OUTPUT 27	DIGITAL / PWM OUTPUT 26	DIGITAL / PWM OUTPUT 25	GND POWER SUPPLY	DIGITAL OUTPUT 24	DIGITAL OUTPUT 23	DIGITAL OUTPUT 22	SUPPLY OUTPUTS 17...24	DIGITAL OUTPUT 20
2	DIGITAL / PWM OUTPUT 30	INPUT 25 0...40Vdc / DIGITAL	INPUT 24 0...40Vdc/ DIGITAL	INPUT 23 0...40Vdc/ DIGITAL	INPUT 22 4...20mA / 0...40Vdc/ DIGITAL	INPUT 21 4...20mA / 0...40Vdc/ DIGITAL	INPUT 20 4...20mA / 0...40Vdc/ DIGITAL	INPUT 19 4...20mA/ 0...40Vdc/ DIGITAL	INPUT 18 0...40Vdc/ DIGITAL	INPUT 17 0...40Vdc/ DIGITAL	DIGITAL OUTPUT 21	DIGITAL OUTPUT 19
			DIGITAL LS OUTPUT 24 500 mA	DIGITAL LS OUTPUT 23 500 mA	DIGITAL LS OUTPUT 22 30 mA	DIGITAL LS OUTPUT 21 30 mA	DIGITAL LS OUTPUT 20 30 mA	DIGITAL LS OUTPUT 19 30 mA	DIGITAL LS OUTPUT 18 500 mA	DIGITAL LS OUTPUT 17 500 mA		
3	DIGITAL / PWM OUTPUT 31	INPUT 26 0...40Vdc / DIGITAL	FREQ. / DIGITAL INPUT 27	FREQ. / DIGITAL INPUT 28	INPUT 29 0...40Vdc / DIGITAL	INPUT 30 0...40Vdc / DIGITAL	INPUT 31 0...40Vdc / DIGITAL	INPUT 32 0...40Vdc / DIGITAL	CAN3(H) / RS232 2 RX *	CAN3(L) / RS232 2 TX *	GND POWER SUPPLY	DIGITAL OUTPUT 18
4	DIGITAL / PWM OUTPUT 32	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	CANH	CANL	MODULE POWER SUPPLY	GND	DIGITAL OUTPUT 17

NOTES:

- «FREQ» means «frequency» - «LS» MEANS «LOW SIDE»
- For digital low side outputs : **low side can't be used if the relative input is used**
- (*) : pin shared with different functions, see the pin configuration based on hardware configuration table
- Sensor power pins have the reference power supply voltage, MAX 200mA
- GND pins are connected together

TERMINAL WIRE SIZE: follow the manufacturer's mating connector specification

- from A1 to J4: 0.75 mm²
- from L1 to M4: 2.0 mm²

COMMUNICATION PORTS CONFIGURATION

- S01** Nr. 3 CAN PORTS
(2nd/3rd on pins: J3 – K3)
- S02** Nr. 2 CAN PORT (2nd on pins: J3 – K3)
Nr. 1 RS232 PORT (on pins: J3 – K3)
- S03** Nr. 1 CAN PORT
Nr. 2 RS232 PORT (2nd on pins: J3 – K3)
- S04** 3 CAN PORT ISOBUS compliant
(2nd/3rd on pins: J3 – K3)

MATING CONNECTORS – MOLEX CODES

CONNECTOR	64320-3311
TERMINALS	64323-1029 (x8) 64322-1029 (x40)
WIRE CAP	64320-1301
ALMEC PRE-WIRED CONNECTOR	CNN.ML.48P.D.VD.CB (yellow cable) CNN.ML.48P.B.VD.CB (blue cable)



64320-3311



64323-1029



64322-1029



64320-1301





NOTE