



The SPN5 controller is an ECU (Electronic Control Unit) which can handle up to 24 inputs and up to 20 outputs.

It can be implementable in RS232 line or CAN network as MASTER or SLAVE

The polyurethane resin case makes the controllers suitable for use on machines that operate in harsh work environments.



## TECHNICAL FEATURES

MASTER CODE		SPN5	
POWER SUPPLY		9-36 VDC / CURRENT ABSORPTION 50 mA AT 24 VDC (STAND BY MODE)	
INPUT	TOTAL 24	8 UNIVERSAL INPUT	
		16 DIGITAL INPUTS	
OUTPUT	TOTAL 20 OR 16	12 PWM / DIGITAL OUTPUTS AND 8 DIGITAL HIGHSIDE LOW CURRENT OUTPUTS	OR 12 PWM / DIGITAL OUTPUTS AND 4 RELAY DRY CONTACT OUTPUTS
		CAN BUS	
1 PORT		2.0B COMPLIANT - (11, 29 BIT) - ISO 11898 - UP TO 1MBIT/S	
CAN BUS PROTOCOLS		CAN OPEN (CIA DS401 DEVICE PROFILE FOR GENERIC I/O MODULE, WITH DS306 EDS FILE) ON REQUEST: SAE J1939 - ISO 11783 (ISO BUS) - FMS	
CONNECTION	2	1 MOLEX 32 PIN	
		1 MOLEX 48 PIN	
CASE		PUR	
WORKING TEMPERATURE		-40°C + 80°C	





## ELECTRONIC FEATURES

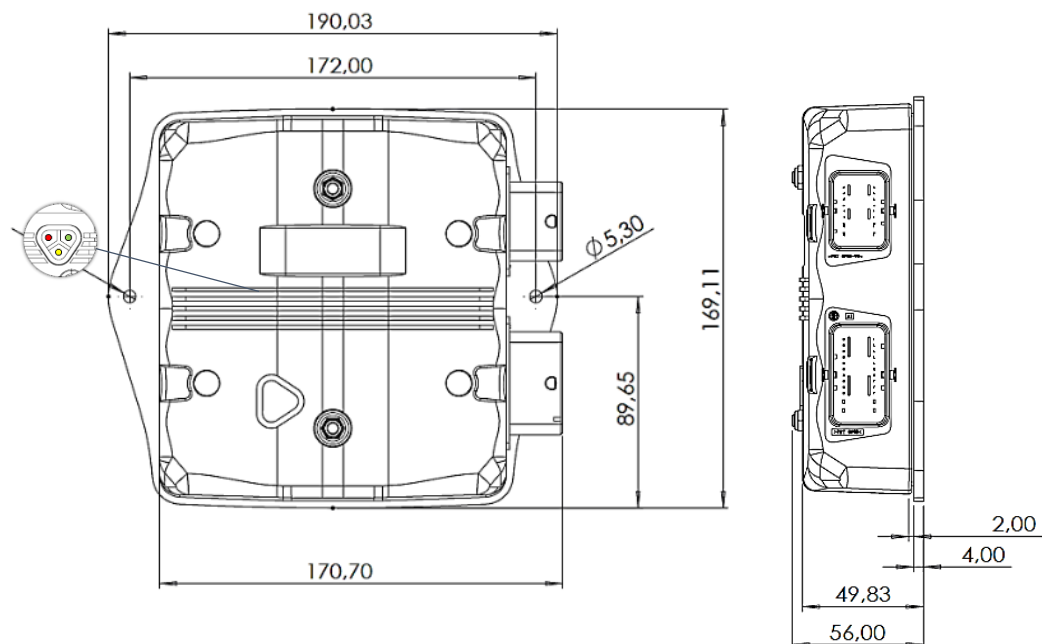
SLAVE USAGE	EDS FILE
MASTER USAGE	STANDARD C PROGRAM LANGUAGE
PROGRAMMING	FIRMWARE UPLOAD BY CAN BUS WITH ALOADER SOFTWARE TOOL
CYCLE TIME	10 ms
CPU	PIC 16 bit
INTERNAL MEMORY	FLASH: 256 KB RAM: 28 KB

## STANDARDS

ELECTROMAGNETIC EMISSIONS	EN 61000-6-4// EN 55011 (RF RADIATE)
ELECTROMAGNETIC IMMUNITY	EN 61000-6-2// EN 61000-4-2/3/4/6
IP	BOX: IP68; CONNECTORS: IP67
MTTFd	112,25 YEARS CALCULATED ACCORDING TO THE IEC61709 (SIEMENS SN29500), WITH ENVIRONMENTAL FACTORS 3K7 (IEC60721)
PERFORMANCE AND SAFETY INTEGRITY LEVEL	PLc – SIL1 (SINGLE-CHANNEL INTERNAL SCHEME)

IN ACCORDANCE WITH THE EN50498 THE DEVICE MEETS THE TECHNICAL SPECIFIC REQUIREMENTS OF 2004-104 DIRECTIVE (AUTOMOTIVE). THE DEVICE IS EMC 2004/108 COMPLIANT.

## SIZE (mm)





**A** CONNECTOR  
32 PINS

**B** CONNECTOR  
48 PINS

SPN5.CN.S02  SPN5.CN.S01

AVAILABLE VERSIONS		
CODE	INPUTS	OUTPUTS
SPN5.CN.S02	8 UNIVERSAL INPUTS 4÷20 mA (0 ÷ 25 mA) 0 ÷ 5 V 0 ÷ 10 V 0 ÷ 40 V HIGH SIDE INPUT LOW SIDE INPUT	UP TO 12 PWM HIGH SIDE PWM OUTPUT UP TO 8 DIGITAL (HIGH SIDE) SINGLE OUT 4A MAX-MAX TOTAL 20A DIGITAL L HIGH SIDE OUTPUT SINGLE OUT 2A MAX – TOTAL DIGITAL 6A
	16 DIGITAL INPUTS HIGH SIDE INPUT LOW SIDE INPUT	HIGH SIDE PWM OUTPUT SINGLE OUT 4A MAX-MAX TOTAL 20A RELAY SINGLE CONTACT MAX 3A

### 32 PINS CONNECTOR

PIN	A	B	C	D	E	F	G	H
1	DIGITAL / PWM OUTPUT 2	DIGITAL / PWM OUTPUT 3	SUPPLY OUTPUTS 3/4	DIGITAL / PWM OUTPUT 4	DIGITAL INPUT 9	GND	DIGITAL / PWM OUTPUT 5	SUPPLY OUTPUTS 5/6
	DIGITAL / PWM OUTPUT 2	DIGITAL / PWM OUTPUT 3	SUPPLY OUTPUTS 3/4	DIGITAL / PWM OUTPUT 4	DIGITAL INPUT 9	GND	DIGITAL / PWM OUTPUT 5	SUPPLY OUTPUTS 5/6
2	SUPPLY OUTPUTS 1/2	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	GND
	SUPPLY OUTPUTS 1/2	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	GND
3	DIGITAL / PWM OUTPUT 1	DIGITAL INPUT 5	DIGITAL INPUT 4	DIGITAL INPUT 3	DIGITAL INPUT 2	DIGITAL INPUT 1	GND	DIGITAL / PWM OUTPUT 6
	DIGITAL / PWM OUTPUT 1	DIGITAL INPUT 5	DIGITAL INPUT 4	DIGITAL INPUT 3	DIGITAL INPUT 2	DIGITAL INPUT 1	GND	DIGITAL / PWM OUTPUT 6
4	DIGITAL INPUT 6	DIGITAL INPUT 7	DIGITAL INPUT 8	DIGITAL HIGH SIDE OUTPUT 13A	DIGITAL HIGH SIDE OUTPUT 13	DIGITAL HIGH SIDE OUTPUT 14A	DIGITAL HIGH SIDE OUTPUT 14	SUPPLY OUTPUTS 13/13A 14/14A
	DIGITAL INPUT 6	DIGITAL INPUT 7	DIGITAL INPUT 8	FREE CONTACT OUTPUT 13	FREE CONTACT OUTPUT 13	NOT USED	FREE CONTACT OUTPUT 14	FREE CONTACT OUTPUT 14

### 48 PINS CONNECTOR

PIN	A	B	C	D	E	F	G	H	J	K	L	M
1	DIGITAL HIGH SIDE OUTPUT 16A	SUPPLY OUTPUTS 15/15A/16/16A	SENSOR POWER SUPPLY	DIGITAL/PWM OUTPUT 7	SUPPLY OUTPUTS 7/8	DIGITAL / PWM OUTPUT 8	GND	DIGITAL / PWM OUTPUT 9	GND	SUPPLY OUTPUTS 9/10	GND	DIGITAL / PWM OUTPUT 10
	FREE CONTACT OUTPUT 16	FREE CONTACT OUTPUT 15	SENSOR POWER SUPPLY	DIGITAL/PWM OUTPUT 7	SUPPLY OUTPUTS 7/8	DIGITAL / PWM OUTPUT 8	GND	DIGITAL / PWM OUTPUT 9	GND	SUPPLY OUTPUTS 9/10	GND	DIGITAL / PWM OUTPUT 10
2	DIGITAL HIGH SIDE OUTPUT 16	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	GND	GND	GND	DIGITAL / PWM OUTPUT 11
	FREE CONTACT OUTPUT 16	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	SENSOR POWER SUPPLY	GND	GND	GND	GND	GND	GND	DIGITAL / PWM OUTPUT 11
3	DIGITAL HIGH SIDE OUTPUT 15	DIGITAL INPUT 10	DIGITAL INPUT 11	DIGITAL INPUT 12	DIGITAL INPUT 13	DIGITAL INPUT 14	DIGITAL INPUT 15	DIGITAL INPUT 16	CANH	CANL	GND	SUPPLY OUTPUTS 11/12
	NOT USED	DIGITAL INPUT 10	DIGITAL INPUT 11	DIGITAL INPUT 12	DIGITAL INPUT 13	DIGITAL INPUT 14	DIGITAL INPUT 15	DIGITAL INPUT 16	CANH	CANL	GND	SUPPLY OUTPUTS 11/12
4	DIGITAL HIGH SIDE OUTPUT 15A	ANALOGIC INPUT 1	LOGIC POWER SUPPLY	ANALOGIC INPUT 2	ANALOGIC INPUT 3	ANALOGIC INPUT 4	ANALOGIC INPUT 5	ANALOGIC INPUT 6	ANALOGIC INPUT 7	ANALOGIC INPUT 8	GND	DIGITAL / PWM OUTPUT 12
	FREE CONTACT OUTPUT 15	ANALOGIC INPUT 1	LOGIC POWER SUPPLY	ANALOGIC INPUT 2	ANALOGIC INPUT 3	ANALOGIC INPUT 4	ANALOGIC INPUT 5	ANALOGIC INPUT 6	ANALOGIC INPUT 7	ANALOGIC INPUT 8	GND	DIGITAL / PWM OUTPUT 12

### COUPLING CONNECTORS



	32 PIN	48 PIN
CONNECTOR	64319-3211	64320-3311
TERMINAL	64323-1029 (x8)	64323-1029 (x8)
	64322-1029 (x24)	64322-1029 (x40)
WIRE CAP	64319-1201	64320-1301





**ALMEC**  
MECHATRONICS

SPN5