



The SPN3 controller is an ECU (Electronic Control Unit) which can handle up to 8 inputs and up to 8 outputs.

It can be implemented in a CAN network, as MASTER or SLAVE.

The resources are disposed separately to facilitate the repairs of the utilities and the polyurethane resin case makes the controllers suitable for use on machines that operate in harsh work environments.



## TECHNICAL FEATURES

MASTER CODE		SPN3
POWER SUPPLY		9-36 VDC / CURRENT CONSUMPTION 25 mA AT 24 VDC (STAND BY MODE)
INPUT	TOTAL 8	4 UNIVERSAL INPUTS 4 DIGITAL INPUTS
OUTPUT	TOTAL 8	8 PWM / DIGITAL 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
CONNECTIONS PORT	20	2 AMP SUPERSEAL 6 PIN
		10 AMP SUPERSEAL 2 PIN
		8 AMP SUPERSEAL 3 PIN
WORKING TEMPERATURE		-40°C +80°C
CASE		PUR





## ELECTRONIC FEATURES

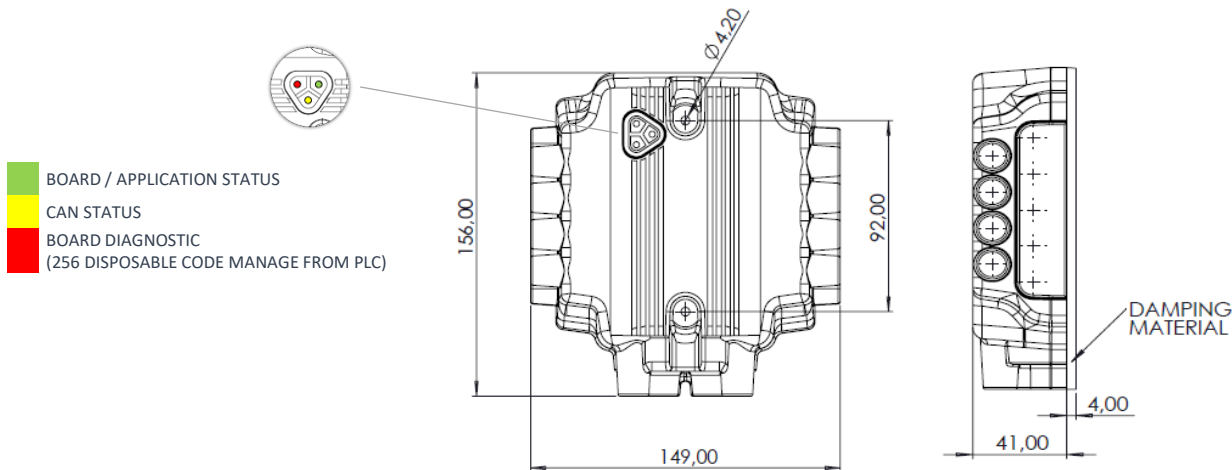
SLAVE USAGE	EDS
MASTER USAGE	STANDARD C PROGRAM LANGUAGE
PROGRAMMING	FIRMWARE UPLOAD BY CAN BUS WITH ALOADER SOFTWARE TOOL
CYCLE TIME	50 ms

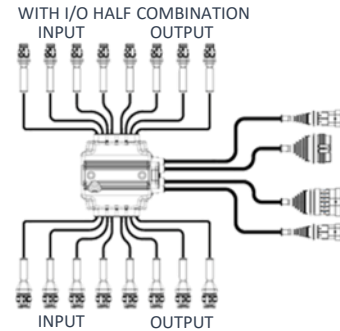
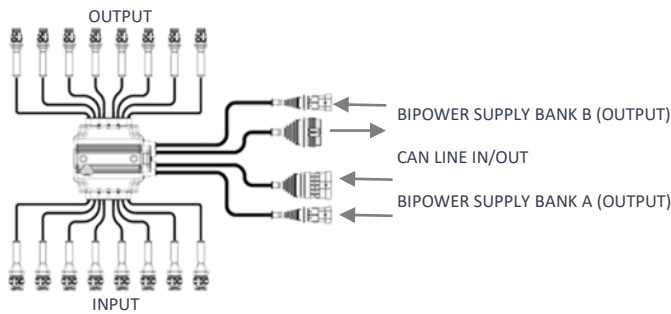
## STANDARDS

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	55,98 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)



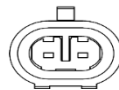


CODE TABLE

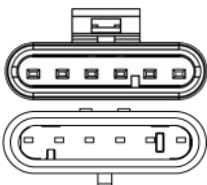
INPUT		OUTPUT BANKS POWER CONNECTIONS			OUTPUTS								
BASIC VERSION	<b>4 UNIVERSAL INPUT</b> 4÷20 mA (0÷25 mA) 0÷5 V 0÷10 V 0÷40 V HIGH SIDE INPUT LOW SIDE INPUT	<b>EXTERNAL SUPPLY BY MAIN POSITIVE</b> PIN 1 CAN LINE	<b>EXTERNAL SUPPLY BY SAFETY LINE</b> PIN 6 CAN LINE	OPT 3	8 HIGH SIDE OUTPUTS – IN TWO INDEPENDENT BANKS								
				A, B	1	BANK A				BANK B			
		A	A,B	2	DIGIT PWM	RATIO	RELAY	OPT. 1	DIGIT PWM	RATIO	RELAY	OPT. 2	
		A	B	3	4	0	0	A	4	0	0	A	
	<b>4 DIGITAL INPUTS</b> HIGH SIDE INPUT LOW SIDE INPUTS				3	3	0	1	B	3	0	1	B
					2	2	1	0	C	2	1	0	C
					1	2	0	2	D	1	0	2	D
					0	1	1	1	E	0	1	1	E
					0	2	0	0	F	0	2	0	F
					0	1	2	2	G	0	1	2	G
<b>HIGH SIDE OUTPUTS</b>													
SINGLE OUT MAX CURR: 5A						BANK TOTAL CURRENT: 8A							
<b>BASIC AND BIPOWER VERSION</b>													
BIPOWER VERSION	SUPPLEMENTARY BIPOWER PLUG	<b>IMPORTANT:</b> BIPOWER CONNECTION EXCLUDES THE SUPPLY (A/B BANKS) BY DOUBLE CAN LINE (PIN1/6)											
		BANK A BIPOWER – BANK B SUPPLIED BY PIN 1 CAN LINE			1P1								
		BANK A BIPOWER – BANK B SUPPLIED BY PIN 6 CAN LINE			1P2								
		BANK B BIPOWER – BANK B SUPPLIED BY PIN 1 CAN LINE			2P1								
		BANK B BIPOWER – BANK B SUPPLIED BY PIN 6 CAN LINE			2P2	SINGLE OUT MAX CURR: 5A	BANK TOTAL CURRENT: 25A						
BANK A AND B BIPOWER				3P									



OUTPUT	
PIN	DESCRIPTION
1	POSITIVE
2	OUTPUT (PWM/D: HIGH SIDE)



BIPOWER SUPPLY	
PIN	DESCRIPTION
1	POWER SUPPLY
2	LINE H (CAN BUS)



DOUBLE CAN LINE IN/OUT	
PIN	DESCRIPTION
1	POWER SUPPLY
2	LINE H (CANBUS)
3	NEGATIVE
4	LINE L (CAN BUS)
5	SAFETY LINE
6	EXTERNAL SUPPLY BY SAFETY LINE



INPUT	
PIN	DESCRIPTION
1	POSITIVE
2	INPUT (A/D:L-H)
3	GND





**ALMEC**  
MECHATRONICS

NOTE