



The SPN1 controller is an ECU (Electronic Control Unit) which can handle up to 8 inputs and up to 12 outputs.

It can be implemented in a serial line (RS232) or 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

<b>MASTER CODE</b>		SPN1
<b>POWER SUPPLY</b>		9-36 VDC / CURRENT CONSUMPTION 25 mA AT 24 VDC (STAND BY MODE)
<b>INPUT</b>	<b>TOTAL 8</b>	4 UNIVERSAL INPUTS 4 DIGITAL INPUTS
<b>OUTPUT</b>	<b>TOTAL 12</b>	8 PWM / DIGITAL OUTPUTS OR 4 RATIOMETRIC OUTPUT 4 DIGITAL LOW SIDE OUTPUTS
<b>CAN BUS</b>	<b>1 PORT</b>	2.0B COMPLIANT - (11, 29 BIT) - ISO 11898 - UP TO 1MBIT/S
<b>CAN BUS PROTOCOLS</b>		CAN OPEN (CIA DS401 DEVICE PROFILE FOR GENERIC I/O MODULE, WITH DS306 EDS FILE) ON REQUEST: SAE J1939 - ISO 11783 (ISO BUS) - FMS
<b>SERIAL PORT</b>	<b>1 PORT</b>	RS232
<b>CONNECTIONS PORT</b>	<b>10</b>	1 AMP SUPERSEAL 6 PIN – STANDARD CABLE LENGTH: 40 cm
		9 AMP SUPERSEAL 4 PIN - STANDARD CABLE LENGTH: 40 cm
<b>WORKING TEMPERATURE</b>		-40°C +80°C
<b>CASE</b>		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

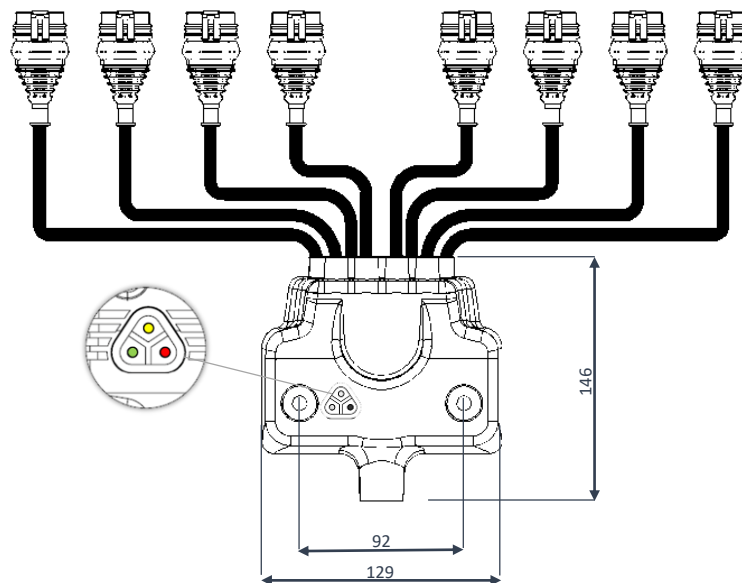
## STANDARDS

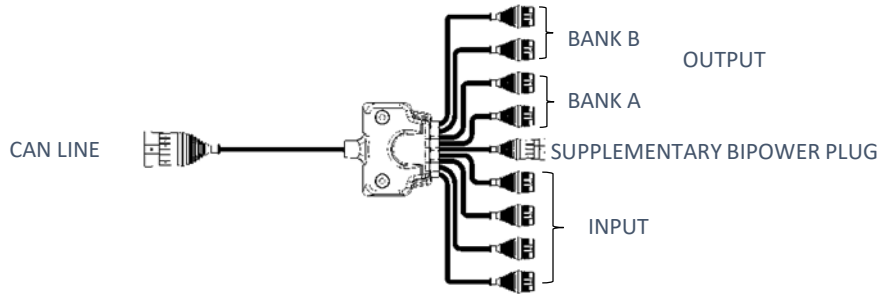
ELECTROMAGNETIC EMISSIONS	EN 61000-6-4// EN 55011 (RF RADIATE)
ELECTROMAGNETIC IMMUNITY	EN 61000-6-2// EN 61000-4-2/3/4/6
IP	BOX: IP68; CONNECTORS: IP67
MTTFd	55,98 YEARS CALCULATED ACCORDING TO THE IEC61709 (SIEMENS SN29500), WITH ENVIRONMENTAL FACTORS 3K7 (IEC60721)
PERFORMANCE AND SAFETY INTEGRITY 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)

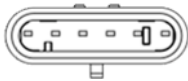
- BOARD / APPLICATION STATUS
- CAN STATUS
- BOARD DIAGNOSTIC (256 DISPOSABLE CODE MANAGE FROM PLC)



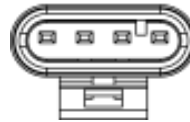


**ELECTRICAL FEATURES**

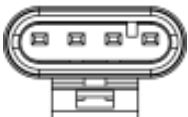
INPUT			OUTPUTS								
<b>BASIC VERSION</b>	<b>4 UNIVERSAL INPUT</b> 4÷20 mA (0÷25 mA) 0÷5 V 0÷10 V 0÷40 V HIGH SIDE INPUT LOW SIDE INPUT  <b>4 DIGITAL INPUTS</b> HIGH SIDE INPUT LOW SIDE INPUTS		<b>8 HIGH SIDE OUTPUTS – IN TWO INDEPENDENT BANKS</b>								
			PIN 5 (CAN LINE PLUG)				PIN 6 (CAN LINE PLUG)				
			<b>BANK A</b>				<b>BANK B</b>				
			DIGIT PWM	RATIO	RELAY	OPT. 1	DIGIT PWM	RATIO	RELAY	OPT. 2	
			4	0	0	A	4	0	0	A	
			3	0	1	B	3	0	1	B	
			2	1	0	C	2	1	0	C	
			2	0	2	D	1	0	2	D	
			1	1	1	E	0	1	1	E	
			0	2	0	F	0	2	0	F	
0	1	2	G	0	1	2	G				
<b>BASIC AND BIPOWER VERSION</b>			<b>HIGH SIDE OUTPUTS</b>								
			SINGLE OUT MAX CURR: 5A				BANK TOTAL CURRENT: 8A				
			<b>4 SUPPLEMENTARY – LOW SIDE OUTPUTS</b>								
			SINGLE OUT MAX CURRENT: 4A				BANK TOTAL CURRENT: 8A				
<b>BIPOWER VERSION</b>	SUPPLEMENTARY BIPOWER PLUG	<b>IMPORTANT: BIPOWER CONNECTION EXCLUDES THE SUPPLY (A/B BANKS) BY DOUBLE CAN LINE</b>									
		<b>OPT 3</b>									
		BANK A BIPOWER	<b>1P</b>								
		BANK B BIPOWER	<b>2P</b>								
			<b>HIGH SIDE OUTPUTS</b>								
			SINGLE OUT MAX CURR: 5A				BANK TOTAL CURRENT: 16A				



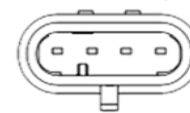
CAN LINE IN	
PIN	DESCRIPTION
1	POWER SUPPLY
2	LINE H (CANBUS)
3	GND
4	LINE L (CAN BUS)
5	SUPPLY OUTPUTS 1..8
6	SUPPLY OUTPUTS 9..16



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



OUTPUT	
PIN	DESCRIPTION
1	OUTPUT (A/D:H)
2	OUTPUT (A/D:H)
3	GND
4	OUTPUT LOW SIDE



SUPPLEMENTARY BIPOWER PLUG	
PIN	DESCRIPTION
1	SUPPLY OUTPUTS 1..8
2	GND
3	SUPPLY OUTPUTS 9..16
4	GND



**ALMEC**  
MECHATRONICS

NOTE