



SPN1

CONTROLLER



The SPN1 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

MASTER CODE		SPN1
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 12	8 PWM / DIGITAL OUTPUTS OR 4 RATIOMETRIC OUTPUT 4 DIGITAL LOW SIDE 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
SERIAL PORT	1 PORT	OPTIONAL: RS232
CONNECTIONS PORT	10	1 AMP SUPERSEAL 6 PIN – STANDARD CABLE LENGTH: 40 cm
		9 AMP SUPERSEAL 4 PIN - STANDARD CABLE LENGTH: 40 cm
WORKING TEMPERATURE		-40°C +80°C
CASE		ENCAPSULATED IN PUR RESIN - SELF-EXTINGUISHING UL94 (V0)

ELECTRONIC FEATURES

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



(25/06/2025) - 1



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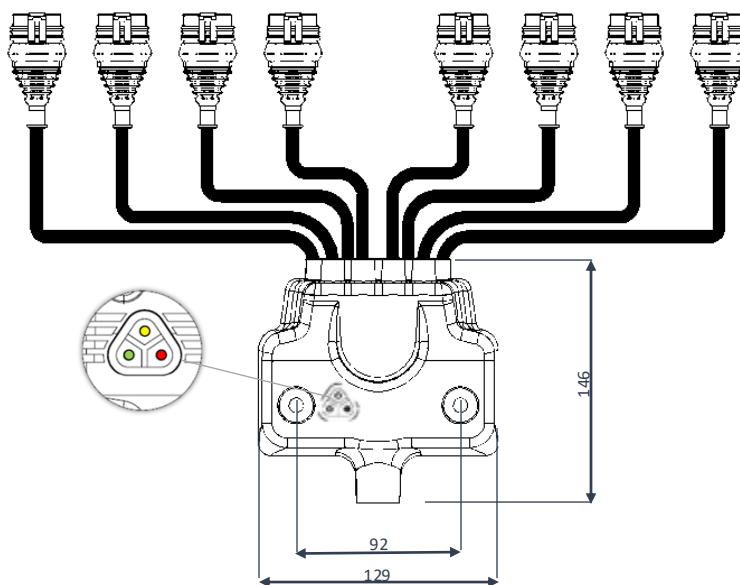
STANDARDS

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)

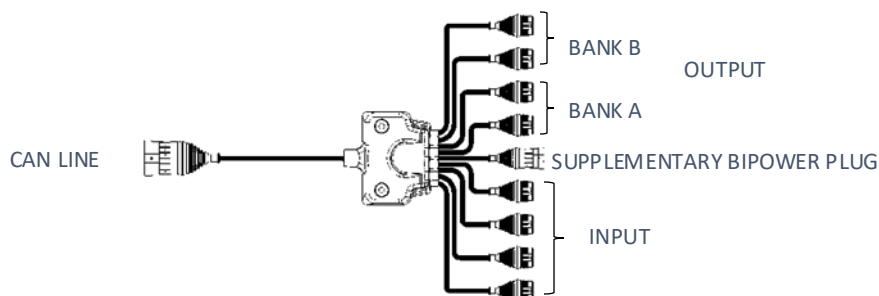
BOARD / APPLICATION STATUS
CAN STATUS
BOARD DIAGNOSTIC (256
DISPOSABLE CODE MANAGE FROM
PLC)





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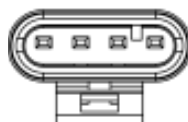


ELECTRICAL FEATURES

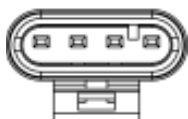
INPUT				OUTPUTS							
BASIC VERSION	4 UNIVERSAL INPUT 4÷20 mA (0÷25 mA) 0÷5 V 0÷10 V 0÷40 V HIGH SIDE INPUT LOW SIDE INPUT 4 DIGITAL INPUTS HIGH SIDE INPUT LOW SIDE INPUTS	8 HIGH SIDE OUTPUTS – IN TWO INDIPENDENT BANKS									
		PIN 5 (CAN LINE PLUG)				PIN 6 (CAN LINE PLUG)					
		BANK A				BANK 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	
		HIGH SIDE OUTPUTS									
		SINGLE OUT MAX CURR: 5A				BANK TOTAL CURRENT: 8A					
BASIC AND BIPOWER VERSION				4 SUPPLEMENTARY – LOW SIDE OUTPUTS							
				SINGLE OUT MAX CURRENT: 4A				BANK TOTAL CURRENT: 8A			
BIPOWER VERSION	SUPPLEMENTARY BIPOWER PLUG	IMPORTANT: BIPOWER CONNECTION EXCLUDES THE SUPPLY (A/B BANKS) BY DOUBLE CAN LINE									
		OPT 3									
		BANK A BIPOWER	1P								
		BANK B BIPOWER	2P								
		BANK A AND B BIPOWER	3P								
		HIGH SIDE OUTPUTS									
		SINGLE OUT MAX CURR: 5A				BANK TOTAL CURRENT: 16A					



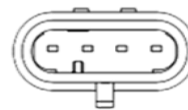
CAN LINE IN	
PIN	DESCRIPTION
1	POWER SUPPLY
2	LINE H (CANBUS)
3	GND
4	LINE L (CAN BUS)
5	SUPPLY OUTPUTS 1..8
6	SUPPLY OUTPUTS 9..16



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



NOTE