



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 ALOADER SOFTWARE TOOL |
| CYCLE TIME | 50 ms |

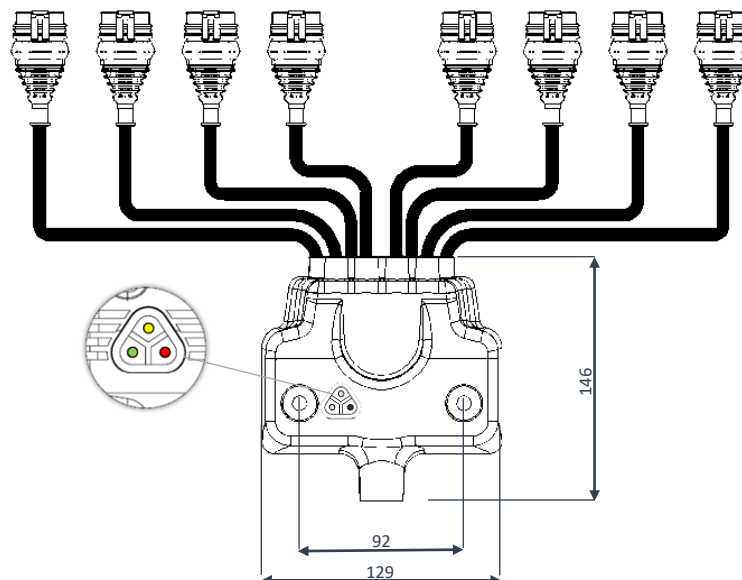
STANDARDS

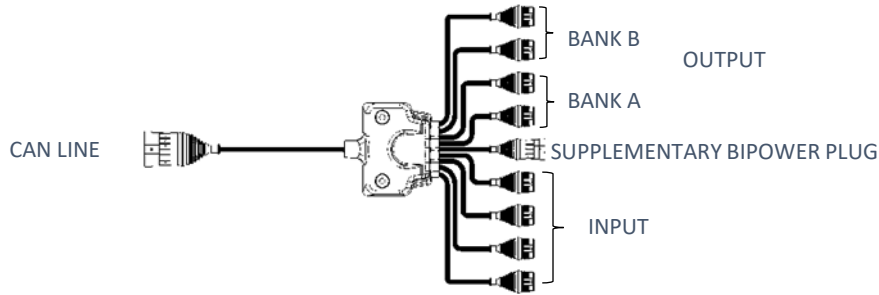
| | |
|--|--|
| ELECTROMAGNETIC EMISSIONS | EN 61000-6-4// EN 55011 (RF RADIATE) |
| ELECTROMAGNETIC IMMUNITY | EN 61000-6-2// EN 61000-4-2/3/4/6 |
| IP | BOX: IP68; CONNECTORS: IP67 |
| MTTFd | 55,98 YEARS CALCULATED ACCORDING TO THE IEC61709 (SIEMENS SN29500), WITH ENVIRONMENTAL FACTORS 3K7 (IEC60721)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

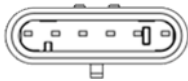
- BOARD / APPLICATION STATUS
- CAN STATUS
- BOARD DIAGNOSTIC (256 DISPOSABLE CODE MANAGE FROM PLC)



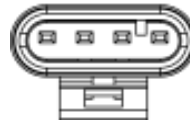


ELECTRICAL FEATURES

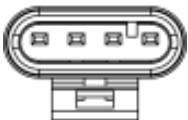
| INPUT | | | OUTPUTS | | | | | | | | |
|----------------------------------|--|---|---|-------|-------|---------------|-------------------------|-------|-------|---------------|--|
| BASIC VERSION | 4 UNIVERSAL INPUT 4÷20 mA (0÷25 mA) 0÷5 V 0÷10 V 0÷40 V HIGH SIDE INPUT LOW SIDE INPUT 4 DIGITAL INPUTS HIGH SIDE INPUT LOW SIDE INPUTS | | 8 HIGH SIDE OUTPUTS – IN TWO INDEPENDENT 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 | | | | |
| BASIC AND BIPOWER VERSION | | | HIGH SIDE OUTPUTS | | | | | | | | |
| | | | SINGLE OUT MAX CURR: 5A | | | | BANK TOTAL CURRENT: 8A | | | | |
| | | | 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 | | | | | | | | |
| | | | HIGH SIDE OUTPUTS | | | | | | | | |
| | | | SINGLE OUT MAX CURR: 5A | | | | BANK TOTAL CURRENT: 16A | | | | |



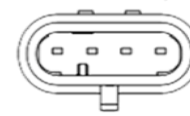
| CAN LINE IN | |
|-------------|----------------------|
| PIN | DESCRIPTION |
| 1 | POWER SUPPLY |
| 2 | LINE H (CANBUS) |
| 3 | GND |
| 4 | LINE L (CAN BUS) |
| 5 | SUPPLY OUTPUTS 1..8 |
| 6 | SUPPLY OUTPUTS 9..16 |



| 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 |



ALMEC
MECHATRONICS

NOTE