

Description

The SCS (Smart Control Systems) product group holds intelligent systems, power distribution and components with communication capabilities. These smart systems can easily be integrated into existing structures. The additional communication capabilities provide more flexibility and reliability.

This CAN mini control unit for universal use in a module enclosure can flexibly be included in existing systems via a customer-specific software.

The SCS30 mini control unit offers six IO ports which can be used as inputs or outputs and two additional low-power outputs and four high-power outputs up to 1 A each and four more power outputs which can permanently supply 1 A or 2 A depending on the selected version. These four channels can also be operated as two bridges.

A further interface is provided for the CAN communication. This interface uses the CAN 2.0B standard by default. CAN low speed or RS232 are optionally available.

This data sheet concentrates on the description of the hardware. Software and specification requirements are set up in direct co-operation with our customers. Alternatively, we will shortly be able to offer a programming option for these mini control units by an intuitive, graphical design environment.

Applications

The SCS30 is suitable for both 12 V and 24 V applications. You do not have to distinguish when ordering.

Scope of applications:

- Trucks
- Special vehicles
- Buses
- Construction machinery and emergency cars

Typical applications:

- Extension of an existing CAN system The SCS30 is J1939-compatible and is perfectly suitable for a flexible integration into various vehicle options.
- A sensor or other equipment options can be added which are queried or controlled by the central control unit.
- Control of two motors with up to 20 A via two H-bridge outputs. Both motor bridges provide overload detection. Alternatively, four individual loads can be operated.
- Internal measurement of temperature and voltage. These bits of information can then be accounted for in the software.

Benefits

- Due to the customer-specific software, the SCS30 offers quick and reliable resolution of many problems that can occur during design, retrofit or adjustment of vehicles.
- Existing CAN systems can easily be enhanced by any type of sensors and equipment options that are interrogated or controlled via the centralised control unit.
- 14 interfaces and the additional CAN communication make this control unit the ideal solution to allow a great number of vehicle options.



SCS30

Technical data (25 °C) SCS30-300-100-000-4x2A

Voltage ratings	12 V / 24 V
Operating voltage	9 V ... 32 V
Power consumption	< 300 mA
Closed current	< 100 µA
H-bridge outputs	PWM up to 20kHz and current control

Inputs/outputs

Description	open collector	Input voltage range	I/O or only input	Features
IO1 PIN 4	yes (70 mA)	0 V...30 V	I/O	Power ON configurable as: High Side Switch Low Side Switch Pull up
IO2 PIN 5	yes (70 mA)	0 V...30 V	I/O	configurable as: frequency input max. 10 kHz High Side Switch Low Side Switch Pull up Transmission channel (Tx)
IO3 PIN 2	yes (70 mA)	0 V...30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up
IO4 PIN 3	yes (70 mA)	0 V...30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up
IO5 PIN 10	yes (70 mA)	0 V...30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up Transmission channel (Tx)
IO6 PIN 6	yes (70 mA)	0 V...30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up Receiver channel (Rx)

Technical data (20 °C) SCS30-300-100-000-4x2A
Inputs

I7 PIN 7	0 V...30 V	input	configurable as: Pull up
I8 PIN 1	0 V...30 V	input	POWER ON configurable as: Pull up
I9 PIN 8	0 V...10 V	input	configurable as: Pull up frequency input

Outputs

H1 PIN 13	1 A output
H2 PIN 14	1 A output
H3 PIN 15	1 A output
H4 PIN 16	1 A output

Outputs – H-bridge

M1a PIN 19	2 A output	Overload detection, PWM up to 20 kHz
M1b PIN 18	2 A output	Overload detection, PWM up to 20 kHz
M2a PIN 22	2 A output	Overload detection, PWM up to 20 kHz
M2b PIN 23	2 A output	Overload detection, PWM up to 20 kHz

power supply

Ubat1 PIN24	9V ... 32 V
Ubat2 PIN 17	9V ... 32 V
LGND PIN 9	Mass for logic
PGND (PIN 20)	Mass for load
PG_RET (PIN 21)	

High speed CAN interface (low speed or RS232 optional)

CAN H PIN 11	CAN high
CAN L PIN 12	CAN low
Max. output current at 24 V	4 x 1 A 4 x 2 A
Max. output power	288 W
Operating temperature	-40° C ... 85° C
Mass	> 90 g

Materials

Housing material	PA6GF
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Technical data (25 °C) SCS30-301-100-000-8x1A

Voltage ratings	12 V / 24 V
Operating voltage	9 V ... 32 V
Power consumption	< 300 mA
Closed current	< 100 µA
Robust design also for inductive loads	

Technical data (20 °C) SCS30-301-100-000-8x1A
Inputs/outputs

Descrip- tion	open collector	Input volt- age range	I/O or only input	Features
IO1 PIN 4	yes (70 mA)	0 V ... 30 V	I/O	Power ON configurable as: High Side Switch Low Side Switch Pull up
IO2 PIN 5	yes (70 mA)	0 V ... 30 V	I/O	configurable as: frequency input input max. 10 kHz High Side Switch Low Side Switch Pull up Transmission channel (Tx)
IO3 PIN 2	yes (70 mA)	0 V ... 30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up
IO4 PIN 3	yes (70 mA)	0 V ... 30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up
IO5 PIN 10	yes (70 mA)	0 V ... 30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up Transmission channel (Tx)
IO6 PIN 6	yes (70 mA)	0 V ... 30 V	I/O	configurable as: High Side Switch Low Side Switch Pull up Receiver channel (Rx)

Inputs

I7 PIN 7		0 V ... 30 V	input	configurable as: Pull up
I8 PIN 1		0 V ... 30 V	input	POWER ON configurable as: Pull up
I9 PIN 8		0 V ... 10 V	input	configurable as: Pull up frequency input

Outputs

H1 PIN 13	1 A output
H2 PIN 14	1 A output
H3 PIN 15	1 A output
H4 PIN 16	1 A output

Outputs – H-bridge

M1a PIN 19	1 A output	Overload detection
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Technical data (25 °C) SCS30-301-100-000-8x1A

M1b PIN 18	1 A output	Overload detection
M2a PIN 22	1 A output	Overload detection
M2b PIN 23	1 A output	Overload detection

power supply

Ubat1 PIN24	9V ... 32 V
Ubat2 PIN 17	9V ... 32 V
LGND PIN 9	Mass for logic
PGND (PIN 20)	Mass for load
PG_RET (PIN 21)	

Max. output current at 12 V	8 x 1 A
Max. output power	192 W
Operating temperature	-40° C ... 85° C
Mass	> 90 g

Materials

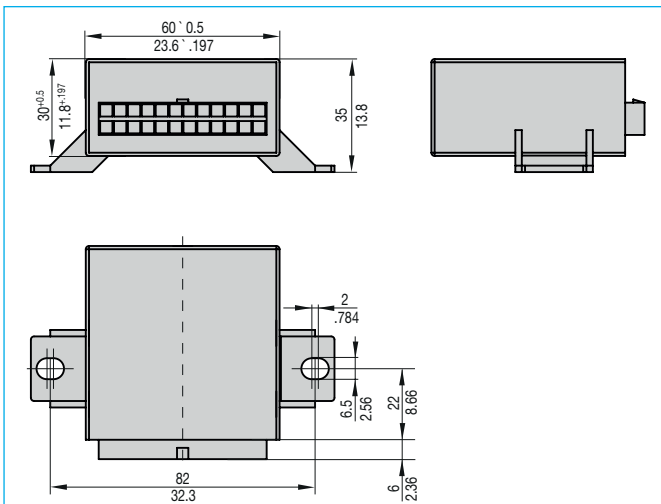
Housing material	PA6GF
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Qualifications

SCS30-300-100-000-4x 2A
SCS30-301-100-000-8x 1A

Degree of protection	IP52
Noise immunity	95/54 EG & DIN 40839
E1 number	upon request

Dimensions



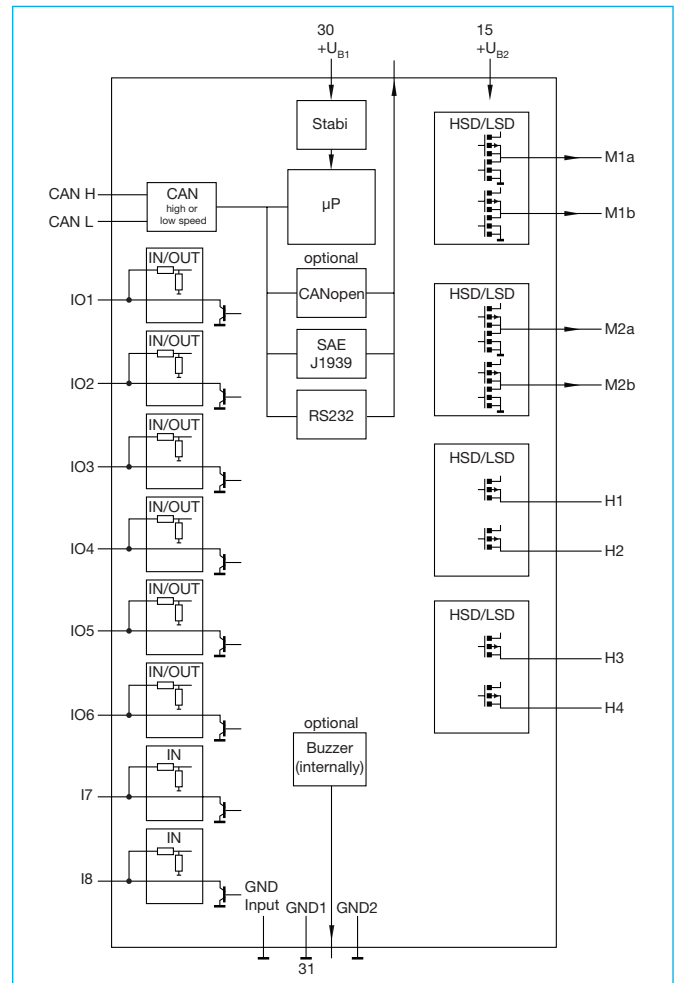
Ordering information

Type no.	SCS30 Smart Control Systems
Operating voltage	3 12 V / 24 V
Low Power I/Os	0 6 I/Os 2 I
HSD outputs	0 4 x 1 A; 4 x 2 A 1 8 x 1 A
Standard	100-000 standard CAN 2.0 B
Custom designed versions	049 project index number according to region (international area code), e.g. Germany +49 = 049 France +33 = 033 Portugal +351 = 351 USA +1 = 001
Project number part 2	001 serial number
Main outputs - current rating	4 x 2 A 8 x 1 A

Ordering examples

SCS30-3 0 0 - 100 - 000 - 4 x 2 A only hardware
SCS30-3 0 0 - 049 - 001 - 4 x 2 A for customised software

Schematic diagram / pin assignment



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