

Description

Digitisation is increasing more and more in the automotive sector. Modern vehicles and machines are equipped with numerous sensors and communication interfaces. The CAN bus technology and the SAE J1939 network protocol based on the CAN 2.0B specification form the standard for the cross-linking of components in utility vehicles of all kinds. The Smart Control Systems group developed by E-T-A combines intelligent systems, power distribution systems and components capable to communicate via CAN.

System size and high load currents play an important role in increasingly ingenious vehicle architecture, where space in the vehicle is limited.

The SCS3000 and SCS1000 series are extremely compact, intelligent power distribution systems. The programmable I/O controllers offer significant design and application flexibility, coupled with industry-leading performance in one of the smallest form factors.

The SCS3000/1000 are ideal in terms of upgradeability for fleet modernisation, retrofits and projects where space saving is paramount. The products are designed for use in harsh environments.

The SCS3000/1000 modules are configured via an intuitive graphic programming software.



SCS1000

Order numbering code

Order numbers	Short description
SCS1000-16HS-AL	SCS1000-16 Power Distribution Unit for High Side Switching (16 channels) SCS1000-16 Power Distribution Unit for Low Side Switching (16 channels)
SCS1000-16LS-AL	
SCS1000-16HS-Con SCS1000-16LS-Con	SCS1000-16HS Connector set SCS1000-16LS Connector set
SCS1000-16HS-Loom-X.Xm	SCS1000-16HS cable harness (for nominal current) SCS1000-16LS cable harness (for nominal current)
SCS1000-16LS-Loom-X.Xm	
X.X: Selectable length of 1.0 m to 5.0 m (in 0.2 m graduations) Example: SCS1000-16HS-Loom-1.2m	

The software PDUsetup which is used to configure SCS1000 is available for download on the E-T-A website:
https://global.e-t-a.com/products/intelligent_power_distribution_systems/scsr_smart_control_systems_international/p/scs1000/



Applications

Scope of applications:

- Specialty vehicles, construction machinery, agricultural machinery, trucks & buses
- Intelligent power distribution
- Upgradeability and retrofit for fleet modernisation

Benefits

- Increased safety and diagnosis by way of real-time analysis and electronic load protection
- Space-saving and robust through efficient semi-conductor technology and optimised wiring
- Adapted to your needs, through customised software configuration

Approvals

Approval authority	Reference	Directive
VCA	E11*10R05/00*11361*00	ECE Reg. No. 10

All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of improved design, performance and cost effectiveness. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. Dimensions, data, drawings and description are not binding! Amendments, errors and omissions excepted. Ordering codes of the products may differ from their marking.

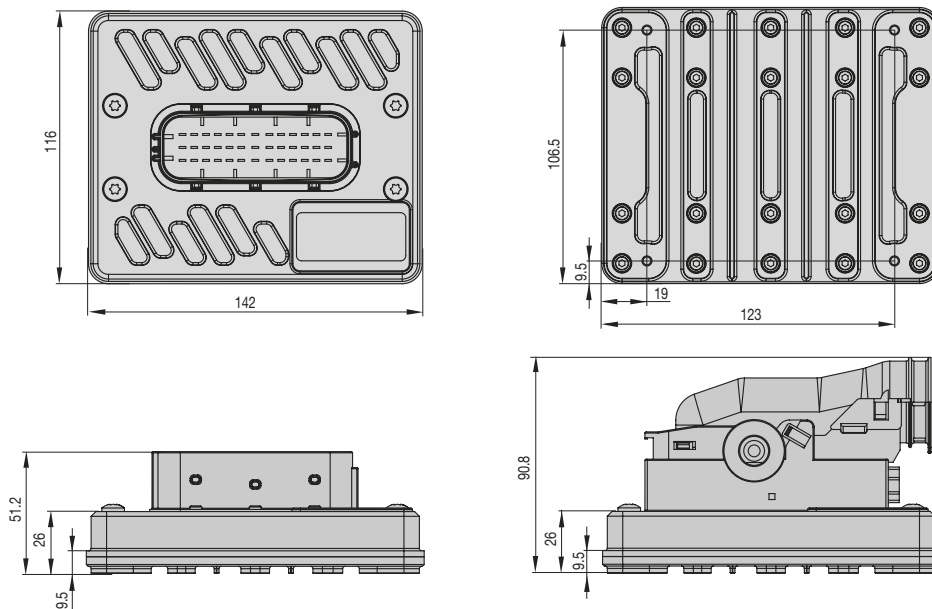
Technical data SCS1000-16HS, -16LS

Rated voltage	DC 12 V/24 V
Input voltage range	DC 6.5 V ... 32V
Total current	160 A
Quiescent current input	200 mA (depending on supply voltage) 2.5 mA (in sleep mode)
Ambient temperature	-40 ... +85 °C
Degree of protection	IP67
EMC	ECE Regulation No. 10 (E11)
Environment	Tested to ISO 16750
Mass	537 g
Dimensions	142 mm x 116 mm x 49 mm (without mating connector)
Housing	Aluminium milled
Terminals	Tyco Leavyseal 39 Pin
Outputs	
4 multifunctional outputs	SCS1000-16HS: 35 A High Side SCS1000-16LS: 35 A Low Side PWM: 125 Hz
2 high power outputs	SCS1000-16HS: 35 A High Side SCS1000-16LS: 35 A Low Side
10 additional outputs	SCS1000-16HS: 12 A High Side SCS1000-16LS: 12 A Low Side

Technical data SCS1000-16HS, -16LS

Current limitation for high current loads	Adjustable via software Different softstart behaviour selectable for resistive or inductive loads
Total error output	Configurable with related reset input
Overload	All outputs are short circuit and thermally protected SMD fuses at the outputs Temperature based tripping depending on board temperature adjustable via software
64 soft outputs	8 bit variables, transmission via CAN frames
Inputs	
12 digital/ analogue inputs	0-32 V 4 inputs as thermistor inputs configurable, 3kΩ pull-up-resistance via software activatable
128 soft inputs	8 bit variables, reception via CAN frames Configurable via software
Interfaces	
CAN	1 x CAN 2.0B or SAE J1939
Supply	
Sleep Mode	2 modes available: Soft Sleep and Deep Sleep

Dimension drawing SCS1000-16HS, -16LS



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Pin assignment SCS1000-16HS-AL

Connector 1			
Mating connector: TE 5-1718321-3, cap: 1418882-1			
Pin	Cross section	Name	Description
1	24-16AWG	OUTPUT #01	High Side 35 A, PWM
2	24-16AWG	OUTPUT #02	High Side 35 A, PWM
3	24-16AWG	OUTPUT #03	High Side 35 A, PWM
4	24-16AWG	OUTPUT #04	High Side 35 A, PWM
5	24-16AWG	OUTPUT #05	High Side 35 A
6	24-16AWG	OUTPUT #06	High Side 35 A
7	24-16AWG	OUTPUT #07	High Side 12 A
8	24-16AWG	OUTPUT #08	High Side 12 A
9	24-16AWG	OUTPUT #09	High Side 12 A
10	24-16AWG	OUTPUT #10	High Side 12 A
11	24-16AWG	OUTPUT #11	High Side 12 A
12	24-16AWG	OUTPUT #12	High Side 12 A
13	24-16AWG	OUTPUT #13	High Side 12 A
14	24-16AWG	OUTPUT #14	High Side 12 A
15	24-16AWG	OUTPUT #15	High Side 12 A
16	24-16AWG	OUTPUT #16	High Side 12 A
17	24-16AWG	CAN#01	CAN low
18	24-16AWG	CAN#01	CAN high
19	24-16AWG	INPUT#01	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
20	24-16AWG	INPUT#02	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
21	24-16AWG	INPUT#03	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
22	24-16AWG	INPUT#04	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
23	24-16AWG	INPUT#05	Analogue 0-32 V
24	24-16AWG	INPUT#06	Analogue 0-32 V
25	24-16AWG	INPUT#07	Analogue 0-32 V
26	24-16AWG	INPUT#08	Analogue 0-32 V
27	24-16AWG	INPUT#09	Analogue 0-32 V
28	24-16AWG	INPUT#10	Analogue 0-32 V
29	24-16AWG	INPUT#11	Analogue 0-32 V
30	24-16AWG	INPUT#12	Analogue 0-32 V
31	24-16AWG	SENSOR GND	Sensor mass, protected
32	24-16AWG	WARNING AND RESET SW	Error output for LED to ground; for manual reset connect to ground
33	24-16AWG	Power ground	Battery -
34	24-16AWG	POWER IN (+ve)	Battery +
35	24-16AWG	POWER IN (+ve)	Battery +
36	24-16AWG	POWER IN (+ve)	Battery +
37	24-16AWG	POWER IN (+ve)	Battery +
38	24-16AWG	POWER IN (+ve)	Battery +
39	24-16AWG	POWER IN (+ve)	Battery +

Pin assignment SCS1000-16LS-AL

Connector 1			
Mating connector: TE 5-1718321-3, cap: 1418882-1			
Pin	Cross section	Name	Description
1	24-16AWG	OUTPUT #01	Low Side 35 A, PWM
2	24-16AWG	OUTPUT #02	Low Side 35 A, PWM
3	24-16AWG	OUTPUT #03	Low Side 35 A, PWM
4	24-16AWG	OUTPUT #04	Low Side 35 A, PWM
5	24-16AWG	OUTPUT #05	Low Side 35 A
6	24-16AWG	OUTPUT #06	Low Side 35 A
7	24-16AWG	OUTPUT #07	Low Side 12 A
8	24-16AWG	OUTPUT #08	Low Side 12 A
9	24-16AWG	OUTPUT #09	Low Side 12 A
10	24-16AWG	OUTPUT #10	Low Side 12 A
11	24-16AWG	OUTPUT #11	Low Side 12 A
12	24-16AWG	OUTPUT #12	Low Side 12 A
13	24-16AWG	OUTPUT #13	Low Side 12 A
14	24-16AWG	OUTPUT #14	Low Side 12 A
15	24-16AWG	OUTPUT #15	Low Side 12 A
16	24-16AWG	OUTPUT #16	Low Side 12 A
17	24-16AWG	CAN#01	CAN low
18	24-16AWG	CAN#01	CAN high
19	24-16AWG	INPUT#01	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
20	24-16AWG	INPUT#02	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
21	24-16AWG	INPUT#03	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
22	24-16AWG	INPUT#04	Analogue 0-32 V, 3k Ω activatable pull-up to 5 V
23	24-16AWG	INPUT#05	Analogue 0-32 V
24	24-16AWG	INPUT#06	Analogue 0-32 V
25	24-16AWG	INPUT#07	Analogue 0-32 V
26	24-16AWG	INPUT#08	Analogue 0-32 V
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34	24-16AWG	Power ground	Battery -
35	24-16AWG	Power ground	Battery -
36	24-16AWG	Power ground	Battery -
37	24-16AWG	Power ground	Battery -
38	24-16AWG	Power ground	Battery -
39	24-16AWG	Power ground	Battery -

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