

SCP for Combustion Engines

Signal Conditioning System, with optional PiezoSmart®

Types 2853A..., 2854A...,
4665, 5064A...,
5225A1, 5227A...,
5247, 5613A..., 5269...

The "Signal Conditioning Platforms" SCP and SCP-Compact are modular systems for the conditioning of a wide range of different measuring signals, such as signals from piezoelectric and piezoresistive pressure sensors. They are specifically well suited for combustion pressure measurements on engine test beds and in-vehicle applications.

The key features for SCP and SCP-Compact are:

- Modular design for maximum flexibility (up to 32 channels)
- Improved interference resistance of measuring signals
- Remote controlled via any PC
- Power supply with voltage range from 100 ... 240 VAC and 10 ... 36 VDC
- Graphical User Interface (GUI)
- Function and signal compatible with all combustion analyzers
- PiezoSmart sensor identification for increased process reliability and improved data quality

Description

The SCP and SCP-Compact largely consists of a base unit and function-specific measuring modules. For combustion pressure measurements and combustion analysis on engines, a wide range of different and interchangeable measuring modules for front-end signal conditioning is available.

If the automatic sensor identification PiezoSmart is used, all relevant data of an individual sensor are stored on a TEDS (Transducer Electronic Data Sheet) and are available for automatic setting of parameters and adjustments.

Though process reliability of test procedures and quality of measurement data are significantly improved by simultaneously simplifying test bed setup and test preparations.

Application

With the function-specific modules, measuring tasks within combustion pressure and gas exchange, as well as injection pressure and general pressure measurements are efficiently accomplished.

Due to the small dimensions and low voltage power supply, SCP-Compact is most suited for in-vehicle testing.



SCP for 8 Measuring Modules Type 2853A...



SCP-Compact for 6 Measuring Modules Type 2854A...



SCP-Compact for 4 Measuring Modules Type 2854A...

Available Software Interfaces (in Preparation):

- FEV CAS
- D2T OSIRIS
- A&D CAS
- ONO SOKKI DS-2000
- (AVL INDICOM)
- (DEWETRON)

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Modules for Signal Conditioning System

The following function specific measuring modules are available:

- Charge amplifier without sensor identification Type 5064A1
- Charge amplifier with sensor identification Type 5064A2
- Piezoresistive amplifier with sensor identification Type 4665
- Amplifier interface Type 5613A1Q01
- Voltage amplifier Type 5227A1Q01
- Needle hub amplifier Type 5247
- pMax Module Type 5269

Available Measuring Modules



↓
Universal Base Units



SCP 19" -Desktop version Type 2853A120, 8 slots



SCP-Compact 19" -Rack mounting Type 2854A111, 6 slots



SCP 19" -Rack mounting Type 2853A110, 8 slots



SCP-Compact Type 2854A131, 4 slots

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Technical Data, SCP Base Unit Type 2853A...

Chassis

Module cards	max.	8
Channels per Rack	max.	16
with rack combination	max.	32
Degree of protection	IP	40
Dimensions 19"-Rack mounting		
Height	HE (mm)	3 (132,5)
Width	TE (mm)	84 (426,7)
Depth (incl. outgoing cable)	mm	min. 350
Weight (without modules)	kg	≈5,6
Software	Graphical User Interface (GUI) COM components for Micro- soft Windows NT, 2000, XP	

AC Power Supply

Power	VAC	100 ... 240 ±10%
Power line frequency	Hz	48 ... 62
Power consumption max.	VA	95
Operating temperature range ¹⁾	°C	0 ... 60
Min/Max temperature range ¹⁾	°C	-40 ... 60
Power connector (2P+E, Protection class I)	IEC 320C14	

DC Power Supply

Power supply	VDC	11 ... 36
Max. power consumption	W	80
Inrush current	A	≈15
Fuse	8A (slow-blow) (SPT)	
Operating temperature range	°C	0 ... 50
Min/Max temperature range ¹⁾	°C	-40 ... 50

¹⁾ non condensing

Analog interface card (Type 5225A1)

Analog outputs	32	
Voltage	V	0 ... ±10
Current (per channel)	mA	0 ... ±2
Error	%	<±0,1

Trigger output (optocouplers)

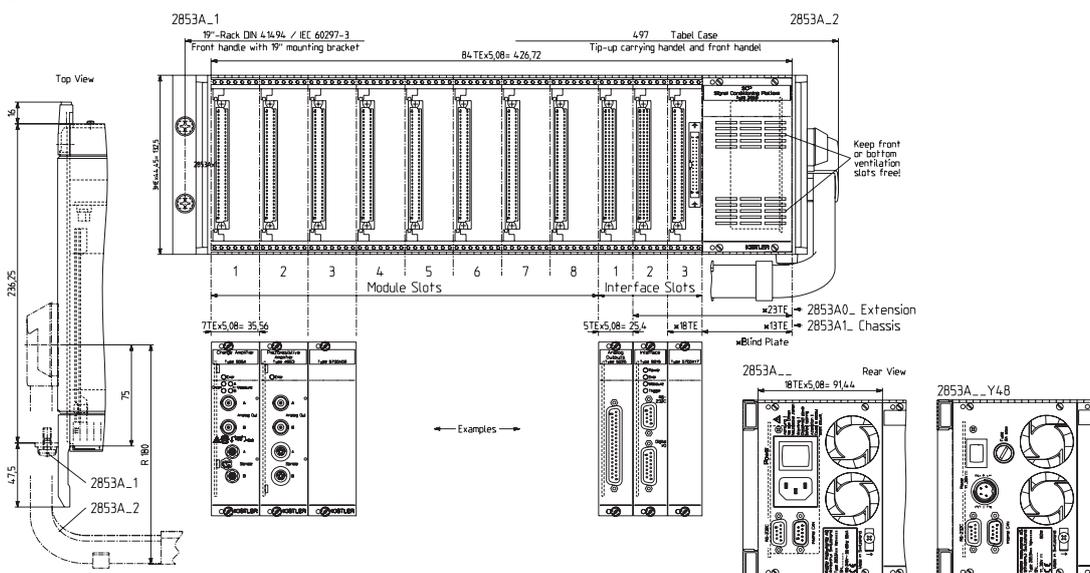
High	V	>2,4
Low	V	<0,8
Pull-up on +5 V RS	kΩ	10
Connection	Type	D-Sub 37 pin neg.

CPU interface card Type 5615 (Type 2853A110 and Type 2853A120)

Interface	Type	RS-232C
Trigger/Operate input (Optokoppler)	–	connected to type 5225A1 via optocouplers (only trigger)
High	V	3 ... 30
Low	V	<2
Current input High	mA	2 ... 29
Pull-up on +24 V (connectible)	kΩ	10
Pull-down on DGND (connectible)	kΩ	1
Connection	Type	D-Sub 9 pin neg.
Digital outputs	–	isolated solid state relay
DOUTA1 ... B4		
Current load (continuous)	mA	<100
Voltage (continuous)	V	<±42
Voltage for external devices	V	24
Current draw max.	mA	50
Connection	Type	D-Sub 15 pin neg.

Dimensions

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Technical Data, SCP Base Unit Type 2854A...

Chassis

Module cards	max.	4/6
Channels per Rack	max.	8/12
Power supply		
Standard	VDC	10 ... 36
With external power supply	VAC	100 ... 240 ±10 %
Power consumption max.	VA	70
Inrush current	A	≈15
Degree of protection	IP	40
Fuse	8A (slow-blow) (SPT)	
Operating temperature range ¹⁾	°C	0 ... 50
Min/Max temperature range ¹⁾	°C	-40 ... 50
Dimensions Type 2854A111/121		
Height	HE (mm)	2 (88,6)
Width	TE (mm)	84 (426,72)
Depth	mm	min. 400
Dimensions Type 2854A131/132		
Height	HE (mm)	107,6
Width	TE (mm)	302,4
Depth	mm	min. 400
Weight (without modules)	kg	≈3,5
Software	Graphical User Interface (GUI) COM components for Microsoft Windows NT, 2000, XP	

¹⁾ non condensing

Analog interface card (integrated)

Analog outputs	8/12	
Voltage	V	0 ... ±10
Current (per channel)	mA	0 ... ±2
Error	%	<±0,1
Trigger output (optocouplers)		
High	V	>2,4
Low	V	<0,8
Pull-up on +5 V RS	kΩ	10
Connection	Type	D-Sub 37 pin neg.

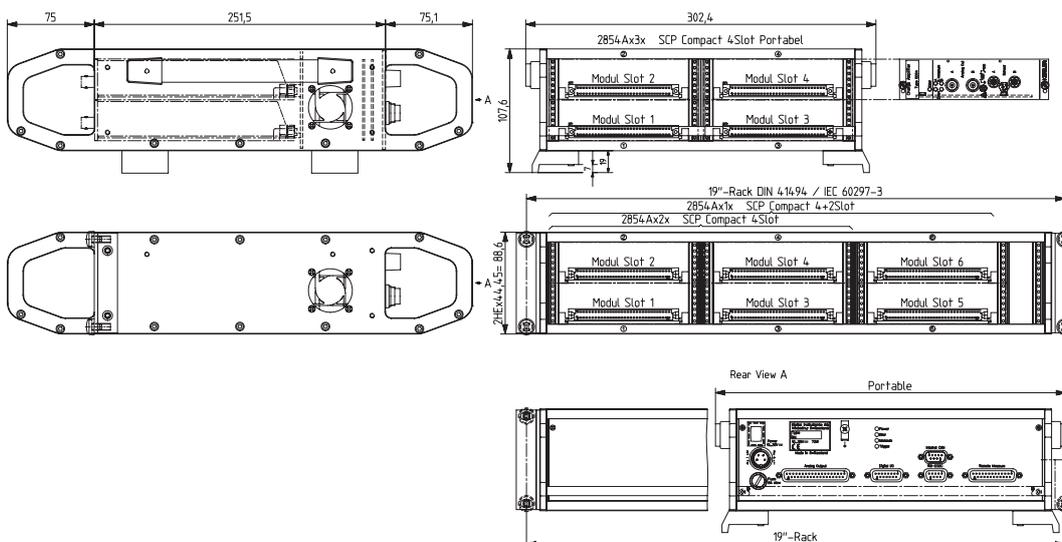
CPU interface card (integrated)

Interface	Type	RS-232C
Connection	Type	D-Sub 9 pin neg.

Digital I/O

Trigger/Operate input (Optokoppler)	–	Connected to type 5225A1 via optocouplers (only trigger)
High	V	3 ... 30
Low	V	<2
Current input High	mA	2 ... 29
Pull-up on +24 V (connectible)	kΩ	10
Pull-down on DGND (connectible)	kΩ	1
Connection	Typ	D-Sub 9 pin neg.
Digital outputs	–	isolated solid state relay
DOUA1 ... B4		
Current load (continuous)	mA	<100
Voltage (continuous)	V	<±42
Voltage for external devices	V	24
Current draw max.	mA	50
Connection	Type	D-Sub 15 pin neg.

Dimensions



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Technical Data Valid for all Modules

All values for setting the parameters are stored in a non-volatile data memory and are automatically loaded on initial startup. Operating the system and setting the parameters are performed exclusively with a PC via GUI or with a host computer.

Operating temperature range ¹⁾	°C	0 ... 60
Min./max. temperature ¹⁾	°C	-40/60
Vibration resistance (20 ... 2 000 Hz, duration 16 min, cycle 2 min)	gp	10
Shock resistance (1 ms)	g	200
Sound resistance	dBA	120
Degree of protection (EN 60529)	IP	40
Front panel dimensions	mm	128,7x35,0
	HE	3
	TE	7

¹⁾ non condensing

Charge Amplifier Type 5064A1

The module Type 5064A1 is a microprocessor-controlled 2-channel charge amplifier with analog signal conditioning to compensate for load cycling drift in transient mode with uncooled sensors.

Apart from the sensor-specific data to be entered, it is also possible to preselect three different low-pass filters as well as a -8V offset with simultaneous signal gain with a factor of 1,8 for full utilization of the analog/digital converter.

A differential amplifier stage prevents ground loops in each channel. The connecting screw M2x2,5 (on the front of the amplifier module) connects the signal ground at the input to the protective ground (instrument case).



Technical Data

Charge amplifier Type 5064A1

Number of channels	-	2
Measuring range (resolution <0,1 %)		
without offset	pC	±100 ... ±50 000
with -8 V offset	pC	±162 ... ±50 000
Error (0 ... 60 °C)	%	<±0,5
typical	%	<±0,2
Drift "Long"		
at 0 ... 60 °C	pC/s	<±0,2
at 25 °C	pC/s	<±0,05
typical	pC/s	<±0,03
Reset-operate transition ("Long")	pC	<±1
Time constant ("Long")	s	>10 000
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Zero point error (Reset)	mV	<±5
Output noise (0,1 Hz ... 1 MHz)	mV _{pp}	<5
Frequency range (20 V _{pp})	kHz	≈0 ... >90
Group delay time	μs	<4
Low-pass filter (2 nd order, selectable)	kHz	5, 10, 20
"Overload" threshold	V	≈±10,5
Offset adjustable (gain 1,8)	V	-8,0 ±0,05
Max. voltage between sensor GND and output/supply GND	V	<±25
Common mode noise rejection (0 ... 100 Hz)	dB	>60
Crosstalk attenuation Ch1, Ch2	dB	>80
Power supply (module)	-	via SCP
Weight	kg	0,41

Drift Compensation (selectable)

Zero point deviation	mV	<±5
Amplitude error at 5 Hz (represents a speed of 600 1/min on a four-stroke engine)	%	<1

Connections

Signal inputs	Type	BNC neg.
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Charge Amplifier Type 5064A2

This charge amplifier is a signal conditioning unit which is exactly identical to Type 5064A1 but includes sensor identification.

Apart from the sensor-specific data to be entered, it is also possible to preselect three different low-pass filters as well as a –8V offset with simultaneous signal gain with a factor of 1,8 for full utilization of the analog/digital converter.

A differential amplifier stage prevents ground loops in each channel. The connecting screw M2x2,5 (on the front of the amplifier module) connects the signal ground at the input to the protective ground (instrument case).



Technical Data

Number of channels	–	2
Measuring range (resolution <0,1 %)		
without offset	pC	±100 ... ±50 000
with –8 V offset	pC	±162 ... ±50 000
Error (0 ... 60 °C)	%	<±0,5
typical	%	<±0,2
Drift "Long"		
at 0 ... 60 °C	pC/s	<±0,2
at 25 °C	pC/s	<±0,05
typical	pC/s	<±0,03
Reset-operate transition ("Long")	pC	<±1
Time constant ("Long")	s	>10 000
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Zero point error (Reset)	mV	<±5
Output noise (0,1 Hz ... 1 MHz)	mV _{pp}	<5
Frequency range (20 V _{pp})	kHz	≈0 ... >90
Group delay time	μs	<4
Low-pass filter (2 nd order, selectable)	kHz	5, 10, 20
"Overload" threshold	V	≈±10,5
Offset adjustable (gain 1,8)	V	–8,0 ±0,05
Max. voltage between sensor GND and output/supply GND	V	<±25
Common mode noise rejection (0 ... 100 Hz)	dB	>60
Crosstalk attenuation Ch1, Ch2	dB	>80
Power supply (module)	–	via SCP
Weight	kg	0,42

Interface, Sensor Detection

Connection according to IEEE1451.4	–	–
Max. length for triax extension cable	m	10
Temperature range for PiezoSmart-coupling	°C	–20 ... 85

Connections

Signal inputs	Type	TRIAx
Signal outputs	Type	BNC neg.
Actuation, outputs, supply	Type	64 pin DIN 41612

Piezoresistive Amplifier Type 4665

The measuring module Type 4665 is a microprocessor-controlled 2-channel amplifier for piezoresistive sensors with analog signal conditioning, automatic sensor identification PiezoSmart, adjustable value, supply current sensor and zeropoint.

This measuring module is used for signal amplification of piezoresistive pressure sensors and is used typically for measuring injection pressure as well as the pressures in the inlet / exhaust element of combustion engines.

In addition to the input of sensor-specific data, parameter settings also allow selection of three different low-pass filters, a $-8V$ or $-10 V$.



Technical Data

Number of channels	–	2
Gain	–	10 ... 270
Additional gain	–	1 ... 10 (in 0,1)
Error (0 ... 60 °C)	%	< \pm 0,3
typical	%	< \pm 0,1
Output voltage	V	0 ... \pm 10
Output current	mA	0 ... \pm 2
Output impedance	Ω	10
Zero point adjustment range		
referred to input	mV	-100 ... 500
Output interference signal		
(0,1 Hz ... 1 MHz) Amplif. \leq 100 Filter off	mV _{pp}	<20
(0,1 Hz ... 1 MHz) Amplif. \leq 100 Filter 30kHz	mV _{pp}	<10
(0,1 Hz ... 1 MHz) Amplif. \leq 270 Filter off	mV _{pp}	<40
(0,1 Hz ... 1 MHz) Amplif. \leq 270 Filter 30kHz	mV _{pp}	<20
Frequency range (20V _{pp}), up to Amplif. 10 ... 270	kHz	0 ... >90
Low-pass filter	kHz	3, 10, 30
Linearity adjustment, second power	%	-3 ... 3 (in 0,1)
"Overload" threshold	V	\approx \pm 10,5
Additional zero point shift	V	-8 or -10
or taring range	V	0 ... -10
Power supply (module)	–	via SCP
Weight	kg	0,32

Sensor

Sensor supply (I ref)	mA	1 or 4
Maximum load (I ref: 4 mA)	k Ω	5
Minimum load (I ref: 1 mA)	k Ω	20

Interface, Sensor Detection

Connection according to IEEE 1451.4	–	–
Max. length for extension cable	m	10
Temperature range for PiezoSmart-coupling	°C	-20 ... 85

Connections

Signal inputs	Type 103 (Fischer, 5 pin)
Signal outputs	Type BNC neg.
Actuation, outputs, supply	Type 64 pin DIN41612

Needle Lift Amplifier Type 5247

The needle lift measurement is used to determine the injection point (start, duration, end) in Diesel engines. In order to be able to measure the needle lift in injection nozzles, the needle holder in the injection nozzle must be fitted with a Hall sensor. The voltage change at the Hall sensors provides information on the movement of the injection needle. The needle lift function is a standard measurand for Diesel engine or injection system development.

The microprocessor-controlled 2-channel needle lift amplifier has differential inputs as well as a power supply for Hall sensors. An automatic zero correction which can be activated provides compensation for the temperature-dependent zero point of the Hall sensor. An autorange device also facilitates amplifier adjustment. Interference suppression is guaranteed by a differential amplifier input stage.



Technical Data

Number of channels	–	2
Input voltage range, absolute	V	0 ... ±12
Gain		0,8 ... 75
Error		
with gain <2	%	<±1,5
with gain >2	%	<±1
Input voltage range, differential	V _{pp}	0 ... 10
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Frequency range (20 V _{pp})	Hz	0 ... 90 000
Adjustable output offset in 1 V steps	V	+1 ... –8
Max. voltage between sensor-GND and output/supply-GND	V	<±50
Power supply (module)	–	via SCP

Sensor

Supply voltage	V	12
Error	%	<±2
Maximum supply current	mA	15

Connections

Actuation, outputs, supply	Type	64 pin DIN41612
Sensor	Type	Binder Serie 711
Analog output	Type	BNC

Automatic Amplifier Adjustment

On activation of the automatic gain adjustment, the output signal is amplified to maximum 80 % of FS (8 V or –8 V). Depending on the output signal, Autorange lasts for several cycles and up to 600 ms. This function is carried out via the CAN bus or by pressing a button. With button actuation a message appears via the CAN bus.

Automatic Zero Point Correction

The automatic zero point correction determines the cycle period duration of the injections and corrects the output signal in the middle of the period to zero. A single or continuous automatic zero point correction is possible. This function is performed via the CAN bus or at the press of a button. With button actuation, a single zero point correction takes place with a message via the CAN bus.

pMax Module Type 5269 for Measuring and Monitoring Maximum Pressures

The new two-channel pMax module Type 5269 offers an ideal expansion for the universal Signal Conditioning Platform (SCP) for continuous monitoring and measurement of the cylinder peak pressure pmax on Diesel and spark ignition engines. The SCP charge amplifiers Type 5064A... supply the pMax module with a voltage signal proportional to the cylinder pressure. When a specified threshold value is reached, a warning or a digital emergency stop signal is generated. At the same time, the unit produces an output voltage signal which is proportional to the maximum cylinder pressure of the last combustion cycle. This signal can simply be picked off via the usual analog inputs of the test stand measuring setup. As a result, the pMax module is ideal for the monitoring and measurement of endurance running. Expensive combustion analysis systems can often be replaced. Signal noise, e.g. due to pipe oscillations and valve vibrations, can be effectively suppressed by using a high performance filtering system on the input signal.



Functional Description

The pressure signal measured, which comes from the amplifier, is investigated with regard to the pmin and pmax values in each combustion cycle. The dataquisition of the pmin and pmax value is done by an analogue peak value memory. These values are recorded and used to determine the peak-peak value of the combustion cycle concerned. A distinction is made between three measuring modes: "peak – peak", "(peak – peak) + pInlet" and "(peak – peak) + const. pInlet". Depending on the measuring method selected, the maximum pressure which is output represents the pure peak-peak value of the combustion cycle or a peak-peak value corrected by either the constant induction-pressure value or the measured induction pressure value. The maximum pressure values measured can be averaged over a selectable number of combustion cycles (n = 1...50) for the analog output. The pressure signal measured is constantly monitored in relation to various criteria. When certain events are recorded, an "emergency stop

signal" is triggered. An action (shutting off the engine, changing the rate of injection etc.) can thereby be initiated manually or automatically. Three thresholds are used for signal monitoring: the min. threshold, the max. threshold and the emergency stop threshold. These thresholds can be set with respect to one another so that a large number of possible situations can be monitored according to individual requirements. A cycle monitoring system investigates the quality of the pressure signal and indicates if a "meaningful" pressure signal is no longer detected, because for example the measuring chain breaks down or the speed drops below 100rpm. If the max. threshold is exceeded by more than a selectable number (based on the last 50 cycles), an emergency stop is triggered. If the emergency threshold is exceeded on any one occasion, an emergency stop signal is likewise output. Failure of the cycle detection also leads to a stop signal, since in this case monitoring can no longer be guaranteed. In addition, an overload at the input of the pMax module produces an emergency stop. The measurement which has been started with the command "Measure" on the Graphical User Interface (GUI), also continues to run in the event of an emergency stop until a "Reset" is carried out. Analog output of the pmax values can, on the one hand, take place continuously via the two BNC connections (pmax Out) or via SCP analog output card Type 5225A1. On the other hand, the 40 pmax values before and the 10 values after an emergency event are recorded in a memory and remain available until a reset or a new measurement is carried out. This history allows the reasons for an emergency event to be investigated and any appropriate adjustments made. For the monitoring, individual pmax values of a combustion cycle are always observed. The various statuses of the pmax monitoring are additionally visually indicated with LEDs. The various ancillary functions can be utilized using the integral D-Sub 15 neg. connector. For example, the cycle monitoring can be switched off, the analog inlet of the induction pressure measured can be undertaken and an emergency stop circuit via several pMax modules can be set up with the digital output for the emergency signal.

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Technische Daten

Inputs for pMax Analysis

Number of cylinder pressure channels (input for p cylinders A & B)	–	2
Input for boost pressure (pInlet)	–	1
Analog input voltage (p cylinder A, p cylinder B, pInlet)	V	0 ... ±10

Signal Processing

Input voltage ranges FS range (3 ranges)	V	0 ... 10 –8 ... 10 –10 ... 10
Speed range	1/min	100 ... >6 000
TP-SC filter (5th order, Bessel)	kHz	5, 10, off
Frequency range with TP filter "off"	kHz	0 ... ≈17
Resolution	bit	12
Number of combustion cycles for creating pmaxppav by averaging pmaxpp	ASP	1 ... 50
Sampling rate per channel (analog peak value memory)	/ASP	1
Number of overranges th_pmax for emergency stop	/50 ASP	1 ... 50
Threshold values for (th_pmax, th_pmin, th_pstop), per channel	–	3
threshold pmax_A, pmax_B	M.U.	1,0 ... 4 350
threshold pmin_A, pmin_B	%pmax	1 ... 99
threshold pstop	M.U.	1,0 ... 4 350
Input overload at...	V	FSRange ±0,5

Analog Outputs for Peak-Peak Pressure

Output voltage ranges (pmax Out A/B) selectable	V	0 ... 5 0 ... 10 –8 ... 10 –10 ... 10
Output current	mA	0 ... ±2
Output resistance	Ω	10
Error	%	<±1

Output interference signal (0,1Hz ... 1MHz)	mVpp	<10
Zero error	mV	±10

Digital Outputs

Digital warning outputs	–	4 (2/Kanal)
Digital stop output	–	1 /Modul
Current loading (constant)	mA	<100
Pulsed current loading (<0,1 s)	mA	<300
Resistance in the powered-up condition	Ω	<50 (typ. 30)
Continuous voltage	V	<±42
Voltage between outputs and protective ground	Vrms	<30

Digital Inputs

Cycle monitoring	deactivate	V	3 ... 30
	activate	V	<2
	or Input open		
Trigger current	mA		0,6 ... 9

General Information

Weight	kg	0,3
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Display

LED for warning signals		
MinChA, MinChB	–	(yellow) 2
MaxChA, MaxChB	–	(red) 2
LED for emergency stop signal		
Stop	–	(red) 1
LED for error display		
Error	–	(red) 1

Connections

Signal inputs and outputs (boost pressure, Emergency stop etc.)	Typ	D-Sub 15-pin neg.
Signal inputs (input cylinders A & B)	Typ	BNC neg.
Signal outputs	Typ	BNC neg.
Trigger, supply	Typ	64-pin DIN 41612

Included Accessories

• D-Sub connector 15-pin pos. with soldered connection	7.640.049
• 2 Connecting cable BNC pos., l = 0,2 m	1601B0,2

Optional Accessories

• D-Sub connector 15-pin pos. with screw connection	7.640.090
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Amplifier Interface Type 5613A1Q01

The measuring module Type 5613A1Q01 is a microprocessor-controlled 2-channel amplifier with analog signal conditioning and is used for interfacing to external at-site amplifiers or transmitters. With the amplifier interface Type 5613A1Q01, a piezoresistive injection pressure measuring system can be operated with Type 4067...A0/A2 and Type 4618. In this case, the amplifier interface Type 5613A1Q01 supplies the piezoresistive amplifier Type 4618 with its power supply, in which the output signal in Type 5613A1Q01 is simply looped through.



Technical Data

Number of channels	–	2
Measuring range	V	±10
Gain	–	1
Error (0 ... 60 °C)	%	<±0,1
Input impedance	kΩ	>300
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Zero point error	mV	<±2
Output interference signal (0,1 Hz ... 1 MHz)	mV _{pp}	<10
Frequency range (20 V _{pp})	kHz	0 ... >50
Power supply (module)	–	via SCP
Weight	kg	0,16

Power supply of the at-site amplifier

Power supply	VDC	24
Current consumption per at-site amplifier	mA	<45

Connections

Signal inputs (on-site amplifier)	Type	D-Sub 9f
Signal outputs	Type	BNC neg.
Actuation, outputs, supply	Type	64 pin DIN 41612
Connecting cable to Amplifier Type 4618A...	Type	1200A29

Voltage Amplifier Type 5227A1Q01

The measuring module Type 5227A1Q01 is a microprocessor-controlled 2-channel voltage amplifier with analog signal conditioning. It is equipped with differential inputs with a common ground and is used mainly when signal sources have different potentials. With four permanently set gain values, it is suited to amplify any voltage signals.



Technical Data

Number of channels	–	2
Measuring range (when gain = 1)	V	±10
Gain, adjustable	–	1/2/5/10
Error (0 ... 60 °C)	%	<±0,5
Input impedance	MΩ	10
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Zero point error	mV	<±10
when gain = 10	mV	<±20
Output noise signal (0,1 Hz ... 1 MHz)	mV _{pp}	<10
Frequency range (20 V _{pp})		
–3 dB	kHz	0 ... >50
–5 %	kHz	0 ... >30

Max. voltage between sensor GND and output/supply GND	V	<±50
Common mode noise rejection (0 ... 100 Hz)	dB	>70
Weight	kg	0,21
Power supply (module)	–	via SCP

Connections

Signal inputs	Type	BNC neg.
Signal outputs	Type	BNC neg.
Actuation, outputs, supply	Type	64 pin DIN 41612

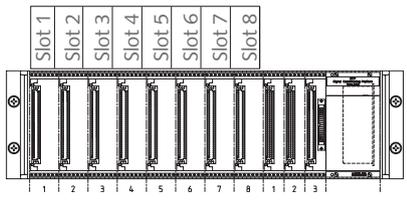
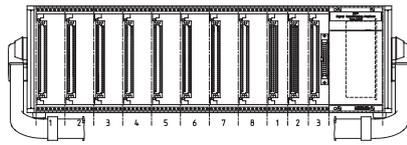
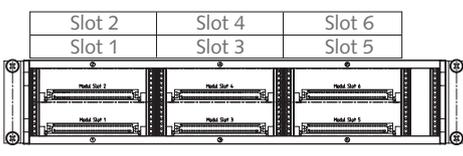
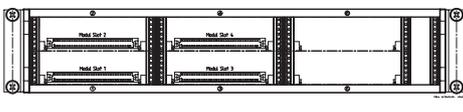
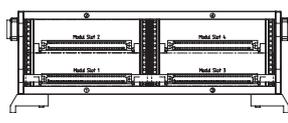


Order form with Ordering Code

Signal Conditioning Platform Base Unit

SCP Type 2853A... und SCP-Compact Type 2854A...

Please always place your order with this form.

SCP without Modules	SCP-Compact without Modules																								
<p>Ordering Code</p> <p style="text-align: right;">Type 2853A <input style="width: 50px;" type="text"/></p>  <p>19"-Rack Mounting</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>System (Master)</td> <td style="text-align: right;">110*</td> </tr> <tr> <td>Extension (Slave)</td> <td style="text-align: right;">010**</td> </tr> <tr> <td>System (Master)</td> <td style="text-align: right;">110Y48</td> </tr> <tr> <td>DC power supply</td> <td></td> </tr> <tr> <td>Extension (Slave)</td> <td style="text-align: right;">010Y48</td> </tr> <tr> <td>DC power supply</td> <td></td> </tr> </table>  <p>19" Desktop Version</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>System (Master)</td> <td style="text-align: right;">120*</td> </tr> <tr> <td>Extension (Slave)</td> <td style="text-align: right;">020**</td> </tr> <tr> <td>System (Master)</td> <td style="text-align: right;">120Y48</td> </tr> <tr> <td>DC power supply</td> <td></td> </tr> <tr> <td>Extension (Slave)</td> <td style="text-align: right;">020Y48</td> </tr> <tr> <td>DC power supply</td> <td></td> </tr> </table> <p><small>*Integrated: - CPU interface with RS-232C interface, Type: 5615 - Analog interface, Typ 5225A1 **Integrated: - Analog interface, Type 5225A1</small></p>	System (Master)	110*	Extension (Slave)	010**	System (Master)	110Y48	DC power supply		Extension (Slave)	010Y48	DC power supply		System (Master)	120*	Extension (Slave)	020**	System (Master)	120Y48	DC power supply		Extension (Slave)	020Y48	DC power supply		<p>Ordering Code</p> <p style="text-align: right;">Type 2854A <input style="width: 50px;" type="text"/></p>  <p>19"-Rack Mounting Power supply 10 ... 36 VDC 6 slots/2HE 111</p>  <p>19"-Rack Mounting Power supply 10 ... 36 VDC 4+2 slots/2HE 121</p>  <p>Base Chassis Power supply 10 ... 36 VDC 4 slots/2HE 131 4 slots/2HE with external AC-Adapter 132</p>
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Modules for the Base Units SCP and SCP-Compact

Quantity	Type	Description
_____	5064A1	2-channel charge amplifier without sensor identification
_____	5064A2	2-channel charge amplifier with sensor identification
_____	4665	2-channel piezoresistive amplifier with sensor identification
_____	5247	2-channel needle lift amplifier for hall sensors
_____	5269	2-channel pMax Module
_____	5613A1Q01	2-channel amplifier interface
_____	5227A1Q01	2-channel voltage amplifier
_____	5700A09	Dummy front plate

2854A_000-409e-10.07

Included Accessories

for SCP and SCP-Compact

- SCP instruction manual 002-291
incl. CD-ROM with configuration Software
- Power cable
- Null modem cable wire to connect
SCP and PC/Host
(not included with extension rack)
- Power supply (AC Adapter)
90 ... 260 VAC/50 ... 60 Hz
only for Type 2854A132
- CAN-Bus connecting cable of the
extension unit,
only for Type 2853A010, 2853A020
- Connector for DC power supply,
only for Type 2853A...Y48, 2854A111,
2854A121 and 2854A131

Type/Art. No.

1200A27

5781A1

5.590.239

5.211.384

Optional Accessories

Input adapter for the connection of piezoelectric sensors without sensor identification to amplifiers with sensor identification.

for SCP and SCP-Compact

- Adapter BNC neg. → TRIAX neg. 1704A1
- Adapter KIAG 10-32 neg. → TRIAX neg. 1704A2
- Adapter M4x0,35 neg. → TRIAX neg. 1704A3
- Adapter TRIAX pos. → BNC pos. 1704A4
- Adapter M3x0,35 neg. → TRIAX neg. 1704A5
- PiezoSmart Extension cable
(TRIAX neg. – TRIAX pos.) 1987B...
- CAN-Bus connecting cable of the
extension unit, l = 0,5 m 5.590.239
- Power supply (AC Adapter)
90 ... 260 VAC/50 ... 60 Hz
only for Type 2854A111, 2854A121,
2853A...Y48 5781A1
- Null modem cable wire to connect SCP
and PC/Host (cable length 1 ... 10 m) 1200A27sp
- USB/RS-232C Adapter 2867
- TEDS Editor for PC 2839A-01-003
- TEDS Editor for Pocket PC 2839A-01-013
- D-Sub connector 37 pin pos. 7.640.062

Type/Art. No.