

SCP for Plastics Processing

Modules for Signal Conditioning System

Type 2853A..., 2207A...,
5063A..., 5227A...,
5613A...

The SCP is a modular system for conditioning measuring signals from piezoelectric, piezoresistive and thermocouple sensors. Voltages from external sources can also be measured in addition. The SCP consist of a base unit and application specific module.

- Maximum flexibility for applications in plastic processing
- Fully supported by DataFlow Software

Description

The SCP modules are modules for the SCP base unit Type 2853A... and signal conditioner Type 2859A... . These are described in detail in the data sheets of the corresponding Types. The SCP base unit is a stationary system which can be equipped with up to 8 modules. Up to 32 input channels are available. The signal conditioner Type 2859A... is the mobile version of this system. 4 piezoelectric pressure inputs and 4 temperature inputs are integrated in this system as standard. A vacant module slot allows the system to be expanded as required by up to 12 input channels.

The following modules are available for plastics processing:

- 4-channel thermocouple amplifier Type 2207A
- 4-channel charge amplifier Type 5063A1 for the connection of 4 piezoelectric sensors
- 4-channel voltage amplifier Type 5227A1 for the connection of 4 external «voltage sources» ± 10 V
- 4-channel amplifier interface Type 5613A1/A2 for the supply, remote control and signal transmission from 4 external amplifiers or transmitters. The module provides an excitation voltage of 24 V and ± 15 V respectively for the external amplifiers

Application

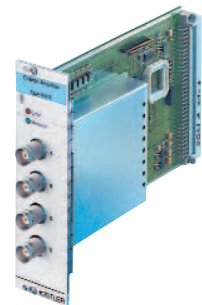
When used with the DataFlow software Type 2805A-02-x, the SCP Type 2853A... and the signal conditioner Type 2859A... is suitable for process visualization, process monitoring and process documentation for all variations of the injection molding process and other cyclical processing methods. For further information on DataFlow, see corresponding data sheet.



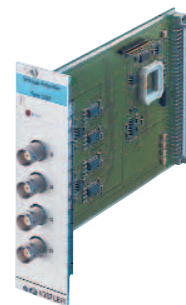
SCP «Plastics Processing» in typical configurations



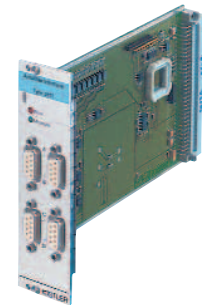
Type 2207A



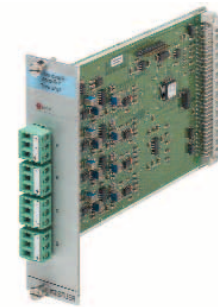
Type 5063A1



Type 5227A1



Type 5613A1/A2



Technical Data Valid for all Modules

Operating temperature range	°C	0 ... 60
Min./Max. temperature	°C	-10/60
Vibration resistance (20 ... 2000 Hz, duration 16 min, cycle 2 min)	gp	10
Shock resistance (1 ms)	g	200
Sound resistance	dBa	120
Front panel dimensions	mm	128,7 x 35,0
HE	-	3
TE	-	7

The module outputs are available on the interface card Type 5225A1. This interface card is described in data sheet of Type 2853A... .

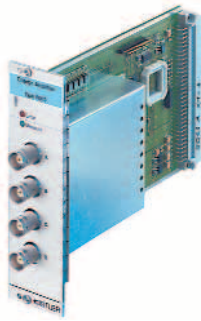
4-Channel Thermocouple Amplifier Type 2207A

Temperature amplifier for the connection of up to 4 thermocouples or temperature sensors Types K and J. The amplifier is equipped with differential amplifier and cold spot compensation.

Technical Data

Channels		4
Thermocouple	Type	J or K
Measuring range I	°C	0 ... 400
Measuring range II	°C	0 ... 200
Error measuring range I	%	<0,5
Error measuring range II	%	<0,2
Zero point error	mV	<10 mV
Frequency range (-3dB)	kHz	0 ... >1
Probe interrupt detection (neg. saturation)	V	-9 ... -10,5
Output voltage	V	0 ... 10
Output current	mA	0 ... 2
Output resistance	Ω	10
Output interference signal (0,1 ... 1 MHz)	mV _{pp}	<10
Thermocouple connection	Type	Phoenix screw terminals
Weight	kg	≈0,28

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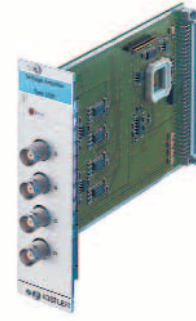


4-Channel Charge Amplifier Type 5063A1

The charge amplifier for piezoelectric sensors is equipped with differential inputs and a common ground. All amplifiers have a common Operate.

Technical Data

Channels		4
Measuring range I	pC	±5'000 ±50'000
Measuring range I on delivery calibrated to	pC	±20'000
Measuring range I/II ratio		4
Error	%	<±1
Drift (0 ... 50 °C)	pC/s	<±0,2
(25 °C)	pC/s	<±0,05
Frequency range (20 V _{pp})	kHz	0 ... >25
Reset/Operate transition	pC	<±2
Signal polarity	negative input charge results in pos. output voltage	
Max. voltage between sensor GND and output/supply voltage	V	<±50
Suppression of the interference signals between sensor GND and output/supply GND	dB	>70
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output resistance	Ω	10
Output interference signal (0,1 Hz ... 10 MHz)	mV _{pp}	<10
Sensor connections	Type	BNC neg.
Weight	kg	≈0,26



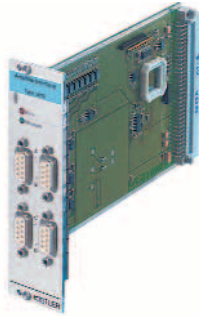
4-Channel Voltage Amplifier Type 5227A1

Voltage amplifier for the connection of up to 4 «voltage sources» with ±10V. The settings required are made using the software.

Technical Data

Channels		4
Measuring range	V	±10
Selectabel gain		1 / 2 / 5 / 10
Error	%	<±0,5
Zero point error	mV	<±10
with gain 10	mV	<±20
Frequency range (20 V _{pp}) -3dB	kHz	0 ... >50
-5%	kHz	0 ... >30
Max. voltage between sensor GND and output/supply voltage	V	<±50
Suppression of the interference signals between sensor GND and output/supply GND	dB	>70
Input resistance	MΩ	>10
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output resistance	Ω	10
Output interference signal (0,1 Hz ... 10 MHz)	mV _{pp}	<10
Sensor connections	Type	BNC neg.
Weight	kg	≈0,21

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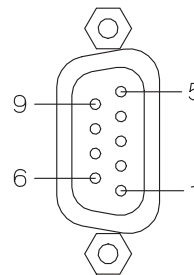
4-Channel Amplifier Interface Type 5613A1/A2

Amplifier interface for connection of up to 4 external amplifiers or transmitters. The module provides an excitation voltage for the external amplifiers of 24 V (5613A1) or ± 15 V (5613A2) respectively as well as Operate and Range signals (for all channels active simultaneously).

Technical Data

	Type 5613A1	Type 5613A2
Channels		4
Measuring range	V	± 10
Gain		1
Error	%	$< \pm 0,1$
Zero point error	mV	$< \pm 2$
Frequency range (20V _{pp})	kHz	0 ... >50
Input resistance	k Ω	>300
Output voltage	V	0 ... ± 10
Output current	mA	0 ... ± 2
Output resistance	Ω	10
Output interference signal (0,1 Hz ... 10 MHz)	mV _{pp}	<10
Power supply for external amplifier (electrically isolated)		
Voltage	VDC	24 ± 15
Current consumption per channel	mA	<45 $< \pm 30$
Sensor connections	Type	Sub D 9 female
Weight	kg	$\approx 0,16$

Pin Allocation Sub D 9-pole



Pin Allocation:

1	(-15 V)
2	+24 V (+15 V)
3	+RANGE II
4	+OPERATE
5	Signal Input
6	Power GND
7	-RANGE II
8	-OPERATE
9	Signal GND

Pin allocation Type 5613A... Operate, Range and excitation voltage for external Amplifier.

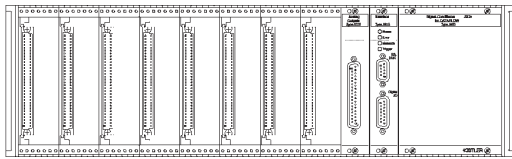
Ordering Code
Signal Conditioning Platform Type 2853A...

When ordering, please use the form below. Place a cross next to the chassis Type (Chassis Rack or Desktop) as well as the modules required and their positions in the module slots (see data sheet SCP chassis).

- Chassis Rack (19") Type 2853A11
- Desktop Type 2853A12

Interfaces (these SCP modules must be included in the order)

- 5615 CPU interface
- 5225A1 Analog interface



Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Type	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2207A	4-channel temperature amplifier
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5063A1	4-channel charge amplifier
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5227A1	4-channel voltage amplifier
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5613A1	4-channel amplifier interface
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5613A2	4-channel amplifier interface
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5700A09	Dummy plate
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		open

Order form: Please place a cross against the allocation of each slot

Accessories Included	Type/Art. No.
• Software on CD	7.643.014
• CPU interface card	5615
• Analog interface card	5225A1

Optional Accessories **Type / Art. No.**

- DataFlow software for process visualization process monitoring and process documentation for Windows 95c, Windows 98SE, NT, 2000, XP with license code on parallel port. 2805A-02-1
- DataFlow software for process visualization process monitoring and process documentation for Windows 95c, Windows 98SE, NT, 2000, XP with license code on USB port. 2805A-02-2
- A/D card 16-channel PC card 12 bit resolution 2855B1
- A/D card 16-channel PC card 16 bit resolution 2855A5
- A/D card 16-channel PCI card 16 bit resolution 2855A4
- A/D card 64-channel PCI card 16 bit resolution 2855A6
- A/D card 16-channel ISA card 12 bit resolution 2855A3
- A/D card 32-channel ISA card 12 bit resolution 2855A2
- Connecting cable from A/D card Type 2855B1 to SCP chassis 1200B21
- Connecting cable from A/D card Type 2855A5 to SCP chassis 1200B21
- Connecting cable from A/D card Type 2855A4 to SCP chassis 1200A13
- Connecting cable from A/D card Type 2855A6 to SCP chassis 1200A41
- Connecting cable from A/D card Type 2855A3 to SCP chassis 1200A13
- Connecting cable from A/D card Type 2855A2 to SCP chassis 1200A41
- Communication cable, serial 5 m 1200A27
- Grounding cable 5.590.175
- Connecting cable from charge amplifier Type 5039A... to amplifier interface Type 5613A1 1200A5
- Connecting cable from hydraulic pressure transmitter Type 4095A... (4 ... 20 mA) to amplifier interface Type 5613A1 1200A39
- Connecting cable from SmartAmp Type 5049A... to amplifier interface Type 5613A1 1200A9

000-408e-02.03 (DB19,001e)

- Connecting cable from charge amplifier Type 5011 to amplifier interface Type 5613A1 1200A7
- Connecting cable from hydraulic pressure transmitter Type 4095A... (0 ... 10 V) to amplifier interface Type 5613A1 1200A11
- Connecting cable from piezoresistive amplifier Type 4618A0 and 4618A2 to amplifier interface Type 5613A1 1200A29
- Connecting cable from temperature amplifier Type 2809A1 for connection to Interface Type 5613A1 1200A25
- Connecting cable from extrusion sensor Type 4096/97 (0 ... 10 V) to amplifier interface Type 5613A1 1200A33
- Connecting cable from digital amplifier Type 4620A1 to amplifier interface Type 5613A1 1200A35
- Connecting cable from extrusion sensor Type 4096/97 (4 ... 20 mA) to amplifier interface Type 5613A1 1200A37
- Connecting cable to interface card Type 5615 for digital inputs and outputs 1200A15
- Inductive proximity switch for Operate signal; connection to interface card Type 5615 2231

Typical configurations with DataFlow software for process visualization, process monitoring and process documentation. These components must be ordered in addition for the SCP chassis and for the SCP modules.

Version I: Connection to Laptop (16 Channels) Type

- DataFlow software for process visualization, process monitoring and process documentation with license code on USB port 2805A-02-2
- A/D card 16-channel PC card 12 bit resolution 2855B1
- Communication cable, serial 5 m 1200A27
- Connecting cable from A/D card Type 2855B1 to SCP chassis 1200B21
- Inductive proximity switch for Operate and Trigger signals; connection to interface card Type 5615 2231

Version II: Connection to Standard PC (16 Channels)

- DataFlow software for process visualization, process monitoring and process documentation with license code on parallel port 2805A-02-1
- A/D card 16-channel PCI card 16 bit resolution 2855A4
- Connecting cable from A/D card Type 2855B1 to SCP chassis 1200A13
- Communication cable, serial 5 m Inductive proximity switch for Operate signal; connection to interface card Type 5615 1200A27 2231

000-408e-02.03 (DB19.001e)