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Quality Monitoring Platform

Type 2865A...

Signal Conditioning System SCP-Compact with DataFlow

The Quality Monitoring Platform features modules for the conditioning of a wide range of different measuring signals, such as signals from piezoelectric and piezoresistive pressure sensors or machine signals. They are specifically well suited for pressure and temperature measurement in injection molds.

• Highly versatile for use in plastics processing
• Fully functional with DataFlow and DataFlow Statistics
• Portable
• Can be permanently installed

Description

The Quality Monitoring Platform largely consists of a base unit, function-specific measuring modules, Software, A/D card and necessary cables. For measured value monitoring, a wide range of different and interchangeable measuring modules for front-end signal conditioning is available.

The case of the SCP-Compact is designed so that it can fit under a laptop or be installed in a test van. Its low weight makes transport easy and it can be carried as hand luggage. Connected cables are protected against damage by the rugged case extensions and can be protected from accidental disconnection.

Easy to operate, efficient tools for quality monitoring and documentation are available along with the DataFlow and DataFlow Statistics software.

Application

The signal conditioning system has four main areas of use:

• Display and documentation of the starting process in new injection molds for reproducibility, documentation and saving time
• Monitoring the production process and exclusion of non-conforming parts
• Analysis of production for continuous improvement
• Documentation of the production process for costumer witnessing
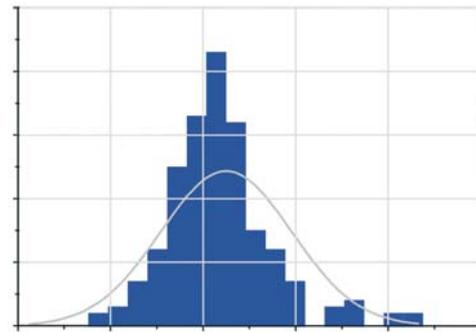
Signal Conditioning System SCP-Compact with DataFlow Type 2805A…

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Measuring Modules for SCP-Compact

The following function specific measuring modules are available:
- 4-channel thermocouple amplifier Type 2207A
- 4-channel charge amplifier Type 5063A1
- 4-channel voltage amplifier Type 5227A1
- 4-channel amplifier interface Type 5613A1/A2

Available Measuring Modules

Type 2207A	Type 5063A1	Type 5227A1	Type 5613A1	Type 5613A2

SCP-Compact Base Unit 2854A131... with 4 slots

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Technical Data, SCP-Compact Base Unit Type 2854A131...

Chassis

Module cards	max.		4
Voltage	VDC	+5, +5 RS, +15,	
(electrically isolated)		+15 SA, +24	
Power consumption max.	W		53
Channels per rack	max.		16
Power supply			
Standard	VDC	10 ... 36 ±10 %	
With external power supply	VAC	100 ... 240 ±10 %	
Power consumption max.	VA		95
Degree of protection	IP		40
Operating temperature	°C		0 ... 50
	°F		32 ... 122
Dimensions Type 2854A131			
Height	mm		107,6
Width	mm		302,4
Depth	mm		min. 400
Weight (without modules)	kg		≈3,5

Analog interface card (integrated)

Analog outputs			16
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 female	

CPU interface card (integrated)

Interface	Type		RS-232C
Trigger/Operate input	–	Trigger connected via	
(optocouplers)		optocouplers to	
		Trigger output	
		(Analog Interface card)	
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 female
Digital outputs	–		isolated solid
DOUTA1 ... B4			state relay
Current load (continuous)	mA		<100
Voltage (continuous)	V		<±42
Voltage for external devices	V		24
Current consumption max.	mA		50
Connection	Type		D-Sub 15 pin female

Dimensions

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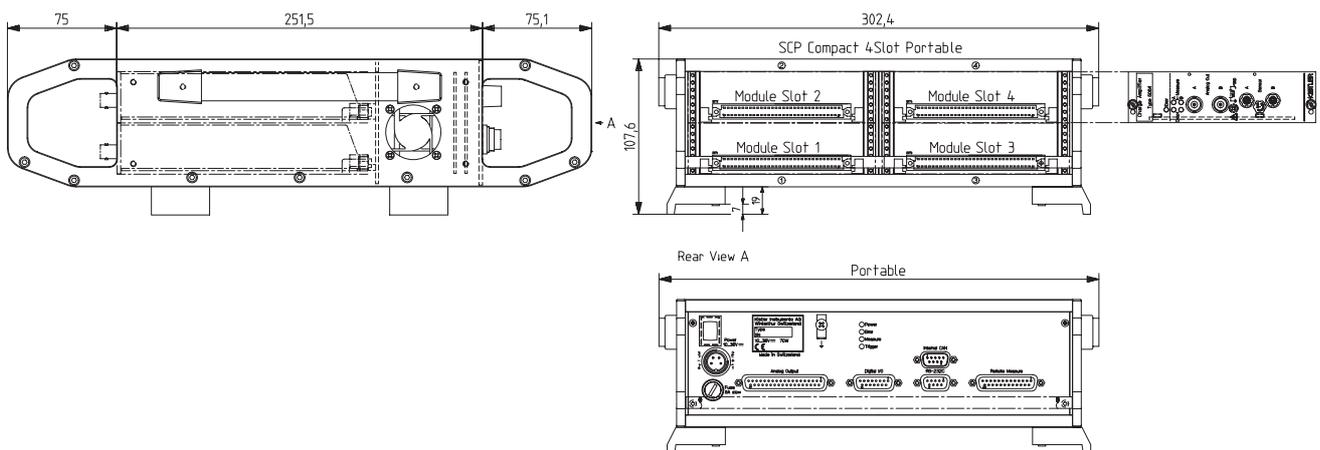
4-Channel Thermocouple Amplifier Type 2207A

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 impedance	Ω	10
Output noise (0,1 ... 1 MHz)	mV$_{PP}$	<10
Thermocouple connection	Type	Phönix screw terminals
Weight	kg	≈0,28

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
Common mode noise rejection	dB	>70
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Output noise (0,1 Hz ... 10 MHz)	mV$_{PP}$	<10
Sensor connections	Type	BNC neg.
Weight	kg	≈0,26

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4-Channel Voltage Amplifier Type 5227A1

Voltage amplifier for the connection of up to 4 "voltage sources" with ±10 V. The operation of the amplifier is software controlled.

Technical Data

Channels		4
Measuring range	V	±10
Selectable gain		1/2/5/10
Error	%	<±0,5
Zero point error	mV	<±10
with gain 10	mV	<±20
Frequency range (20 Vpp) -3dB	kHz	0 ... >50
-5%	kHz	0 ... >30
Max. voltage between sensor		
GND and output/	V	<±50
supply voltage		

Common mode rejection	dB	>70
between sensor GND and		
output/supply GND		
Input impedance	MΩ	>10
Output voltage	V	0 ... ±10
Output current	mA	0 ... ±2
Output impedance	Ω	10
Output noise	mV_{pp}	<10
(0,1 Hz ... 10 MHz)		
Sensor connections	Type	BNC neg.
Weight	kg	≈0,21

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 (Type 5613A1) or ±15 V (Type 5613A2) respectively as well as Operate and Range signals (for all channels active simultaneously).

Technical Data

Channels			4
Measuring range	V		±10
Gain			1
Error	%		<±0,1
Zero point error	mV		<±2
Frequency range (20V_{pp})	kHz		0 ... >50
Input impedance	kΩ		>300
Output voltage	V		0 ... ±10
Output current	mA		0 ... ±2
Output impedance	Ω		10
Output noise	mV_{pp}		<10
(0,1 Hz ... 10 MHz)			
Power supply for external		**Type 5613A1**	**Type 5613A2**
amplifier (electrically isolated)			
Voltage	VDC	24	±15
Current consumption	mA	<45	<±30
per channel			
Sensor connections	Type	D-Sub 9 pin female	
Weight	kg		≈0,16

Pin Allocation D-Sub 9 pin female

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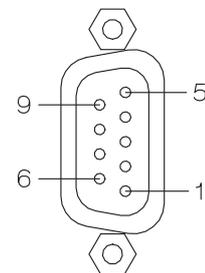
Pin allocation Type 5613A… Operate, Range and excitation voltage for external Amplifier.

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Cables for plug-in cards

Connecting cable for Type 5039A… to Type 5613A1
Connecting cable Type 1200A5:

1 channel of Type 5613A1 is used.

5039A…
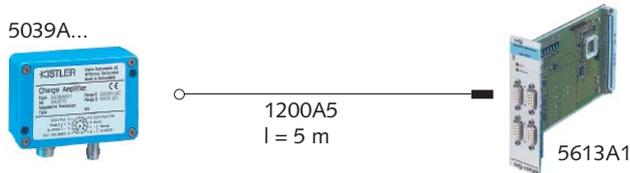
1200A5
l = 5 m

5613A1

Connecting cable for Type K-Line RAG50A... (4 … 20V) to Type 5613A1
Connecting cable Type 1200A39:

1 channel of Type 5613A1 is used.

K-Line RAG50A … BC1B (4 … 20 mA)

1200A39
l = 5 m
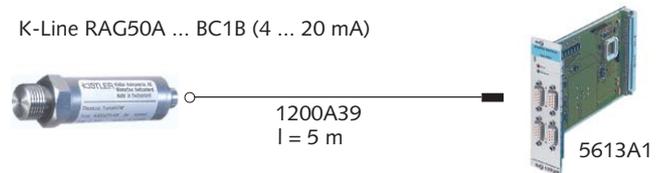
5613A1

Connecting cable for SmartAmp Type 5049A… to Type 5613A1
Connecting cable Type 1200A9:

One cable end is used for connection to Type 5613A1. The second cable end is connected to the injection molding machine (SL, Fix, …)

5049A…

Digital I/O
l = 5 m
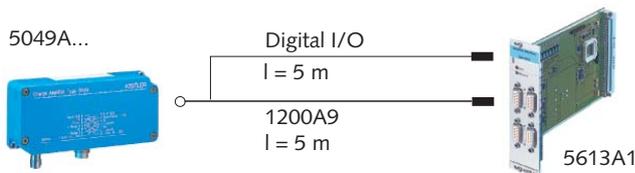
1200A9
l = 5 m

5613A1

Connecting cable for Type 5011… to Type 5613A1
Connecting cable Type 1200A7:

1 channel of Type 5613A1 is used.

5011…
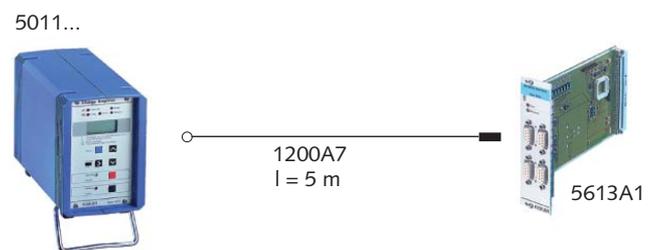
1200A7
l = 5 m

5613A1

Connecting cable for Type K-Line RAG50A... (0 … 10V) to Type 5613A1
Connecting cable Type 1200A11:

1 channel of Type 5613A1 is used.

K-Line RAG50A … BV1B (0 … 10 V)

1200A11
l = 5 m
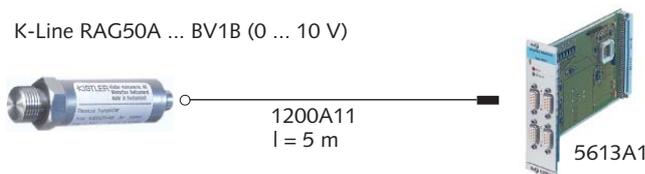
5613A1

Connecting cable for Type 4618A… to Type 5613A1
Connecting cable Type 1200A29:

Types 4618A0 and 4618A2: 2 channels are used by Type 5613A1.

4618A…

1200A29
l = 5 m

5613A1

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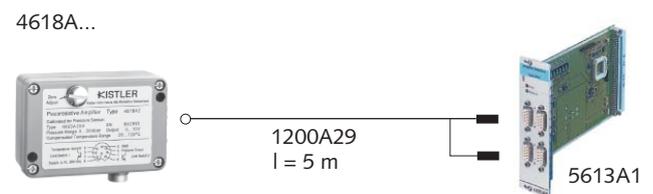
Connecting cable for Type 2209A1… to Type 5613A1
Connecting cable Type 1200A25:

1 channel of Type 5613A1 is used.

2209A1

1200A25
l = 5 m

5613A1

Connecting cable for Types 4096A… and 4097A… (0 … 10 V)
Connecting cable Type 1200A33:

1 channel of Type 5613A1 is used.

4096/97 (0 … 10 V)

only pressure
1200A33
l = 5 m
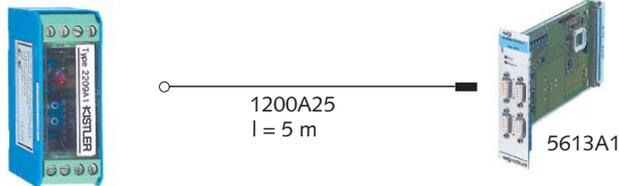
5613A1

Connecting cable for Type 4620A… to Type 5613A1
Connecting cable Type 1200A35:

4620A1
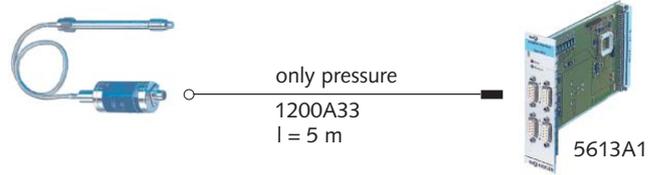
1200A35
l = 5 m

5613A1

Connecting cable for Types 4096A… and 4097A…(4 … 20 V)
Connecting cable Type 1200A37:

1 channel of Type 5613A1 is used.

4096/97 (4 … 20 mA)

only pressure
1200A37
l = 5 m

5613A1

Connecting cable for Types 4086A… and 4087A… to Type 5613A1
The extrusion sensors Types 4086A… and 4087A… cannot be connected to the amplifier interface Type 5613A1. Alternative: Type 4096/97 or intermediate amplifier (e.g. Type 4626A…).

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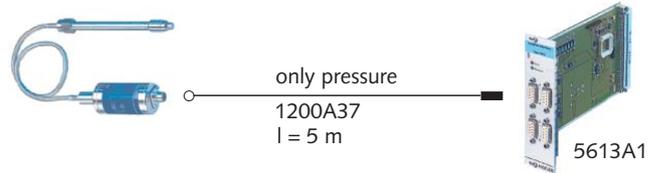
Order form with Ordering Code

An order can be accepted only on this form. Please place a check mark next to the measuring modules required and their positions in the rack slots.

SCP-Compact without Measuring Modules

Ordering Code

Slot 2	Slot 4
Slot 1	Slot 3

Type 2865A ☐

Laptop Execution without case	**10**
Desktop Execution	**12**
Laptop Execution with case	**15**

Type 2865A10	Type 2865A12	Type 2865A15	Type	
☒	☒	☒	2854A131	Base unit SCP-Compact
☒	☐	☒	2855A5	A/D cart 16 bit/16 channel for Laptop
☐	☒	☐	2855A4	A/D cart 16 bit/16 channel for Desktop
☒	☐	☒	1200B43	Cable for analog signals, 0,5 m
☒	☐	☒	1200A89	Cable for RS-232 C, 0,7 m
☒	☐	☒	2867	USB/RS-232 C adapter
☒	☐	☒	1489	Polarity reversing adapter
☐	☒	☐	1200A13	Cable, 5 m
☐	☒	☐	1200A27	Cable for RS-232 C, 5 m
☐	☐	☒	5.070.127	Case
☒	☒	☒	2231	Proximity switch, 5 m
☒	☒	☒	7.643.016	DataFlow Software 2805A...
☒	☒	☒	7.511.310	USB Hap Key
☒	☒	☒	5.510.347	Power supply
☒	☒	☒	1503	Country-specific power cable Z16687

Measuring Modules for Base Unit SCP-Compact

Measuring modules order as separate position

Slot 1	Slot 2	Slot 3	Slot 4	Type	
☐	☐	☐	☐	2207A	4-channel thermocouple amplifier
☐	☐	☐	☐	5063A1	4-channel charge amplifier
☐	☐	☐	☐	5227A1	4-channel voltage amplifier
☐	☐	☐	☐	5613A1	4-channel amplifier interface
☐	☐	☐	☐	5613A2	4-channel amplifier interface
☐	☐	☐	☐	5700A09	Dummy front plate

Please place a check on the allocation for each slot. ✍

Optional Accessories — Type/Art.No.

- Connecting cable: charge amplifier Type 5039A… to amplifier interface Type 5613A1 — 1200A5
- Connecting cable: hydraulic pressure transmitter K-Line RAG50-A … BC1B (4 … 20 mA) to amplifier interface Type 5613A1 — 1200A39
- Connecting cable: hydraulic pressure transmitter K-Line RAG50-A … BV1B (0 … 10 V) to amplifier interface Type 5613A1 — 1200A11
- Connecting cable: SmartAmp Type 5049A… to amplifier interface Type 5613A1 — 1200A9
- Connecting cable: charge amplifier Type 5011 to amplifier interface Type 5613A1 — 1200A7
- Connecting cable: piezoresistive amplifier Types 4618A0 and 4618A2 to amplifier interface Type 5613A1 — 1200A29
- Connecting cable: temperature sensor Type 2209A1 to the connection to interface Type 5613A1 — 1200A25
- Connecting cable: extrusion sensor Type 4096/97 (0 … 10 V) to amplifier interface Type 5613A1 — 1200A33
- Connecting cable: extrusion sensor Type 4096/97 (4 … 20 mA) to amplifier Interface Type 5613A1 — 1200A37
- Connecting cable: digital amplifier Type 4620A1 to amplifier interface Type 5613A1 — 1200A35

- Connecting cable to interface card Type 5615 for digital inputs and outputs — 1200A15
- Grounding cable L for ground Loop surpression — 5.590.175

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