KISTLER
measure. analyze. innovate.

Charge Amplifier

for Modulas

Type 5151A...

32-channel special charge amplifier for WIM sensors (weigh-in-motion).

- No settings required to be made by the customer (plug and play)
- Designed for applications in the laboratory and in the field (electronic control cabinet)

Short Description

The 32-channel charge amplifier was developed for Modulas, for the signal conditioning of WIM sensors. The supply voltage and the 'Operate' signal are electrically isolated from the measuring signal. As a result of a time constant configuration of all channels, the charge amplifier can be operated in 'continuous operate' mode. The sensors can be quickly and reliably connected with a simple cut-and-grip technique.

The customer is not required to make any adjustments to the charge amplifier. The signal cable can be connected to this charge amplifier with the 41-pin MIL connector.

Screening of the charge cable installed must be ensured at the PC screw connection for the charge amplifier.

The instrument has CE-conformity within the meaning of EU Directives 89/336/EEC and complies with the EMC standards: EN 50081-1 and EN 50081-2 Interference Emissions as well as EN 50082-1 (EN 61000-6-2) Interference Immunity.

The charge amplifier is fitted with grounding terminals.

Application

The charge amplifier Type 5151A... is used in conjunction with the Kistler Modulas sensor for the dynamic measurement of force and pressure distribution between tires and road surfaces.

Technical Data

Charge Amplifier

Measuring range CH1 ... CH32		
Type 5151Axx2	pC	±4000
Type 5151Axx1	pC	±2500
Error	%	<3
Output voltage CH1 ... CH32 and summation signal	V	–5 ... +5
Output voltage limitation during no-load operation	V	>±7
Output current per channel	mA	–2 ... +2
Output resistance	Ω	100
Output offset		
(Reset)	mV	<± 10
(Operate without input signal)	mV	<60
Frequency range (–3 dB)	Hz	<0,002 ... >10'000
Output noise signal (0,1 Hz ... 10 MHz)	mVpp	<30
Crosstalk attenuation up to 1000 Hz	dB	>60
Reset/Operate transient	pC (mV)	<2 (+2)
Time constant τ	s (%)	100 (±20)
Operate input		
(Electrically isolated from power supply and charge amplifier)		
Reset: input open or	V	<0,5
Operate:	V / mA	3 ... 30 / 0,3 ... 3
Operate output voltage (TTL level)		
for Operate	V	≈+4,7
for Reset	V	≈0
Output current	mA	0,7 ... 1,9
Output resistance	kΩ	4

000-309e-11.02 (DB11.5151Ae)

KISTLER
measure. analyze. innovate.

Power supply		
(Electrically isolated from Reset/Operate and charge amplifier)		
Supply voltage	V DC	18 ... 30
Power consumption	W	≈4
Connections		
Power supply and control inputs		Type MIL KPT02E8-4P
Output signal		Type MIL KPT02E20-41S
Charge inputs		Type Circuit board cut-and-grip connection, Phoenix-Contact IDC-0,5-DL
Repeat connections with circuit board cut-and-grip connections		
with the same Type of conductor	max.	50
(A new terminal should be used in each case)		

General Data

Operating temperature range	°C	0 ... 60
Min./Max. temperature	°C	–10 / 70
Dimensions Width x Height x Depth	mm	202x111x232
Weight	kg	≈2,8

Optional Accessories

- Connection cable, analog output — Type 1700A59
- Connecting cable, Reset-Operate and power supply — Type 1700A62

Ordering Key — **Type 5151A** □ □

32 measuring channels	**32**
Measuring range ±2500 pC	**1**
Measuring range ±4000 pC	**2**

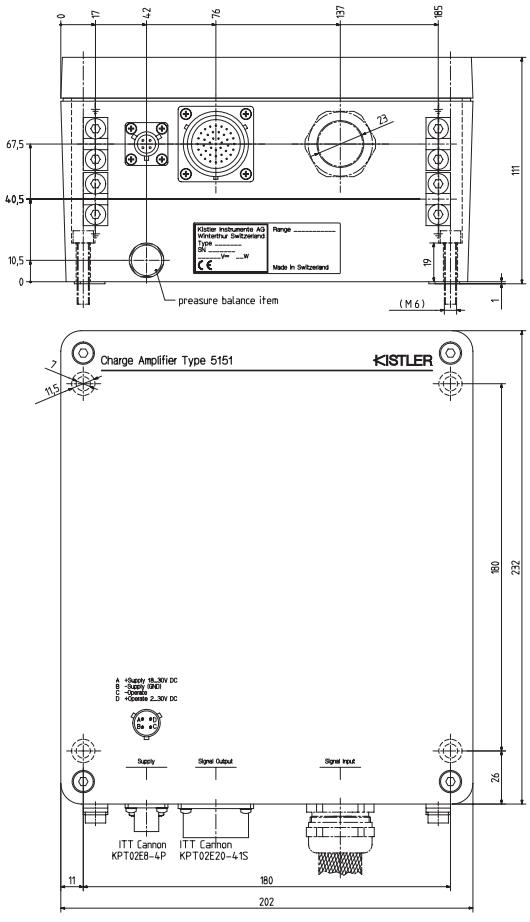

Fig. 1: Charge Amplifier for Modulas Type 5151A

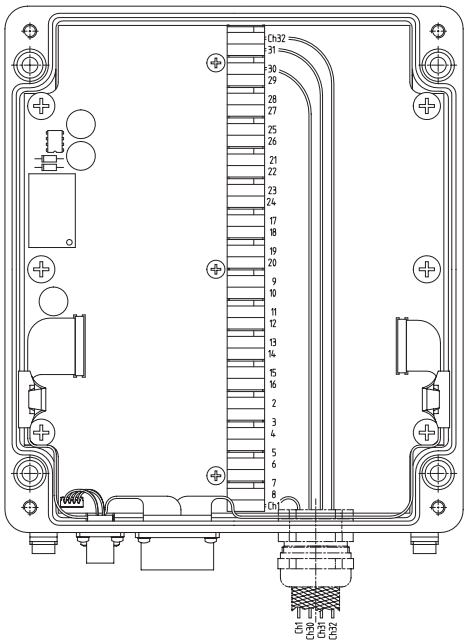

Fig. 2: Connection of sensors to the charge amplifier

000-309e-11.02 (DB11.5151Ae)

KISTLER
measure. analyze. innovate.

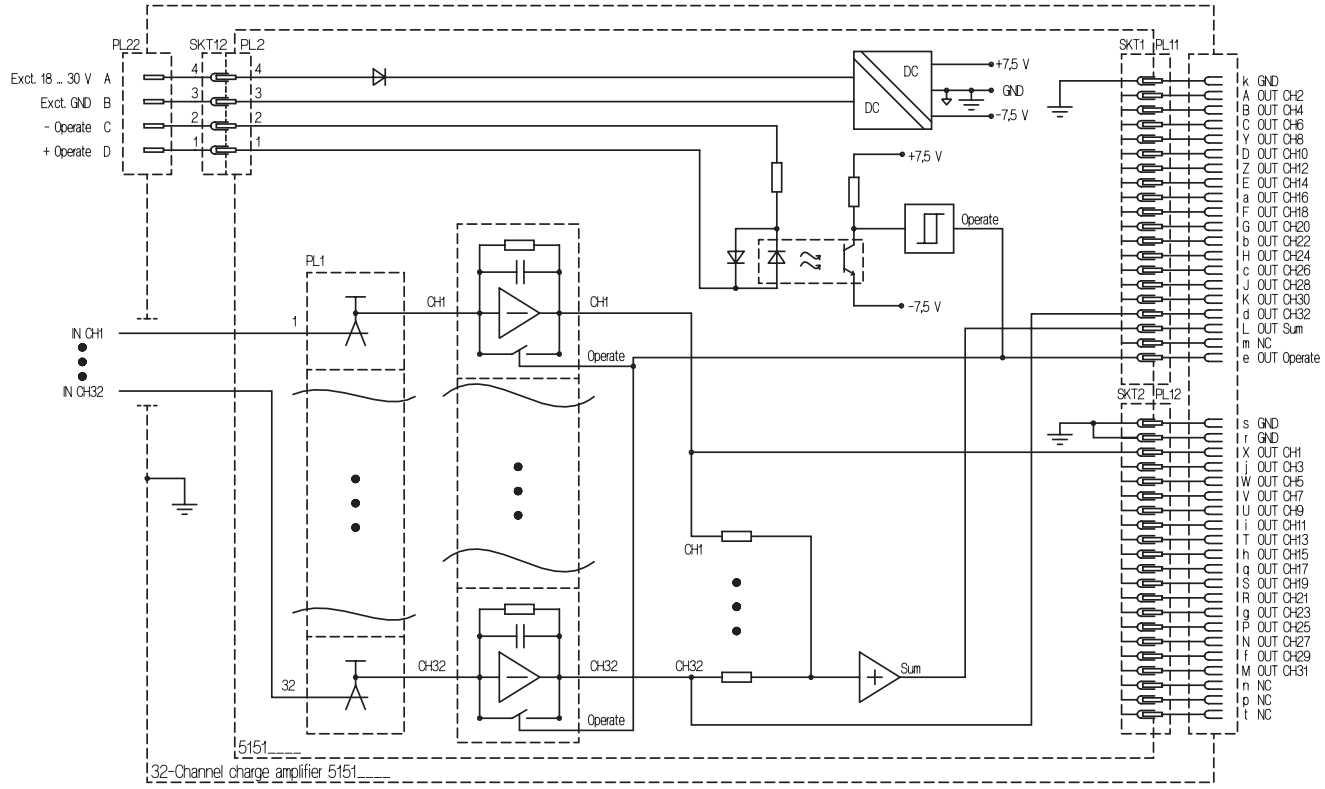

Fig. 3: Block diagram of the charge amplifier

000-309e-11.02 (DB11.5151Ae)