

Type 5050A

PRIAMUS Easy charge amplifier

- Maximum 100'000 pC !
- 8 switchable charge ranges !
- plug-compatible to all PRIAMUS charge amplifiers (→ Plug & Play)
- test function
- signal input for sensors with and without sensitivity detection (PRIASED™-system)
- all control signals can be run with positive or negative logic



Description

Due to a multitude of switchable charge ranges the 'multi range charge amplifier' type 5050A... provides a very high resolution for any thinkable application. Especially because of the unusual high charge range it can be used in many industrial applications. The 25-pin D-Sub connector is plug-compatible to all industrial PRIAMUS charge amplifiers so that other amplifier types of a higher technical order, e.g. with implemented signal analyzing or with several channels, can easily be exchanged by the user ("plug & play").

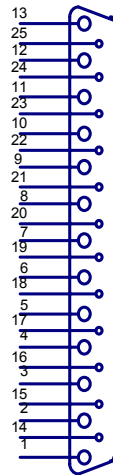
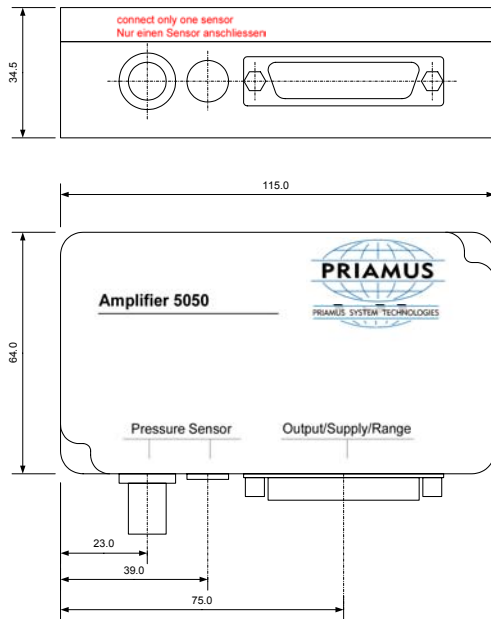
The charge amplifier is identified by downstreamed electronics via a code in the D-Sub connector and can be checked with the help of a test function. The charge ranges are selected by control codes. The control signals 'operate', 'range' and 'test' can be run with positive or negative logic. For applications in the area of injection molding the charge ranges could be reduced respectively limited to 2 by a jumper.

Technical data

Measuring range	nominal number of ranges	pC	$\pm 500 \dots 100'000$ 8
Accuracy		%	$< \pm 1$
Output signal		V	± 10
Output offset		mV	$< \pm 15$
Output noise	0,1 Hz ... 100 kHz, $> 1'000$ pC 0,1 Hz ... 100 kHz, $\leq 1'000$ pC	mVpp mVpp	< 10 < 30
Linearity		% FS	$< 0,02$
Output impedance		Ω	10
Max. output load		mA k Ω	5 2
Reset time	Q = charge at reset time Example: Q = 3'000 pC	ms ms	$< 0,6 \cdot Q/nC + 1$ < 3
Reset operate transition		pC	< 2
Drift (typ. at 20 °C)		pC/s	$< 0,03$
Frequency range	500 pC ... 20'000 pC 50'000 pC ... 100'000 pC	kHz kHz	ca. 0 ... 50 ca. 0 ... 20
Supply		VDC mA	15 ... 30 ca. 30
Operating temperature range		°C	0 ... 60

subject to technical amendments

Dimensions



Pin-Allocation

Pin	Function
1	Signal Out ±10V
2	-
3	-
4	-
5	-
6	Range 2 In
7	Range 1 In
8	Range 0 In
9	Supply GND / Code Supply GND
10	Supply 15 ... 30V
11	Code 2
12	Code 0
13	Code Supply +
14	Signal GND
15	-
16	-
17	-
18	-
19	Com Logic Input
20	Operate
21	80% Test
22	Supply GND
23	Code 3
24	Code 1
25	-

Control signals

Connector for signal input

Operate	reset (input open or operate)	V 0 ... 0,8 V 3 ... 45	Fischer D102A051-60 BNC negativ
80 % Test	no test (input open or test)	V 0 ... 0,8 V 3 ... 45	
Range	0: inactive (input open or) 1: active	V 0 ... 0,8 V 3 ... 45	

Graduation of charge ranges

Standard Type 5050A	Modified Type 5050A-M01	Modified Type 5050A-M02
pC 500 / 1'000 / 2'000 / 5'000 10'000 / 20'000 / 50'000 / 100'000	pC 5'000 / 20'000	pC 10'000 / 20'000

The PRIASED™ - system

PRIASED™ stands for **PRIAMUS SENSITIVITY DETECTION**. This is a patented method to detect the sensitivity of PRIAMUS sensors automatically. Because of product liability reasons the system works without memory chip and is therefore extremely robust and temperature resistant.

The charge amplifier type 5050A... is **not** provided with a sensitivity detection.

However, sensors which are prepared for this purpose can be used without further ado.

In this case the charge ranges must be selected according the respective sensitivities.

For automatic sensitivity detection as well as automatic setting of the ranges ("auto-ranging") the charge amplifier type 5060A... is available.