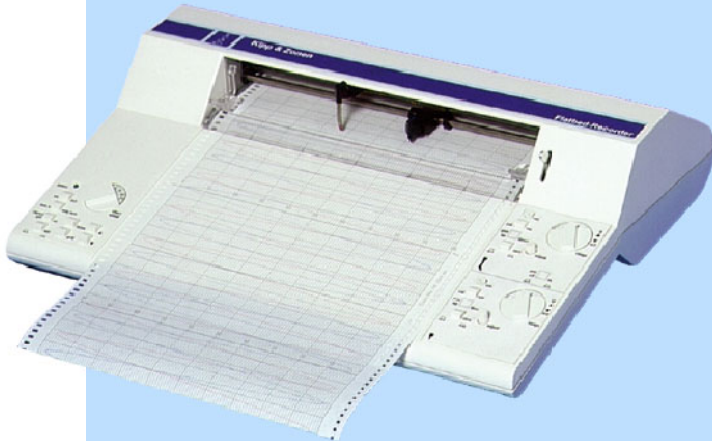


**COMPACT FLATBED RECORDER**


This line of instruments is based on a proven robust and reliable design that is recognised world-wide as being the standard in recording.

All models have differential inputs with constant impedance over all input ranges which allow for accurate measurements from almost any source.

The high sensitivity (up to 400 V full scale) and gilded input contacts allow even very low voltages to be measured accurately.

The high-speed servo system records signals up to 5 Hz and the 6<sup>th</sup> order 14 Hz low pass filter eliminates the 50/60 Hz noise completely.

The newly designed penholder has improved grip and simplifies the exchange of pens.



Attenuator



Temperature Module

**FEATURES**

New electronic design one or two channel recorder with state of the art technology

Differential inputs

User selectable left and right zero-position

RS-232 serial data output for both channels <sup>1)</sup>

Pen Offset Compensation with on/off switch <sup>1)</sup>

Home function and grid function

Electrical pen lift

Remote control

<sup>1)</sup> optional

**FOUR DIFFERENT MODELS:**

<b>BD 11</b>	Single channel flatbed recorder
<b>BD 12</b>	Dual channel flatbed recorder
<b>BD 11E</b>	Single channel flatbed recorder with electrical penlift and remote control
<b>BD 12E</b>	Dual channel flatbed recorder with electrical penlift and remote control

In addition to the standard voltage inputs, the following input modules are also available for monitoring:

**VOLTAGE INPUT ACCESSORIES**
**ORDER CODE**

Attenuator 100x, 500V max.	0328-322
Attenuator 10x, 500V max.	0328-324
Current shunt 0-20 mA	0328-320
Current shunt 4-20 mA	0328-321
Current shunt 0-16 A	3300-001
Temperature module type J	0336-706
Temperature module type K	0336-705
Temperature module type Pt100	0336-704



The new electronic design not only fulfils the CE requirements but also the new cUL mark is applied for world-wide recognition of its safety.

## COMPACT FLATBED RECORDER

### GENERAL SPECIFICATIONS

recording system	potentiometric servo balance system
recording paper	roll chart
pens	disposable fibre tip cartridges
power supply	93.5 - 132 V / 187 - 264 V, 50/60 Hz (voltage selector) max. consumption 30 VA (1 channel), 40 VA (2 channels)
safety	Certified in accordance with cUL 3101-1 and IEC 1010-1
emission	EN 50081-1 (group standard) RFI: EN 55022
immision	EN 50082-1 (group standard) ESD: IEC 1000-4-2 EMF: IEC 1000-4-3 EFT: IEC 1000-4-4

### ENVIRONMENTAL CONDITIONS

ambient temperature range	operating: -10 °C to +40 °C, storage: -40 °C to +75 °C
relative humidity	operating: 20 % - 85 % non condensing, storage 5 % - 95 %
housing material	Bay Blend no FR 110-00005; colour: white
flammability rating	according to UL 94 V-0
weight	3.5 kg including roll of chart
dimensions	380 x 290 x 90 mm (W x D x H)

### SERVO SYSTEM

span settings	1-2-5-10-20-50-100-200-500 mV, 1-2-5-10-20 V
pen travel	200 mm
number of pens	1 or 2, factory installed
pen response time	< 0.2 s for 5 % - 95 % fsd (full scale deflection)
span accuracy	< 0.3 % fsd
non linearity	< 0.3 % fsd
dead zone	< 0.2 % fsd
input terminals	2 safety terminals
input impedance	1 M $\Omega$ for DC, 10 k $\Omega$ in series with 1.5 $\mu$ F for AC
input configuration	floating
maximum input voltage	42 VDC / 30 VAC (personal safety limits)
zero adjustment	-50 % to +150 % full scale
zero	selectable left-hand or right-hand side off the paper (default left)
zero drift	< 1 $\mu$ V/ °C



The motors used in the models are from the same brand and similar to the ones used in the Mars Pathfinder.

common mode rejection	130 dB (DC and 50 Hz AC)
variable range setting	40 % - 100 % of selected span
pen lift	mechanical, pen 1 and 2 combined up/down (BD 11 / BD 12) electrical, pen 1 and 2 independent up/down (BD 11E / BD 12E)

### CHART DRIVE SYSTEM

speed setting	0.1-0.2-0.5-1-2-5-10-20 mm/min or mm/sec
step size	0.05 mm
inaccuracy time-base	better than +/- 50 ppm
recording paper	chart roll according to DIN 16230
paper length	25 metres

### STANDARD INCLUDED

manual, power cord, fuses, chart roll,  
one pen per channel

### OPTIONS

POC module for channel 2 with RS-232-C output 1)  
RS-232-C output for channel 1 1)

1) RS-232-C output only in combination with BD 11E / BD 12E

Dust cover  
Safety banana plugs  
Flight case  
Spillage cover  
19" rack mount