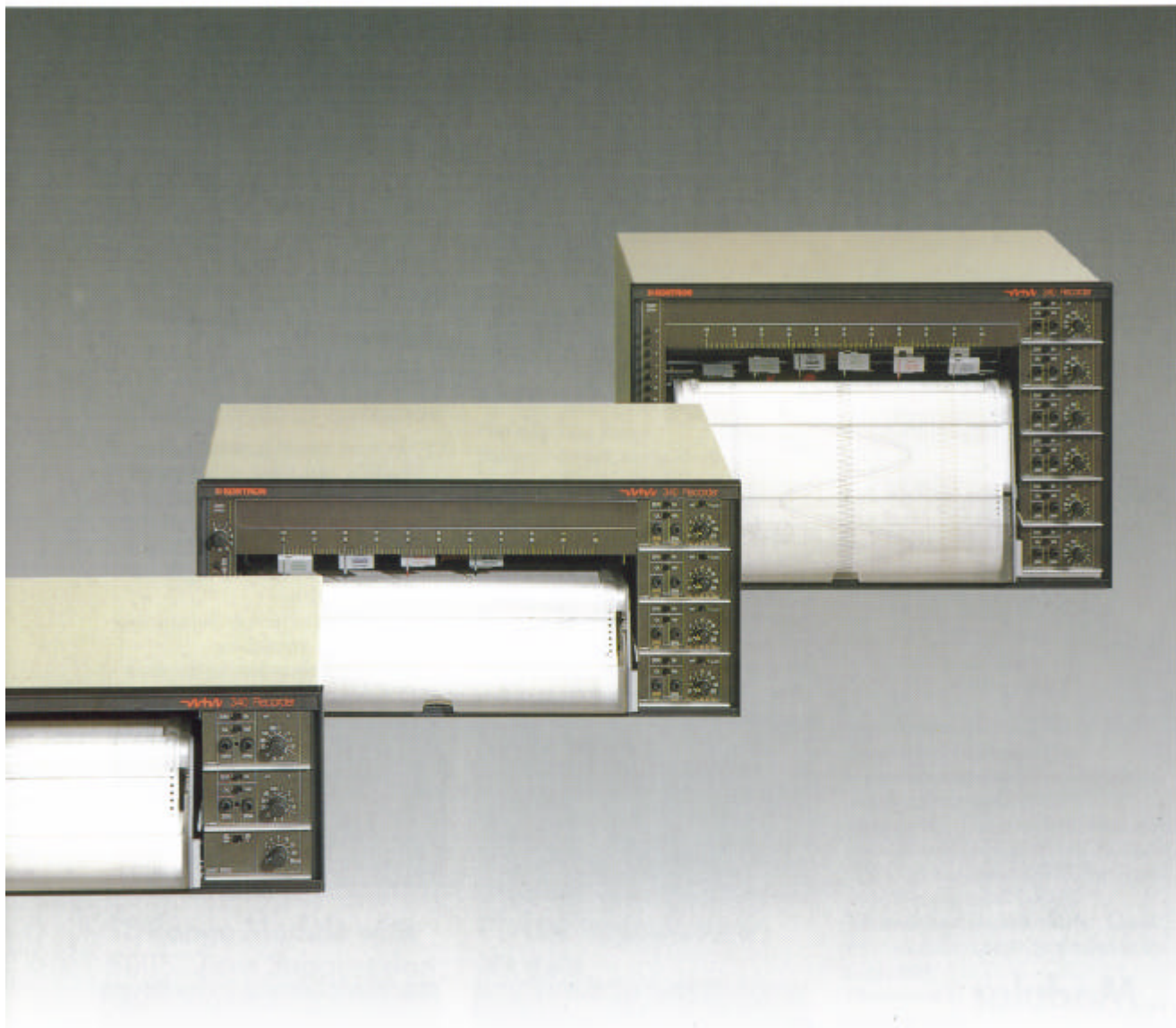


# Multipen Recorder Series W+W340



- 2, 4 and 6 channel versions
- Modular construction
- Wide variety of signal conditioning modules



Analog Digital  
Elektronik GmbH

# W+W340 ...

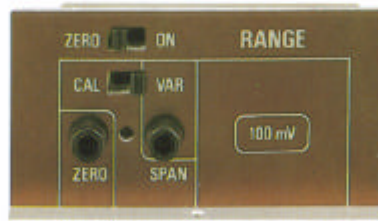


KONTRON ELEKTRONIK has for many years been one of the leading manufacturers of recording systems. The W+W340 series of hard copy recorders offers versatility in the true sense of the word while at the same time retaining the highest order of quality and reliability. An ongoing program of development on currently available and new modules means that the recorders will satisfy a wide range of applications.

## Some features of this versatile recorder series

- Modular construction allows retrospective installation of additional signal conditioning and servo systems
- Single and multi-range amplifiers available for voltage and current measurements
- Wide range of temperature measuring modules available
- Low profile recorders for bench or rack mounting
- Many extras are provided as standard:  
monitor output available on all modules, external chart drive facilities (T.T.L. compatible) and remote paper start/stop

## ... Modular Construction



### Single Range Module

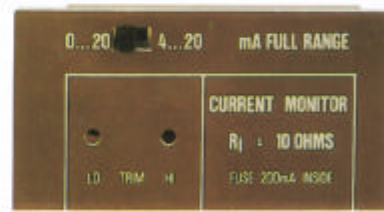
**Voltage range, calibrated:**  
from 10 mV to 20 V

**Voltage range, variable:**  $\pm 5\%$  FS

**Zero control (20 turn):** - 200% FS  
+ 100% FS

**Input impedance:** 1 MOhm

**Monitor output:** 0 to 1 V for 0 to 100%  
of selected range



### Current Module

**Ranges:** 0 to 20 mA and 4 to 20 mA FS  
switch selectable

**Input resistance:** 10 Ohm

**Over current protection:** 200 mA fuse

**Monitor output:** 0 to 1 V for 0 to 100%  
of selected range

## ... Signal Conditioning Modules



### 12 Range Module

**Voltage ranges, calibrated:** 1, 2, 5, 10, 20, 50, 100, 500 mV, 1-2-5-10 V  
**Variable ranges:** Overlapping  
**Zero control:** -200% FS + 100% FS  
**Input impedance:** 1 M $\Omega$ m  
**Monitor output:** 0 to 1 V for 0 to 100% of selected range



### 22 Range Voltage/Current Module

**Pen response control:** 0.25 to 4.5 sec  
**Voltage ranges, calibrated:** 1, 2, 5, 10, 20, 50, 100, 500 mV, 1, 2, 5, 10 V  
**Variable ranges:** Overlapping  
**Current ranges, calibrated:** 1, 2, 5, 10, 20, 50, 100, 500 mA, 1, 2 A  
**Overcurrent protection:** 2 A fuse  
**Zero control:** -200% FS + 100% FS  
**Monitor output:** 0 to 1 V for 0 to 100% of selected range



### Linearized Thermocouple Temperature Modules

**Sensor type:** J, K, S, or T as specified  
**Full scale ranges:**  
 J or K: 50, 100, 200, 500, 1000°C  
 S: 100, 200, 500, 1000, 2000°C  
 T: 20, 50, 100, 200, 500°C  
**Linearity:**  
 J:  $\pm 1.5^\circ\text{C}$  (-100 to +1100°C)  
 K:  $\pm 0.5^\circ\text{C}$  (0 to +1350°C)  
 S:  $\pm 1.5^\circ\text{C}$  (+50 to 1700°C)  
 T:  $\pm 1.5^\circ\text{C}$  (-200 to 400°C)



### 18 Range Module with 500% Zero Suppression

**Voltage ranges, calibrated:** 0.5, 1, 2, 5, 10, 20, 50, 100, 200 mV/V  
**Variable ranges:** Overlapping  
**Zero control (fine):**  $\pm 100\%$  FS  
**Zero suppression (course):** -500/-400/-300/-200/-100/0% FS  
**Input impedance:** 1 M $\Omega$ m  
**Monitor output:** 0 to 1 V for 0 to 100% of selected range



### PT-100 Temperature Module

**Sensor type:** Platinum PT-100 resistance bulb  
**Ranges:** 20, 50, 100, 200, 500, 1000°C  
**Range shift:** -150 to 850°C switch selectable in 10°C fine and 100°C coarse steps  
**Sensor current:** < 1 mA at 0°C  
**Linearizing:** Internally with programmed current source  
**Monitor output # 1:** 1 mV/°C absolute to 1000°C  
**Monitor output # 2:** 0 to 1 V for 0 to 100% of selected range

**Non-Accuracy:**  $\pm 0.2\%$  plus non-accuracy of thermocouple  
**Ice point compensation:** Automatic, switch selectable ON/OFF  
**Range shift:** Range shift is switch selectable for useful range of thermocouple in 100°C coarse steps (200°C for S) and 10°C fine steps (20°C for S)  
**Thermocouple break alarm:** Open thermocouple circuit drives pen to up scale limit  
**Monitor # 1:** 10 mV/°C absolute  
**Monitor # 2:** 0 to 1 V for 0 to 100% of range  
**Calibration provision:** Built in source

# W+W340 ... Specifications

## 2-, 4- and 6-Channel Recorder

### Numbers of channels

Model 342: 2  
Model 344: 4  
Model 346: 6

### Writing system

fibre-tip cartridges

### Writing distance

Model 342: 2 mm between each channel  
Model 344: 2 mm between each channel  
Model 346: 3 mm between each channel

### Writing width

250 mm, + 2% overrange on both sides  
(paper width 290 mm)

### Pen response

< 0.3 seconds full scale

### Overshoot

0.5% adjustable

### Frequency response

1.5 Hz (-3 db)

### Reproducibility

0.15%

### Non-Accuracy

less than 0.3%

### Deadband

0.15%

### Potentiometer linearity

0.1%

### Common mode rejection

140 dB a.c. 160 dB d.c.

### Temperature stability

1.5  $\mu$ V/ $^{\circ}$ C (typical)

### Paper speeds

16 switchable speeds  
1, 2, 4, 8, 10, 20, 40, 60 cm/min.  
1, 2, 4, 8, 10, 20, 40, 60 cm/h.  
 Max. 90 cm/min or 120 cm/min  
optionally  
 50/60 Hz main-synchronized  
 external chart-feed via TTL-pulses  
 Step = 0,066 mm, (150 Steps = 10 mm)

### Operation temperature

0 $^{\circ}$ C to 50 $^{\circ}$ C (or continuous operation:  
- 10 to 50 $^{\circ}$ C)

### Monitor output

0 - 1 V for 0 to 100% of selected range

### Zero

left or right plugable-continuous  
zero-control  
 zero input switch

### Remote control (standard)

(switch-closure or TTL-control)  
 paperfeed ON/OFF  
 paperfeed FORWARD/REVERSE  
 servomotor ON/OFF  
 chart-feed via TTL-pulses (negative  
logic)

### Remote control (option)

(switch-closure or TTL-control)  
 event marker  
 electronic penlift

### Main voltage

115/220 V (+ 20% - 10%), field change-  
able

### Main frequency

50 or 60 Hz

### Dimensions (w x h x d)

Model 342: 438 x 132 x 353 mm  
Model 344: 438 x 179 x 353 mm  
Model 346: 438 x 266 x 353 mm

### Average power consumption

Model 342: 60 VA  
Model 344: 85 VA  
Model 346: 130 VA

## Options

- event marker
- electric pen lift
- roll chart paper axis
- 19" rack mounting
- transparent frontcover
- carrying handle

## Accessories supplied

- 1 power cable
- 1 package z-fold-paper
- 1 manual
- 2 cartridges model 342
- 4 cartridges model 344
- 6 cartridges model 346