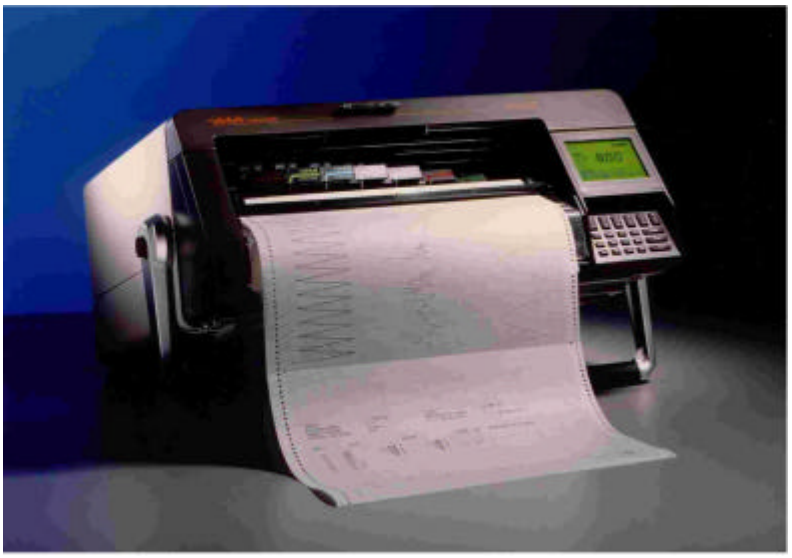

DCR 520

Digital Chart Recorder

- **Recording** with 2, 4, 6 or 8 digital servo systems
- **Menu save function**
- **Input modules** for voltage, current, temperature and true RMS
- **Pen offset compensation**
- **Operation is independent from mains supply**
- **Interval trigger** for two chart speeds
- **Controllable** via RS-232

Equipped with state-of-the-art components the digital recorders of the DCR 520 series apply to a new and high standard. They combine high precision, userfriendly operation and durability.

The analog signals are digitized in the input modules and until the representation they are processed completely digitally on their way to the digital servo system. With this method a high reproducability is achieved. Each measuring channel is galvanic insulated from other channels and from ground.
It is very easy to operate and the large display shows to the user immediately all relevant settings and the current value of an input signal. With the softkeys located below the display, all parameters can be adjusted. Via interface both the menu settings and measured data are transferable.
By pressing a button you get a direct paper print-out of the adjusted menu parameters.
Menu setups can be stored for different applications and/or different user groups.

Via the RS232 interface port of the recorder a PC can be connected and data can be sent bidirectionally. With the WW-PC2 data aquisition software package, running under Windows, stored data can be analyzed. Full remote control via PC is also possible.

Specifications DCR 520

Mainframe

Writing system	fibre pen cartridges
Servo system	digital servos with wear free, optical shaft encoder feedback
Paper	roll- or Z-fold paper
Writing width	250mm
Paper speed	1 cm/h ... 60 cm/min
Frequency	1.5Hz/-0.2dB (sinus and full scale)
Eff. settings time	(10 ... 90% FSD) 0.2s
Deadband	±0.1% FSD
Reproducibility	±0.1% FSD
Overshooting	<0.1% FSD
Ambient temperature	+5 .. +45 'C
Mains supply	110/220V ±20%, 50/60 Hz
DC supply	10V .. 32V (option)
Power consumption	typ. 8 channels 80 VA
Dimensions	width 444mm; height 222mm; depth 430mm
Weight	up to 18 kg

Measuring modules

DC measuring modules

Four modules with one fixed hardware measuring range and a software zoom are available:

DC-1	±1 V
DC-2	±15 V
DC-3	±250 V
DC-4	±50 mA
Input-offset voltage	±0.03% FSR
Accuracy	±0.1% of measured value
Resolution	>14 Bit FSR
Gain drift	± 50ppm/K of measured value
Offset drift	0.0015%/K FSR max.
Input impedance	>6 MOhm (1V module) 1 MOhm (15 and 250V module) 20 Ohm (50 mA module)
Max. common mode voltage	250Veff.

TC thermo couple module

The TC module with its internal ice point compensation is designed for six different thermo couples.

Fe/Const	type J-DIN	-150 ... 900 °C
Fe/Const	type J-IEC	-150 ... 780 °C
Cu/Const	type T-DIN	-150 ... 600 °C
Cu/Const	type T-IEC	-150 ... 400 °C
NiCr/Ni	type K	-150 ... 1370 °C
Pt-10%Rh/Pt	type S	0 ... 1760 °C

Input offset voltage	±5µV or ±0.03% FSR
Accuracy	±0.3 ... 1.3°C for type J ±0.4 ... 1.8°C for type K +2.5 ... 3.8°C for type S ±0.5 ... 1.1°C for type T
Ice point compensation	5 ... 45°C (on / off)
IPC accuracy	1°C for type J, K and T 1.5°C for type S
Max. common mode voltage	±42V

Pt 100-measuring module

Measuring current	<1mA
Hardware measuring rate	-180 ... +230°C -180 ... +850°C
Resolution	0.018°C / 0.045°C
Accuracy	0.18°C / 0.4°C
Drift	0.04°C/K max.
Connecting method	2-, 3-, 4-wire technique
Max. line resistance	10 Ohm

DMM-measuring module

The digital multi-meter-module is designed for voltage and current measurements (DC and AC) and as peculiarity for the measurement of True RMS.

AC mode (TRMS) AC-coupling:

Input offset voltage	+0.1% FSR
Accuracy (gain)	±1% of measured value
Resolution	>13 bit FSR
Crest factor	5 for 1% additional error
Frequency range	10 Hz ... 50 kHz typ.(-3dB)
Hardware range	0.4; 1.6; 6.4; 25.6; 102.4; 409.6 V
Input impedance	2 Mohm

DC mode / voltage:

Input-offset-voltage	±10µV or ±0.04% FSR
Accuracy	±0.15% of measured value
Resolution	>14 bit FSR
Input impedance	1 MOhm
Hardware measuring range	±0.2V, ±0.8V, ±3.2V, ±12.8V, 51.2V, ±204.8V

DC mode / current:

Internal shunt resistor	0.1 Ohm
Max. current	2A (DC), 4A (AC)
Max. common mode voltage	250Veff.

DVM-measuring module

Designed with different hardware ranges for users with high precision needs

Input offset voltage	±10µV or ±0.04% FSR
Accuracy	±0.15% of measured value
Resolution	>14 Bit FSR
Input impedance	1MOhm
Hardware measuring range	±4mV;±16mV;±256mV; ±1.000V; ±4.000V; ±16.000V; ±65.000V; ±262.000V
Max. common mode	250Veff.

DVM/TC-measuring module

The combined DVM/TC measuring module serves:
- for temperature measuring with standard thermo elements: (type J, T according to DIN 43710 and J, T, K, S according to IEC 584)
- for DC voltage measurements within –250V to +250V