DR - DIN Rail

Filters, IEPE Power, Charge Amplifier
Variable and Fixed Frequency Filters

- Filter frequencies from 0.1 Hz to > 500 kHz
- Universal DIN Rail mounting
- Power on indication
- Low pass / Highpass / Notch filter responses
- Adjustable gain 1,2,5 steps to x1000 (+60dB)
- Screw terminal connections
- Independent signal and power earth
- 9–30 VDC power input – ideal for +24 V DC
- 3 Types
  - 255 step variable frequency (DR 1600 series)
  - fixed frequency (DR 1200 series)
  - No filter, IEPE, Charge or 4-20mA signal conditioning only
- Standard Inputs: AC/DC, Single ended/differential, IEPE
- **Optional** +/- 50% output offset
- **Optional** 4-20mA output, current sink, and source.
- **Optional** Charge amplifier via SMB connector

The DIN rail mounting signal conditioning and filter range, are a fast, easy to install, solution for many noisy signal problems. The combination of configurable input, gain, plus a flexible range of signal filters, make the Kemo DIN rail products an ideal choice for many signal conditioning applications.

Kemo's range of DIN rail signal conditioning filters are in use world-wide in a wide range of industries, the standard DIN rail mount makes it ideal for industrial applications.

Applications include: - data acquisition, control signal conditioning, industrial measurements, IEPE transducer conditioning, charge sensor signal conditioning and a wide range of other applications.

DIN rail filters are available in three versions

- DR 0 – IEPE / Charge Amplifier or 4-20mA
- DR 1200 – fixed filter frequency, specified at order. 0.1 Hz to > 500 kHz
- DR 1600 – 255 filter steps, set by DIP switch, range covering 0.2 Hz to 127 500Hz.

All versions have input gain, up to x1000 (+60 dB), AC/DC input coupling, single ended/differential input and IEPE signal conditioning, set to 4mA, but adjustable to 10mA. Options for all three versions are Charge amplifier and/or 4-20mA signal conditioning The signal zero volts is floating from the power supply, allowing flexibility in system earthing, allowing optimisation of signal earthing and zero-volt paths.

Applications

- Anti-aliasing filters
- Noise reduction in industrial measurements
- Signal reconstruction
- Data acquisition systems
- 4-20mA systems
- Sound and Vibration testing
- Band limiting
- Communications systems
- Signal optimization
- Charge Amplifier for industrial accelerometers

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Specification (typical values)

Power Input	10 – 30 Volts DC, 2.5 Watt. Polarity protected, isolated from signal path.
Connections	9 screw terminals (SMB Connector for Charge Amplifier option)
Indicators	External LED indicator shows correct power to filter
Operating Temperature	10 to 45 ºC, non condensing.
Input Coupling	DC / AC (with dual line AC coupling for differential input)
Input Mode	Single ended / Differential / IEPE (24V, 1 - 10 mA, set by single resistor) 4-20 mA input (across 499Ω resistor) / Charge Amplifier
Input Impedance	1 MΩ
Input Gain	x1, x2, x5, x10, x20, x50, x100, x200, x500, x1000. Set by on board jumpers.
Bandwidth	0 dB gain, > 500 kHz
Signal level	+/- 10 Volt pk-pk
Noise and THD	< 0.003% typical (depending on filter type, signal amplitude and frequency)
Output Impedance	47Ω
Outputs	2 Buffered voltage outputs. Optional 4-20mA output, current source (internal +24V source), and current sink.
Trim Adjustments	Offset and Gain. Multi-turn pots.
Frequency Setting	DR 1200 factory set at order DR 1600 by DIP switch, 255 filter steps

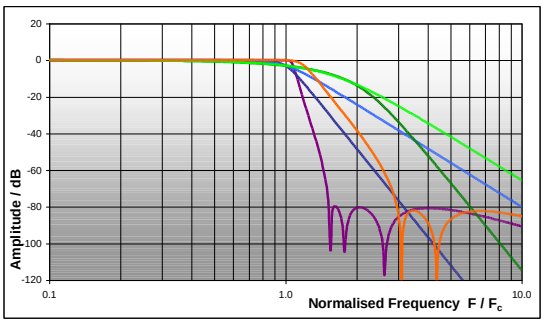
Base Frequency	Frequency Range	Steps
0.2	0.2 – 51 Hz	0.2 Hz
1	1 – 255 Hz	1 Hz
2	2 – 510 Hz	2 Hz
5	5 – 1 275 Hz	5 Hz
10	10 – 2 550 Hz	10 Hz
20	20 – 5 100 Hz	20 Hz
50	50 – 12 750 Hz	50 Hz
100	100 – 25 500 Hz	100 Hz
200	200 – 51 000 Hz	200 Hz
500	500 – 127 500 Hz	500 Hz

Dimensions	27 x 83 x 114 mm (1.1 x 3.3 x 4.5") excluding connectors
Weight	180 gms (6.4 oz)
Fixing	standard 35mm and 15mm DIN rails

Filter Responses

A range of standard filter responses are available to cover most applications.

05 4 pole Butterworth, 24 dB/Octave, monotonic stopband.
03 8 pole Butterworth, 48 dB/Octave, monotonic stopband.
09 4 pole Bessel, 24 dB/Octave, monotonic stopband.
07 8 pole Bessel, 48 dB/Octave, monotonic stopband.
01 Anti Aliasing Elliptic type response, 94 dB/Octave, - 90 dB stopband.
41 General Purpose Flat, linear phase, 52 dB/Octave, - 80 dB stopband.



Ordering Information

Order as DR 0
Order as DR 1200, specify filter frequency and type.
Order as DR 1600, specify filter base frequency and type

Options

Add 'O' for +/- 50% output offset, set by multi-turn pot output offset option
Add 'I' for 4-20mA current output option - 4-20mA output, operates as current source or sink
Add 'C' for charge amplifier input – operates with any charge output device

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