XD – R420

Current Transducers

Operating Instructions November 2005

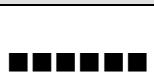
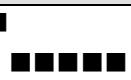
 Bradford BD3 0QW UK

1 Current Input

All **XD-R420** transducers monitor true rms AC amps in a conductor passing through a 10mm/19mm hole in the centre of the device in either direction. Each provides 4-20mA DC current out representing 0 to full-scale true rms input.

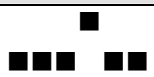
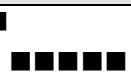
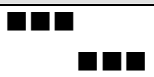
4 basic types are available, each with a user selectable full scale input current. DIP switches located on the underside of each device select the required input range.

1.1 Type 0 (19mm Hole)

0-100mA	0-200mA	0-500mA	0-600mA	0-1A
				
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

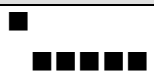
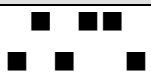
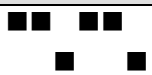
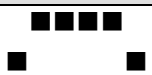
1. TYPE 0 DIP Switch Settings

1.2 Type 1 (10mm Hole)

0-5A	0-10A	0-15A	0-20A	0-30A
				
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

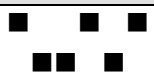
2. TYPE 1 DIP Switch Settings

1.3 Type 2 (19mm Hole)

0-40A	0-60A	0-80A	0-100A	0-120A
				
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

3. TYPE 2 DIP Switch Settings

1.4 Type 3 (19m Hole)

0-100A	0-150A	0-200A	0-250A	0-300A
				
1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6

4. TYPE 3 DIP Switch Settings

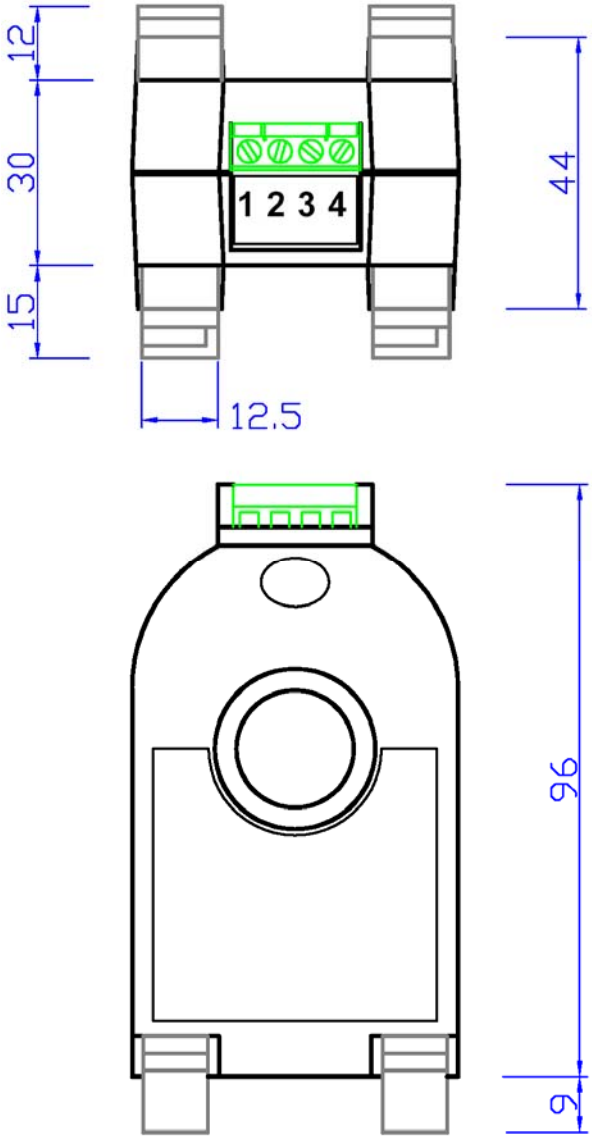
2 4-20mA DC Output

The **XD-R420** series of transducers convert the selected input current range (0 - XXX Amps) to 4-20mA DC output.

The transducer output circuit draws dc current from an external power supply (nominal 24V dc, not supplied). The supply may be independent or part of the measurement loop provided by a monitoring device such as a programmable logic controller (PLC).

A true rms input of zero amps will result in an output of 4mA and full-scale input (depends on selected range) gives 20mA.

3 Dimensions

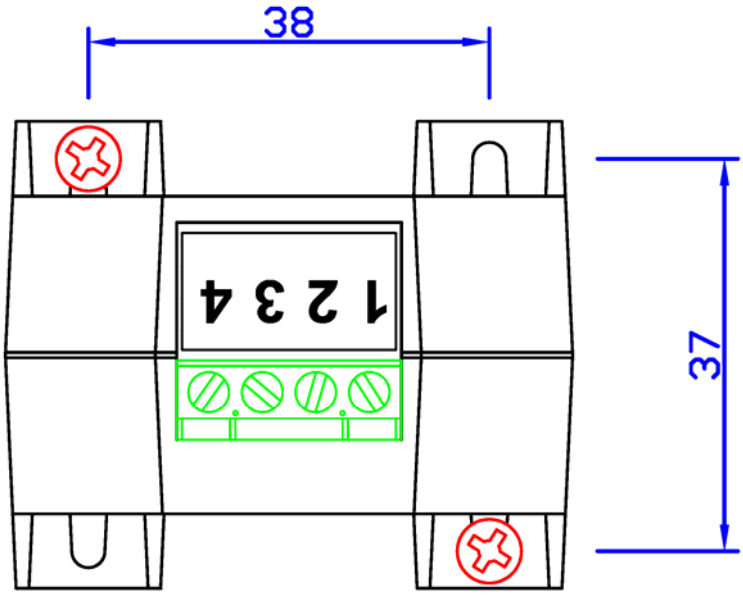


5. Dimensioned Drawing (Including Rail MountClips)

4 Mounting The Unit

4.1 Panel Mounting

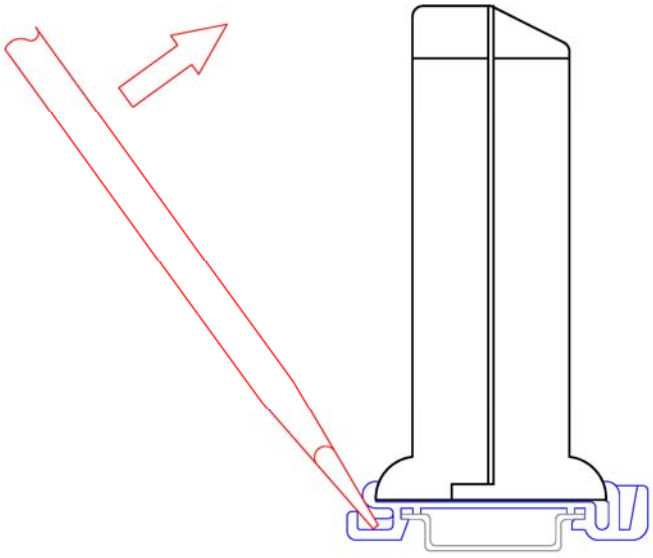
Four mounting holes are provided which enable the XD transducer to be screwed to a flat panel or mounting plate.



6. Panel Mounting Template

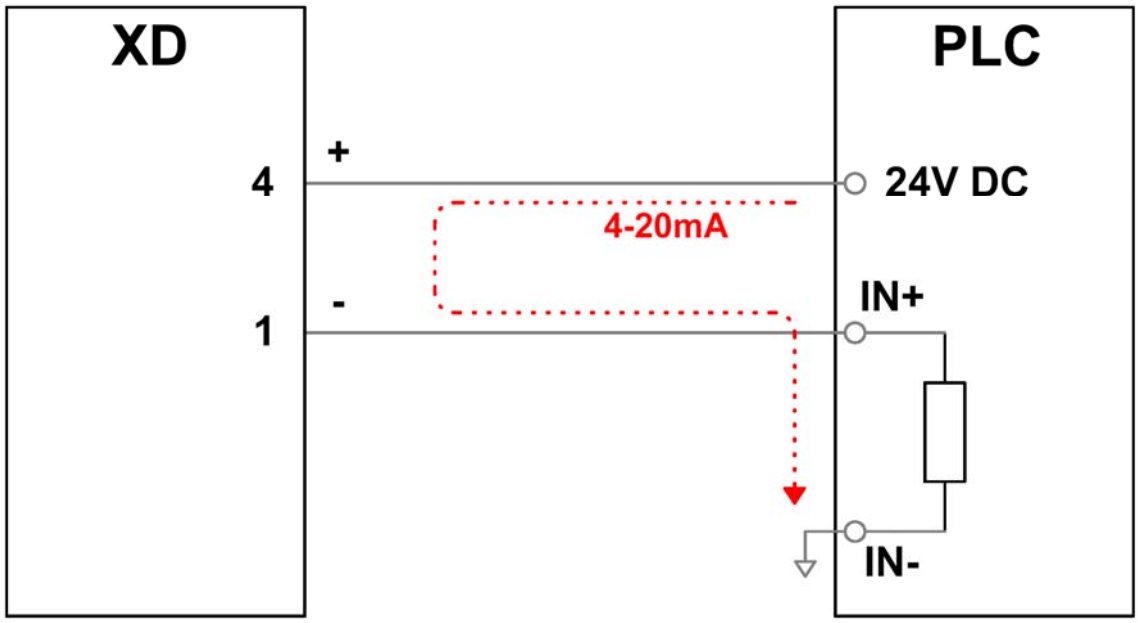
4.2 DIN Rail Mounting

A mounting kit for symmetrical DIN rail is provided which is fitted to the bottom of the transducer as shown below. To remove the transducer from the DIN rail use a flat screw driver to release the clip as shown.

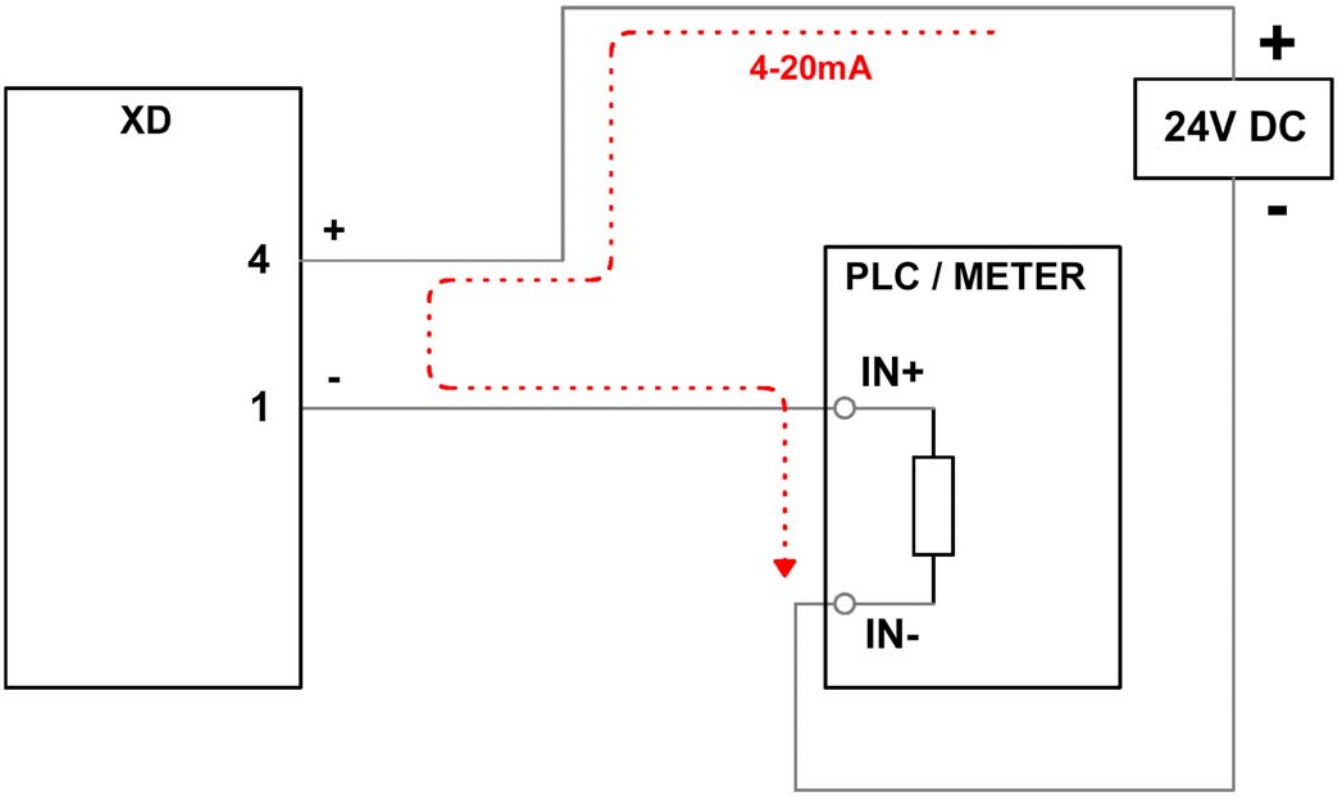


7. DIN Rail Mounting Option

5 Connections



8. Typical 4-20mA Connection Loop Powered



9. Typical 4-20mA Connection (External 24V DC)

6 Specification

Nominal Input Ranges	
XD-R420 Type 0	True rms: 0-100mA, 0-200mA, 0-500mA, 0-600mA, 0-1A.
XD-R420 Type 1	True rms: 0-5A, 0-10A, 0-15A, 0-20A, 0-30A.
XD-R420 Type 2	True rms: 0-40A, 0-60A, 0-80A, 0-100A or 0-120A.
XD-R420 Type 3	True rms: 0-100A*, 0-150A, 0-200A, 0-250A or 0-300A.

Output Ranges	
XD-R420	4-20mA dc.

Measurement Range	
XD-R420	0-110% of nominal input range selected.
Input Overload	2 x Nominal input range selected, continuous. 15 x Nominal input range selected for 10 seconds.
Crest Factor (Ipk / Irms)	Max 1.8 (at 100% nominal full scale)

Accuracy (All Types)	
Typical	± 0.5%. FS.
Maximum	± 1.0%. FS.

Loop Supply	
Voltage	Minimum 12V dc, Nominal 24V dc, Maximum 36V dc.
Burden (cable etc)	250Ω Nominal, 600Ω Maximum.
Current Rating	30mA max per **XD-R420** Connected.

Miscellaneous	
Isolation	Input to Output 4kV, 50Hz, 1 second.
Frequency Range	45 – 65 Hz standard.
Response Time	1 Second nominal.
Temperature	Operating 0 to 60 deg C. Storage –20 to +70 deg C.
Humidity	95 % RH (non-condensing).
Dimensions	Panel Mounted: L=53mm, W=44mm, H=96mm Rail Mounts Fitted: L=53mm, W=57.5mm, H=104m