



AC Current transducer APR-B420L

$I_{PN} = 10 .. 400 A$

Split core transducer for the electronic measurement distorted AC waveforms current, with galvanic isolation between the primary circuit (power) and the secondary circuit (measurement). Switch selectable ranges and True RMS 4-20mA current output.



Electrical data

Primary Nominal Current I_{PN} (A.t.rms)	Output Current I_{OUT} (mA)	Type	RoHS since date code
10,25,50	4-20	APR 50 B420L	planned
50,75,100	4-20	APR 100 B420L	planned
100,150,200	4-20	APR 200 B420L	46317
200,300,400	4-20	APR 400 B420L	46291

R_L	Load resistance (See the graph "Load Resistance vs. Supply Voltage")	< 350 Ω
V_C	Supply voltage (loop powered)	+ 12 .. 24 V DC
I_{SL}	Output current limitation	< 25 mA
I_P	Overload capability	no limitation

Accuracy-Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ C$ (excluding offset)	< ± 1 % of I_{PN}
e_L	Linearity error (0 .. $\pm I_{PN}$)	< ± 0.5 % of I_{PN}
I_{OE}	Electrical offset current @ $T_A = 25^\circ C$	4 mA
TCI_{OE}	Temperature coefficient of I_{OE}	± 1 $\mu A/K$
TCI_{OUT}	Temperature coefficient of I_{OUT} (% of reading)	± 0.1 %/K
t_r	Response time to 90% of I_{PN} step	< 400 ms
BW	Frequency bandwidth (± 1 %)	30 .. 6000 Hz

General data

T_A	Ambient operating temperature	- 20 .. + 60 $^\circ C$
T_S	Ambient storage temperature	- 20 .. + 85 $^\circ C$
m	Mass	90 g
IPxx	Protection degree	IP20

Features

- VFD and SCR waveforms current measurement
- True RMS output
- Split core type
- Loop powered 4-20mA current output
- DIN mounting & Panel mounting
- Eliminates insertion loss
- Switch selectable ranges
- Isolated plastic case recognized according to UL94-V0.

Advantages

- Large aperture for cable up to Ø18mm
- High isolation between primary and secondary circuits
- Easy installation

Applications

- **VFD Controlled Loads:**
VFD output indicates how the motor and attached load are operating.
- **SCR Controlled Loads:**
Accurate measurement of phase angle fired or burst fired (time proportioned)
SCRs. Current measurement gives faster response than temperature measurement.
- **Switching Power Supplies and Electronic Ballasts:**
True RMS sensing is the most accurate way to measure power supply or ballast input power.

Application domain

- Energy and Automation

Current Transducer APR-B420L

Isolation characteristics

V_b	Rated isolation voltage rms with IEC 61010-1 standards and following conditions :	300	V
	- Single insulation		
	- Over voltage category CAT III		
	- Pollution degree PD2		
	- Heterogeneous field		
V_d	Rms voltage for AC isolation test, 50 Hz, 1min	5	kV
V_e	Partial discharge extinction voltage rms @ 10 pC	1.5	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	6.1	kV
If insulated cable is used for the primary circuit, the voltage category could be improved with the following table :			
	Cable insulation (primary)	Category	
	HAR 05	600V CAT III	
	HAR 07	1000V CAT III	
d_{Cp}	Creepage distance	5.5	mm
d_{Cl}	Clearance distance	5.5	mm
CTI	Comparative tracking index (Group I)	600	

Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

Installation and maintenance should be done with main power supply disconnected.

The operator must have an accreditation to install this material.



Caution! Risk of electrical shock

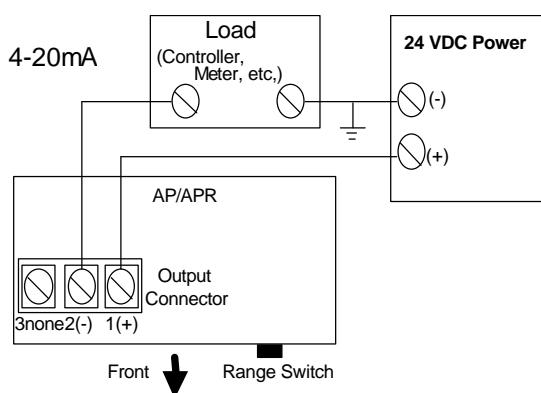
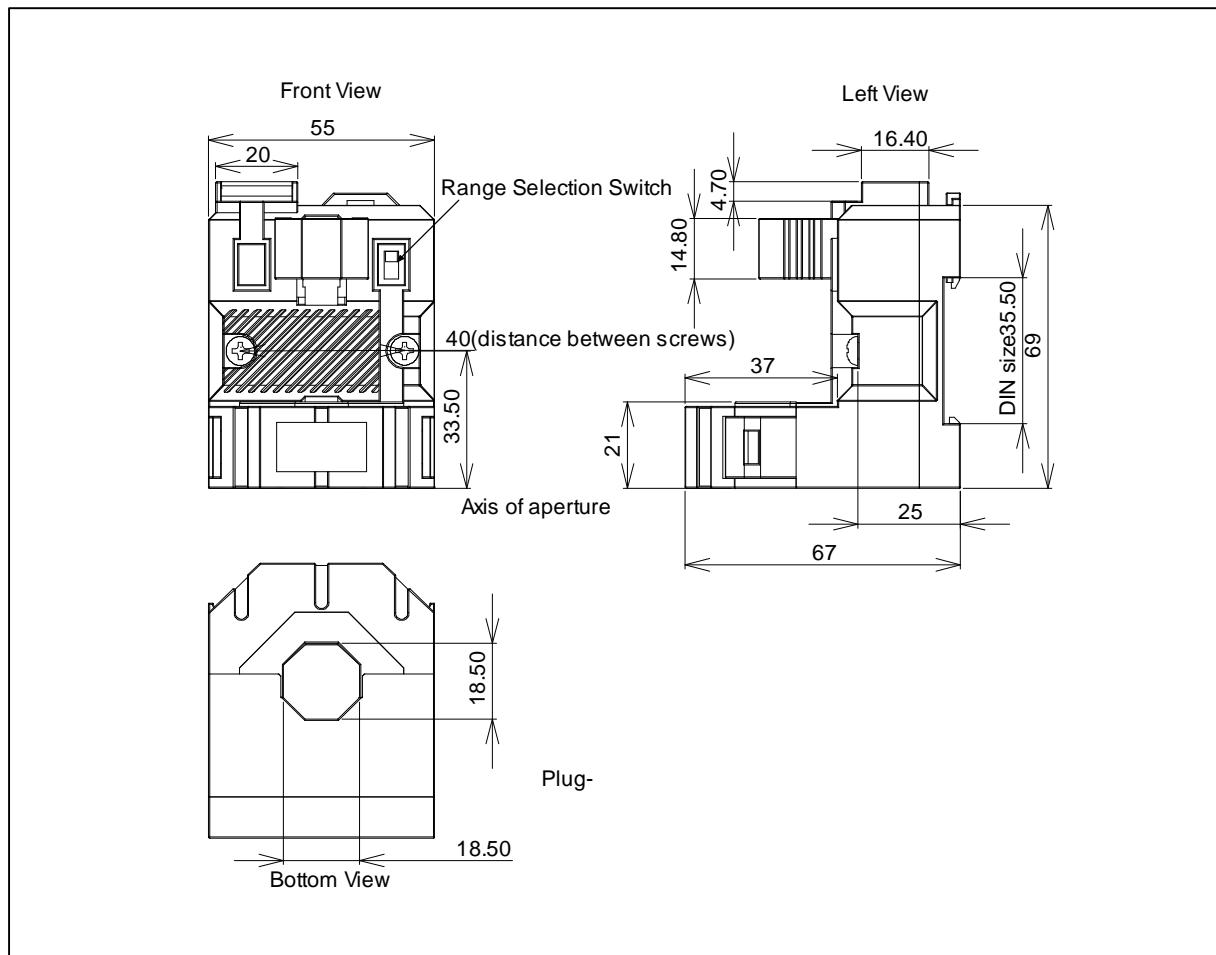
When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary conductor, power supply).

Ignoring this warning can lead to injury and/or cause serious damage.

The user must take care of all protection guarantee against electrical shock.

This transducer is a built-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

Dimensions AP(R)-B420L (unit : mm, 1mm = 0.0394 inch)



Connections

- Wires up to \varnothing 2 mm
- Female connector provided (spring terminal blocks)
- User-friendly spring-cage connection for no-tool direct conductor connection

Mechanical characteristics

• General tolerance	± 1 mm
• Primary aperture	\varnothing 18.5 mm
• Panel mounting	2 holes \varnothing 4.0 mm
• Distance between holes	40.0 mm

For panel mounting, replace M4 screws by new one (not supplied) with appropriate length to panel's thickness.

