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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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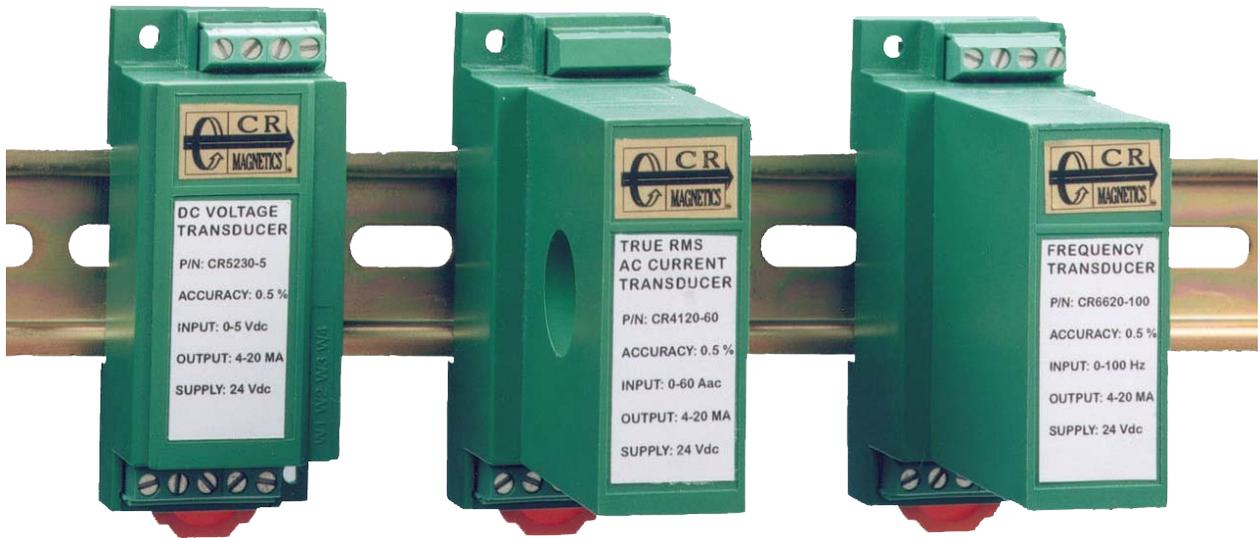
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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

TRANSDUCERS

Solutions For Voltage, Current, Power & Frequency



An Advanced Line Of Precision Transducers:

- True RMS
- DC Sensing
- Loop Powered
- Self Powered
- Active & Reactive Power

CURRENT SOLUTIONS





www.crmagnetics.com

sales@crmagnetics.com

Ph: 636-343-8518

Fx: 636-343-5119

544 Axminister Dr.

Fenton, MO 63026

USA

Specialists in Electrical Current and Power Monitoring Products

CURRENT

True RMS, Average RMS, DIN Rail, Panel Mount, Rugged Environment, Multi-phase, Mono-phase, AC & DC

VOLTAGE

True RMS, Average RMS, DIN Rail, Panel Mount, Rugged Environment, Multi-phase, Mono-phase, AC & DC

POWER

Active, Reactive, 1, 2, or 3 Elements, DIN Rail, Panel Mount

FREQUENCY

Sine Wave, Square Wave, Zero-Cross, DIN Rail, Panel Mount

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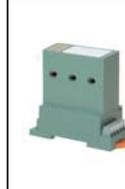
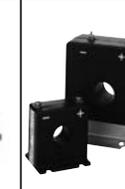
The information in this catalog has been carefully checked and is believed to be accurate; however, no responsibility is assumed for any inaccuracies.

CR Magnetics, Inc. 544 Axminister Dr. Fenton MO USA 63026 V: 636.343.8518 F: 636.343.5119

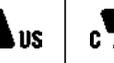
Web: <http://www.crmagnetics.com>

E-mail: sales@crmagnetics.com

TRANSDUCCERS

CURRENT										
AC								AC/DC	DC	
True RMS			Average RMS						RMS	
24 Vdc			Loop Powered			Self Powered	120 Vac Powered	24 Vdc		
Power Source										
Elements	1	2	3	1	2	1	1	1	1	
Input Range	0.5 - 150 Aac	0.5 - 15 Aac	0.5 - 15 Aac	0.5 - 50 Aac	0.5 - 50 Aac	5 - 400 Aac	5 - 200 Aac	5 - 600 Aac	20 - 300 Aac/dc ±DC - 4 KHZ	0 - 300 Adc
Mounting	DIN/PANEL					PANEL			DIN/PANEL	
Output	0 - 5 Vdc 4-20 mAdc			4-20 mAdc			0-5 Vdc 0-10 Vdc	4-20 mAdc	±5 Vac/dc	0-5 Vdc 4-20 mAdc
Part Number	CR4110 CR4120	CR4150 CR4160	CR4170 CR4180	CR4220	CR4260	CR4320	CR4310 CR4311	CR4340	CR5410	CR5210 CR5220
Agency Approval										
Page	6	6	6	14	14	10	8	12	16	18
Images										

TRANSDUCCERS

VOLTAGE					POWER				FREQUENCY
AC		DC			AC				
True RMS		Average RMS			RMS		Active/Reactive		Sine Wave Square Wave Zero-Cross
24 Vdc		Loop Powered		24 Vdc		12 Vdc		24 Vdc	
1	3 Δ 3 Y	1	2	3 Δ 3 Y	1	1	3 Δ	3 Y	1
50-500 Vac				120-480 Vac	.05-200 Vdc	5-50 Aac 150-500 Vac			100-5000K Hz
DIN/PANEL				PANEL	DIN/PANEL				
0-5Vdc 4-20 mAdc		4-20 mAdc			0 - 5 Vdc 4-20 mAdc				
CR4510 CR4520	CR4550 CR4560 CR4570 CR4580	CR4620	CR4640	CR4730 CR4731	CR5310 CR5320	CR6210 CR6211 CR6220 CR6221	CR6230 CR6231 CR6240 CR6241	CR6250 CR6251 CR6260 CR6261	CR6610 CR6611 CR6612 CR6620 CR6621 CR6622
									
									
20	20	24	24	22	26	28	28	28	32

RELAYS and INDICATORS

	Relays			Indicators		
						
Part Number	CR4395	CR7310	CR9321	CR45	Model 18 & 19	CR2550
Description	Current Relay	Ground Fault Sensor	Current Switch	Current Indicator	Current Indicator	Current Indicator
Frequency	60/400 Hz	60/400 Hz	50/400Hz	50/60 Hz	50/60 Hz	50/400 Hz
Input Range	.01 to 100 Aac	.01 to 100 Aac	0.350 Aac	2 to 100 Aac	2 to 100 Aac	2 to 100 Aac
Output	Relay Transistor Triac	Relay Transistor Triac	Solid State	Visual	Visual	Visual
Accuracy	—	—	—	—	—	—
Dimensions (H)x(W)x(D)	2.13 x 3.50 x 2.5 (54.1x88.9x63.5)	2.13 x 3.50 x 2.5 (54.1x88.9x63.5)	1.50x1.0x.75 (38.1x25.4x19.1)	1.04x.95x.46 (26.4x24.1x11.7)	See Catalog	See Catalog
Power Source	120 Vac 240 Vac 24 Vdc	120 Vac 240 Vac 24 Vdc	Self Powered	Self Powered	Self Powered	Self Powered
Agency Approval			—	—	—	—

Contact factory or see Internet site for additional information on our Current Sensing Relays and Visual Current Indicators.

CURRENT TRANSFORMERS

Current Transformers						
						
17,18, 19		CR8750	CR8400		CR8300	
Wire Lead	Commercial ANSI Class	Horizontal Mount	Wire Lead	Split Core	Vertical Mount	Medium Voltage
50-400 Hz	50-400 Hz	50-400 Hz	—	50-400 Hz	50-400 Hz	50-400 Hz
Up to 60 Aac	Up to 4,000 Aac	Up to 60 Aac	—	Up to 10,000 Aac	Up to 100 Aac	Up to 3,000 Aac
—	5.0, 1.0 0.2, 0.1 AAC	—	—	5.0 Aac & High Ratios	—	5.0 Aac
—	Up to 0.3%	—	—	Up to 0.3%	—	Up to 0.3%
.29 & .55 (7.4 & 14.0)	See Catalog	.250 (6.4)	.232 to .610 (5.8 to 15.5)	See Catalog	.272 to .772 (6.9 to 19.6)	See Catalog
—	—	—	—	—	—	—
		—	—		—	

Contact factory or see Internet site for additional information on our Current Transformers.



True RMS AC Current Transducer

DIN RAIL / PANEL MOUNT, TRUE RMS

The **CR4100** Series true RMS Current Transducers and Transmitters are designed for applications where AC current waveforms are not purely sinusoidal. More precise and accurate than other transducers, these devices are ideal in chopped wave and phase fired control systems.



CR4110 CR4120
One Element - .79" Window
0.5 to 150 Aac Range



CR4150 CR4160
Two Element - .26" Window
0.5 to 30 Aac Range



CR4170 CR4180
Three Element .26" window
0.5 to 30 Aac Range

Regulatory Agencies

- Approved to UL3111-1, First Edition, Amendment 2
- Approved to CAN/CSA-C22.2, No. 1010.1-92
- Meets requirement of IEC 61010-1 and BS EN 61010-1

Applications

- Phase fired controlled heaters
- Quickly varying motor loads
- Chopped wave form drivers
- Harmonic currents

Features

- 35mm DIN Rail or Panel Mount
- Available with 0 - 5 Vdc or 4 - 20 mA DC outputs
- 24 Vdc powered
- Use with external current transformers
- Highest precision available
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

- Pricing: pricing/4100.html
- Application Sheets: pdf/ancr4310.pdf, pdf/ancr4310-2.pdf, pdf/ancr4320.pdf

See page 34 for typical applications

Part Numbers

- CR4110** - Single element with 0 - 5 Vdc output
- CR4120** - Single element with 4 - 20 mA DC output
- CR4150** - Two element with 0 - 5 Vdc output *
- CR4160** - Two element with 4 to 20 mA DC output *
- CR4170** - Three element with 0 - 5 Vdc output *
- CR4180** - Three element with 4 - 20 mA DC output *

* Two and three element transducers are available only in ranges of 0.5 to 30 Aac

Add suffix for input range

- | | |
|------------------------|------------------------|
| .5 - 0-.5 Aac * | 40 - 0-40 Aac |
| 5 - 0- 5 Aac * | 50 - 0-50 Aac |
| 10 - 0-10 Aac * | 75 - 0-75 Aac |
| 15 - 0-15 Aac * | 100 - 0-100 Aac |
| 20 - 0-20 Aac * | 150 - 0-150 Aac |
| 25 - 0-25 Aac * | |
| 30 - 0-30 Aac * | |

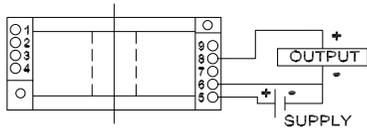
Other Ranges Available

True RMS AC Current Transducer

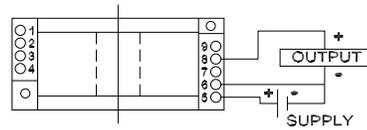
Specifications

Basic Accuracy:.....	0.5%	Frequency Range:.....	20 Hz - 5 KHz
Calibration:.....	True RMS Sensing	MTBF:.....	Greater than 100 K hours
Thermal Drift:.....	500 PPM/°C	Cleaning:.....	Water-dampened cloth
Operating Temperature:.....	0°C to +60°C	Supply Voltage:.....	24 Vdc ±10%
Installation Category:.....	CAT II	Output Load:.....	4-20 mA dc - 0 to 300 Ω
Pollution Degree:.....	2		0-5 Vdc - 2K Ω or Greater
Insulation Voltage:.....	2500 Vdc	Response Time:.....	250 ms max. 0-90% FS
Altitude:.....	2000 meter max.	Relative Humidity:.....	80% for temperatures up to 31°C and decreasing linearly to 50% at 40°C

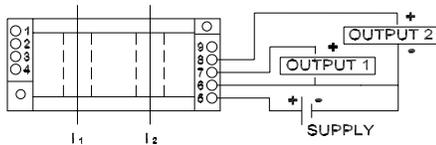
Connection Drawings



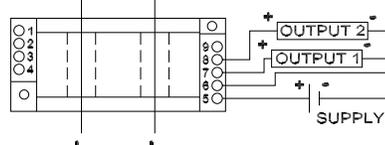
CR4110 One Element 0 - 5 Vdc Output



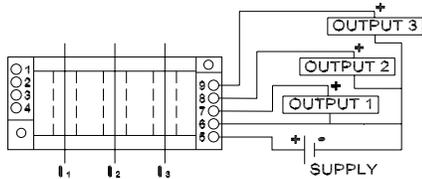
CR4120 One Element 4 - 20 mA DC Output



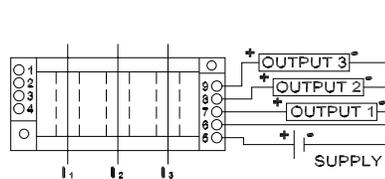
CR4150 Two Element 0 - 5 Vdc Output



CR4160 Two Element 4 - 20 mA DC Output



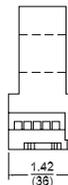
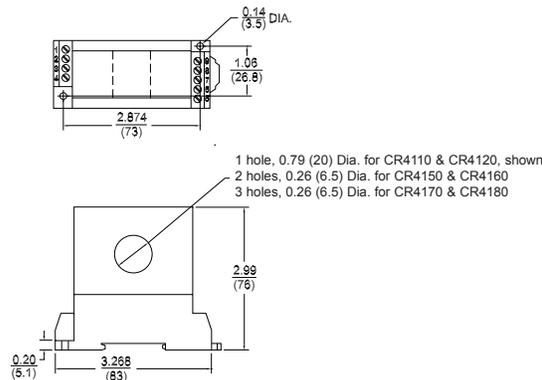
CR4170 Three Element 0 - 5 Vdc Output



CR4180 Three Element 4 - 20 mA DC Output

Note: The building installation must have a switch or circuit-breaker that is in close proximity and within easy reach of the operator. The switch or circuit breaker shall be marked as the disconnecting device for the equipment.

Outline Drawing



inch (mm)



AC Current to Voltage Transducer

PANEL MOUNT RUGGED CONDITION, AVERAGE SENSING

The **CR4310** Series, current-to-voltage transducer produces a DC voltage output signal that is proportional to the input average RMS AC current. Designed for use with sinusoidal AC current signals, these devices provide an easy implementation of most AC current sensing requirements.



Applications

- Directly connect to PLC high impedance inputs
- Sense motor stalls and short circuits
- Process control loops
- Industrial instrumentation

Features

- Permanently calibrated and sealed for rugged environments
- Continuous operation at 150% of Full Scale
- Output overload protected
- Self-powered, requires no external power source
- 5 & 10 Vdc output available



CR4310 **CR4311**
.93" Window

Internet Resources <http://www.crmagnetics.com/>

- Pricing: [pricing/4310.html](http://www.crmagnetics.com/pricing/4310.html)
- Application Sheet: [pdf/ancr4310.pdf](http://www.crmagnetics.com/pdf/ancr4310.pdf),
[pdf/ancr4310-2.pdf](http://www.crmagnetics.com/pdf/ancr4310-2.pdf)

Part Numbers

CR4310 - 0 - 5 Vdc output
CR4311 - 0 - 10 Vdc output

Add suffix for input range

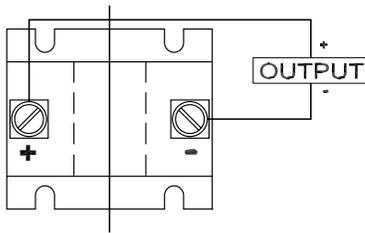
		Accuracy
5	- 0-5 Aac	1.0
10	- 0-10 Aac	0.75
15	- 0-15 Aac	0.75
20	- 0-20 Aac	0.5
30	- 0-30 Aac	0.5
40	- 0-40 Aac	0.5
50	- 0-50 Aac	0.5
75	- 0-75 Aac	0.5
100	- 0-100 Aac	0.5
150	- 0-150 Aac	0.5
200	- 0-200 Aac	0.5

AC Current to Voltage Transducer

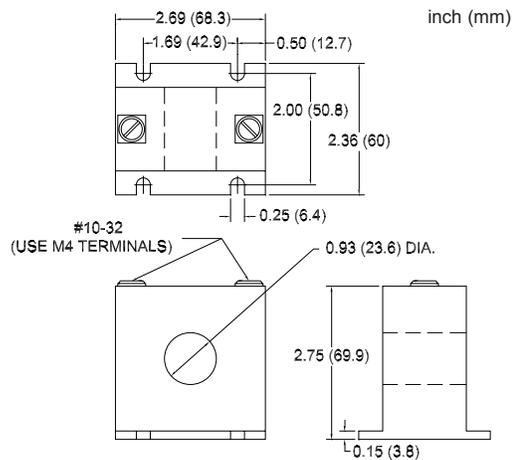
Specifications

Accuracy:.....	Depends on the range, see Part Numbers table	Operating Temperature Range:..	-30°C to +60°C
Calibrated Signal Out:.....	0 - 5 Vdc for CR4310 0 - 10 Vdc for CR4311	Storage Temperature Range:.....	-55°C to +85 °C
Max. Signal Out:.....	16 Vdc for CR4310 33 Vdc for CR4311	Shipping Weight:.....	1.5 pounds (.68 kg.)
Response Time:.....	250 ms max., 10-90% FS	Frequency:.....	50/60 Hz
Continuous Thermal Current Rating Factor:....	2.50 @ 30°C	Ripple:.....	1% Max. peak
Short Time Thermal Current Rating Factor:..	.60 x FS (1 Sec)	Insulation Class:.....	600 V, BIL 10 KV Full Wave
		Output Load:	4310 - 1 Meg Ω or Greater 4311 - 150 K Ω or Greater

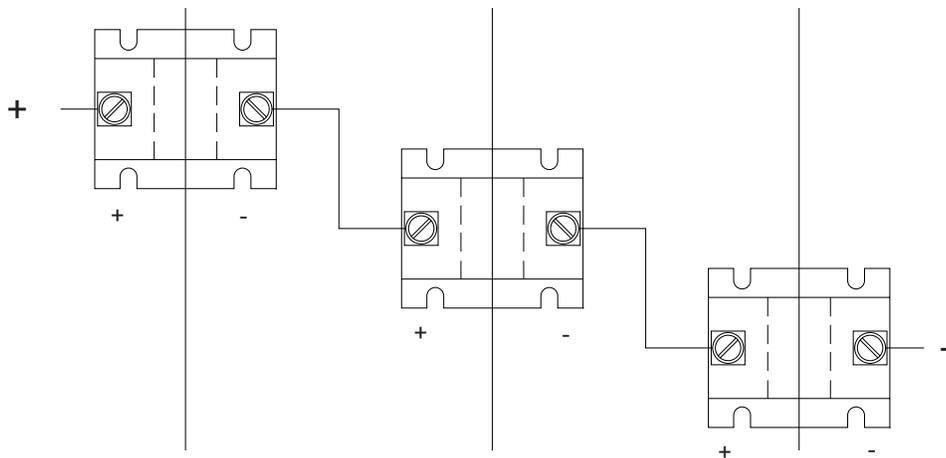
Connection Drawing



Outline Drawing



Typical Application



3-PHASE SYSTEMS

Three-phase systems may be monitored by attaching three transducers in series. The total output voltage will be the sum of each individual transducer. If each transducer is sized for the full-scale current, the output voltage will be 0-15 Vdc for the CR4310 Series (0-30 Vdc for the CR4311 Series) at 0 to 100% full-scale. As an alternate, each transducer may be sized for three times the full-scale current, then the output voltage for the CR4310 will be 0-5 Vdc for 0 to 100% full-scale.



2-Wire AC Current Transmitter

PANEL MOUNT RUGGED CONDITION, AVERAGE SENSING

The **CR4320** Series, Loop-powered, Current Transmitter produces 4 - 20 mA DC output current proportional to the input average RMS AC current. These devices provide long range monitoring of AC sinusoidal currents in an easy to install package.



Applications

- Remote sensing of current from distant locations
- Sense motor stalls and short circuits
- Process control loops
- Industrial automation
- Electrically noisy environments

Features

- Permanently calibrated and sealed for rugged environments
- Loop powered 2-wire connection eases installation
- Output overload protected
- Continuous operation at 130% full scale

Internet Resources <http://www.crmagnetics.com/>

- Pricing: [pricing/4320.html](#)
- Application Sheet: [pdf/ancr4320.pdf](#)



5-200 Aac input
.93 Window



300 and 400 Aac input
1.25 Window

Part Numbers

CR4320 - 2-Wire AC Current Transmitter

Add suffix for input range

.93" Window

1.25" Window

5 - 0-5 Aac
 10 - 0-10 Aac
 15 - 0-15 Aac
 20 - 0-20 Aac
 30 - 0-30 Aac
 50 - 0-50 Aac
 75 - 0-75 Aac
 100 - 0-100 Aac
 150 - 0-150 Aac
 200 - 0-200 Aac

300 - 0-300 Aac
 400 - 0-400 Aac *

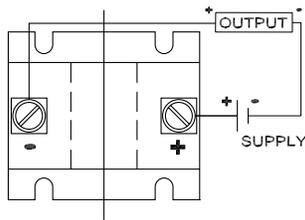
* not UL recognized

2-Wire AC Current Transmitter

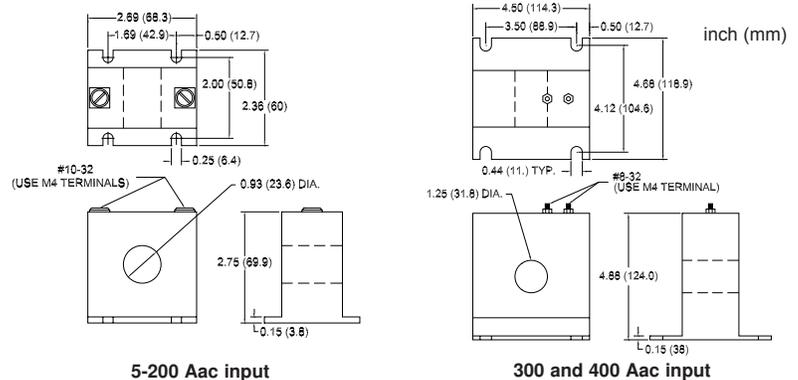
Specifications

Accuracy:.....	±0.5% Full-Scale	Output Load:.....	0 to 600 Ω
Repeatability:.....	Less than 0.1%	Insulation Class:.....	600 V, BIL 10 KV Full Wave
Ripple & Noise:.....	1% max. P/P	Reverse Polarity Protection:.....	Yes
Calibrated Signal Out:.....	4 - 20 mA DC	Operating Temperature Range:	-30°C to +60°C
Response Time:.....	200 ms max.	Storage Temperature Range:.....	-55°C to +85°C
Max. Signal Out:.....	30 mA DC	Approximate Weight:.....	1.5 pounds (.68 kg)
Temperature Coefficient:.....	± 0.04%/°C	Short Time Thermal Current Rating Factor (30 Sec.):	
Supply Voltage:.....	24 Vdc ±10%	6.0 x Full Scale for AC ranges up to 200 Amp.	
Frequency:.....	50/60 Hz	4.0 x Full Scale for ranges 300 and 400 Amp.	
Continuous Thermal Rating Factor:..	1.33 @ 30°C.		

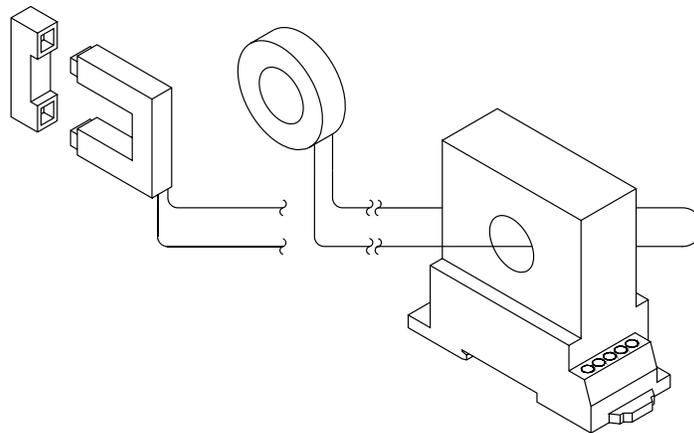
Connection Drawing



Outline Drawings



Typical Application



EXTERNAL CURRENT TRANSFORMERS

The transducers and transmitters may be used with an external split-core or solid-core current transformer. The external transformer can be used to access remote loads or where the current-carrying wire is too large to fit through the window opening of the unit. A standard, 5 Amp secondary, commercial grade current transformer would be attached with the secondary leads threaded through the window opening. A transducer or transmitter with a 0-5 Amp input range would be selected. Request CR Magnetics current transformer catalog.



4-Wire AC Current Transmitter

PANEL MOUNT RUGGED CONDITION, AVERAGE SENSING

The **CR4340** Series Current Transmitter produces a calibrated 4 - 20 mA DC signal proportional to the average RMS input AC current. The output signal is produced by an internal current generator powered from an external 120 Vac supply.



Applications

- Remote current sensing of distant locations
- Sense motor stalls and short circuits
- Process control loops
- Stand alone or small instrumentation systems
- Electrically noisy environments

Features

- Permanently calibrated and sealed for rugged environments
- Direct attachment to instrumentation without the need of a DC power supply in the loop
- Output overload protected
- Continuous operation at 130% Full Scale

Internet Resources <http://www.crmagnetics.com/>

Pricing: [pricing/4340.html](#)
 Application Sheet: [pdf/ancr4340-1.pdf](#)



5-75 Aac input
.94" Window



100-600 Aac input
2.13" Window

Part Numbers

CR4340 - 4-Wire AC Current Transmitter

Add suffix for input range

		.94" Window	2.13" Window
5	-	0-5 Aac	100 - 0-100 Aac
			150 - 0-150 Aac
20		0-10 Aac *	200 - 0-200 Aac
		0-15 Aac *	300 - 0-300 Aac
		0-20 Aac *	400 - 0-400 Aac
			600 - 0-600 Aac
75		0-25 Aac *	
		0-50 Aac *	
		0-75 Aac *	

* Range set with field selectable switch

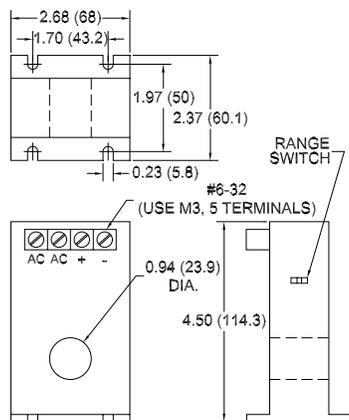
4-Wire AC Current Transmitter

Specifications

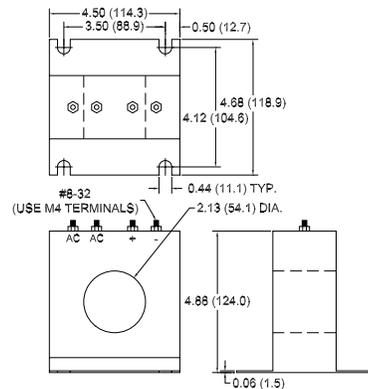
Accuracy:..... $\pm 0.5\%$ Full-Scale
 Ripple & Noise:..... 1% max., P/P
 Calibrated Signal Out:..... 4-20 mA DC
 Response Time:..... 150 ms max.
 Supply Voltage:..... 120 $\pm 10\%$ Vac
 Frequency:..... 50/60 Hz
 Continuous Thermal Current Rating Factor:
 1.50 @ 30°C for ranges up to 75 Amp.
 1.33 @ 30°C for ranges 100 Amp. and over

Output Load:..... 0 - 1000 Ω
 Operating Temperature Range:..... -30°C to +60°C
 Storage Temperature Range:..... -55°C to +85°C
 Temperature Coefficient:..... $\pm 0.02\%/^{\circ}\text{C}$
 Max. Signal Out:..... 30 mA DC
 Insulation Class:..... 600 V, BIL 10 KV Full Wave
 Short Time Thermal Current Rating Factor (For 30 Sec.):
 15.0 x Full Scale for AC ranges up to 75 Amp.
 4.0 x Full Scale for ranges 400 Amp. and over

Outline Drawings



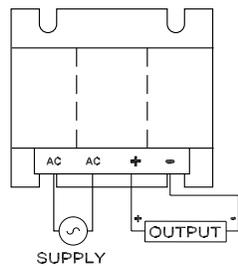
5-75 Aac input



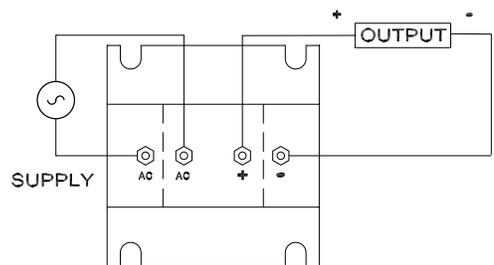
100-600 Aac input

inch (mm)

Connection Drawings



CR4340
5 - 75 Aac



CR4340
100 - 600 Aac



Loop-Powered AC Current Transmitter

DIN RAIL / PANEL MOUNT, AVERAGE SENSING

The **CR4200** Series, Current Transmitters produce a calibrated 4-20 mA DC signal that is proportional to the average RMS input AC current. Designed for multi-point current sensing, these devices provide excellent features in a high value package. The output signal is generated from a user supplied 24 Vdc power supply within the output current loop.



CR4220

One Element - .79" Window
0.5 to 50 Aac Range



CR4260

Two Element - .26" Window
0.5 to 30 Aac Range

Regulatory Agencies

- Approved to UL3111-1, First Edition, Amendment 2
- Approved to CAN/CSA-C22.2, No. 1010.1-92
- Meets requirement of IEC 61010-1 and BS EN 61010-1

Applications

- Multi-point current sensing and control panels
- Remote current sensing
- Monitor motor faults
- Monitor heating elements
- Monitor lighting elements

Features

- Relatively low cost
- 35mm DIN rail or panel mount
- High Accuracy
- Easy wiring
- Interfaces with most commercially available instrumentation
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

- Pricing: pricing/4200.html

See page 34 for typical applications

Part Numbers

CR4220 - Single element with 4 to 20 mA DC output
CR4260 - Two element with 4 to 20 mA DC output *

* Two element transducers are available only in ranges of 0.5 to 30 Aac

Add suffix for input range

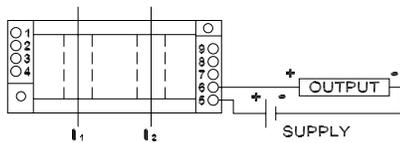
.5	-	0-.5 Aac *
5	-	0- 5 Aac *
10	-	0-10 Aac *
15	-	0-15 Aac *
20	-	0-20 Aac *
25	-	0-25 Aac *
30	-	0-30 Aac *
40	-	0-40 Aac
50	-	0-50 Aac
Other Ranges Available		

Loop-Powered AC Current Transmitter

Specifications

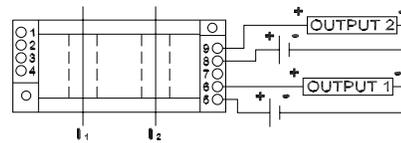
Basic Accuracy:.....	0.5%	Insulation Voltage:.....	2500 Vdc
Thermal Drift:.....	500 PPM/°C	Loop Voltage:.....	24 Vdc
Operating Temperature:.....	0°C to +60°C	Frequency Range:.....	20Hz- 4 KHz
Installation Catagory:.....	CAT II	Compliance Voltage:...	16 to 28 Vdc
Polution Degree:.....	2	Typical Load:.....	0 To 300 Ω @ 24 Vdc
MTBF:.....	Greater than 100 K hours	Cleaning:.....	Water-dampened cloth
Altitude:.....	2000 meter max.	Response Time:.....	250 ms max., 0-90% FS
Response Time:.....	250 ms max., 0-90% FS	Relative Humidity:.....	80% for temperatures up to 31°C and decreasing linearly to 50% at 40°C
Calibration:.....	Average Sensing, RMS Calibrated		

Connection Drawings



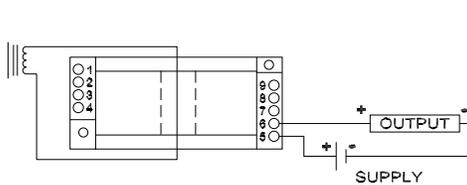
CR4220

One Element - 4 - 20 mA DC Output



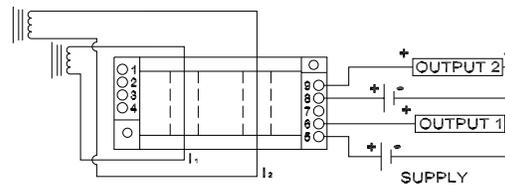
CR4260

Two Element 4 - 20 mA DC Output



CR4220

One Element with external current transformer *



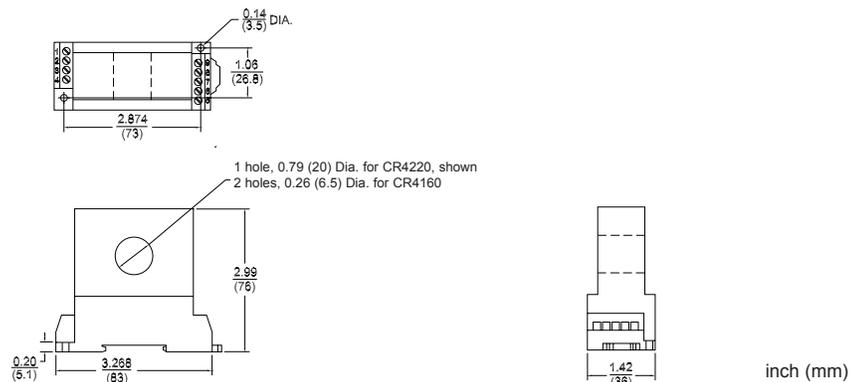
CR4260

Two Element with external current transformer *

* REQUEST CR MAGNETICS LOW AND MEDIUM VOLTAGE CURRENT TRANSFORMER CATALOG

Note: The building installation must have a switch or circuit-breaker that is in close proximity and within easy reach of the operator. The switch or circuit breaker shall be marked as the disconnecting device for the equipment.

Outline Drawing





AC/DC Hall Effect Current Transducer

DIN RAIL / PANEL MOUNT, TRACING OUTPUT

The **CR5400** Series, AC/DC Hall Effect Current Transducers, are designed to provide a bipolar output that proportionally reflects (traces) the waveform of the input current. These devices are specifically targeted to be used in applications where multi-mode current sensing is required.

Applications

- Inverter and multi-frequency drives
- Multi-mode ground paths carrying both AC and DC signals
- Feed back loop building block

Features

- Output isolated from input
- Non-contact current sensing
- 35mm DIN Rail or Panel Mount
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

Pricing: [pricing/5400.html](http://www.crmagnetics.com/pricing/5400.html)



CR5410
.79" Window

See page 35 for typical applications

Part Numbers

CR5410 - ±5 Vac/dc output

Add suffix for input range

.79" Window

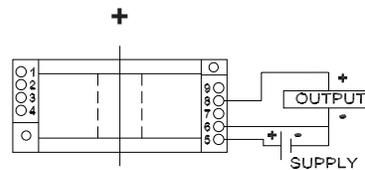
20	-	±20 A ac/dc
30	-	±30 A ac/dc
50	-	±50 A ac/dc
75	-	±75 A ac/dc
100	-	±100 A ac/dc
150	-	±150 A ac/dc
300	-	±300 A ac/dc

AC/DC Hall Effect Current Transducer

Specifications

Basic Accuracy:.....	1.0%	Supply Voltage:.....	24 Vdc ±10%
Thermal Drift:.....	500 PPM/°C	Frequency Range:.....	DC - 4 KHz
Operating Temperature:.....	0°C to +50°C	Output:.....	±5 Vac/DC
Insulation Voltage:.....	2500 Vdc	Output Load:.....	2 K Ω or greater
MTBF:.....	Greater than 100 K hours		

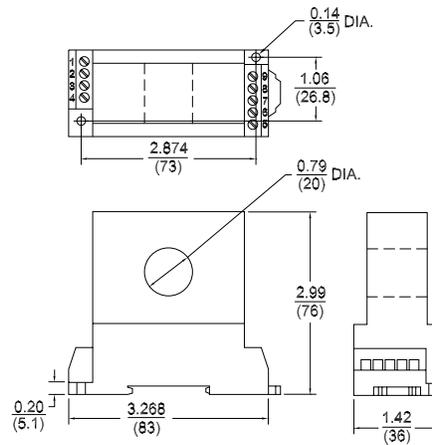
Connection Drawing



CR5410

±5 Vac/DC Output

Outline Drawing



inch (mm)



DC Current Transducer

DIN RAIL / PANEL MOUNT

The **CR5200** Series, DC Current Transducers are designed to provide a DC signal which is proportional to a DC sensed current. These devices are designed for direct current only, targeting them towards general and daily applications. The ranges 2 to 10 Amp utilize an advanced Magnetic Modulator technology and the ranges 20 amps and above utilize Hall Effect technology.

Applications

- Battery chargers and systems
- DC motor drives
- Power supply management
- Mobile applications

Features

- Closed loop sensing for accuracy
- 35mm DIN rail or panel mount
- 0 - 5 Vdc or 4 - 20 mA DC outputs
- Non-contact DC current sensing
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

Pricing: [pricing/5200.html](http://www.crmagnetics.com/pricing/5200.html)



2 to 10 Adc input
.51" Window



20 to 300 Adc input
.79" Window

See page 34 for typical applications

Part Numbers

CR5210 - ± 5 Vdc output
CR5220 - 4 - 20 mA DC output

Add suffix for input range

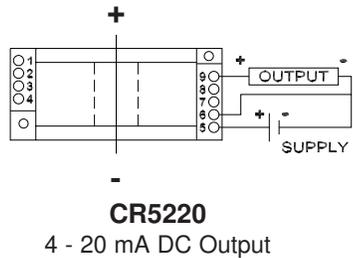
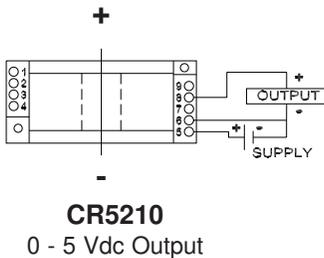
.51" Window		.79" Window	
2	- 0-2 Adc	20	- 0-20 Adc
5	- 0-5 Adc	30	- 0-30 Adc
10	- 0-10 Adc	50	- 0-50 Adc
		75	- 0-75 Adc
		100	- 0-100 Adc
		150	- 0-150 Adc
		300	- 0-300 Adc

DC Current Transducer

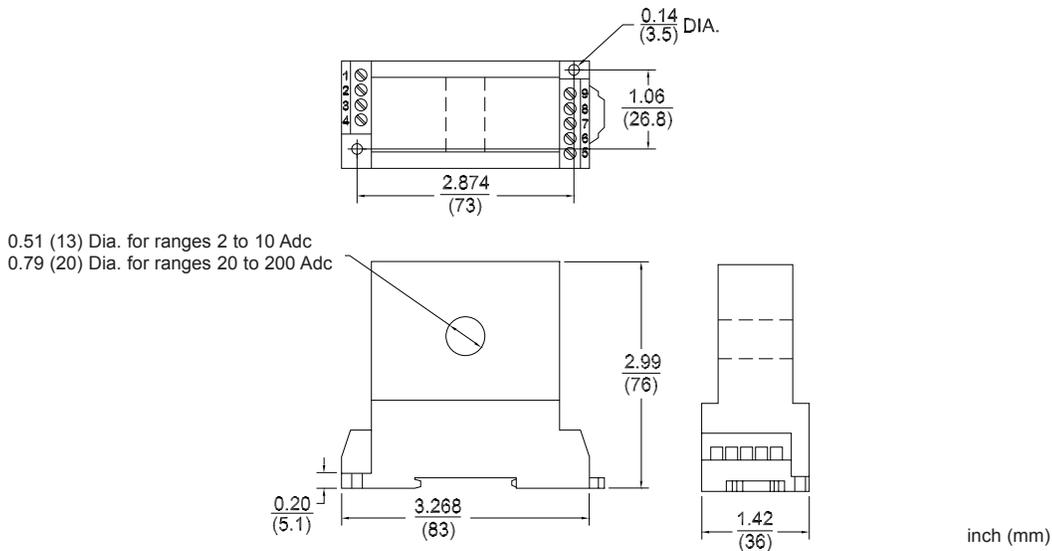
Specifications

Basic Accuracy:..... 1.0 % Thermal Drift:..... 500 PPM/°C Operating Temperature:..... 0°C to +50°C Response Time: 250 ms. max.,0-90% FS Insulation Voltage:..... 2500 Vdc	Supply Voltage:..... 24 Vdc ±10% Frequency Range:..... DC only MTBF:..... Greater than 100 K hours Output Load:.....0-5 Vdc..... 2 K or greater 4-20 mA DC..... 0 - 300Ω
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Connection Drawing



Outline Drawing





True RMS AC Voltage Transducer

DIN RAIL / PANEL MOUNT, TRUE RMS

The **CR4500** Series, true RMS Voltage Transducers and Transmitters are designed for applications where AC voltage waveforms are not purely sinusoidal. More precise and accurate than other devices, these units are ideal in chopped wave and phase fired control systems.



CR4510 CR4520
Single Phase



CR4550 CR4560
CR4570 CR4580
Three Phase

Regulatory Agencies

- Approved to UL3111-1, First Edition, Amendment 2
- Approved to CAN/CSA-C22.2, No. 1010.1-92
- Meets requirement of IEC 61010-1 and BS EN 61010-1

Applications

- Phase fired controlled devices
- Quickly varying voltage supplies
- Chopped waveform drivers
- Harmonic voltages

Features

- 35mm DIN rail mount or panel mount
- Available with 0-5 Vdc or 4-20 mA DC outputs
- 24 Vdc powered
- Highest precision available
- Outputs isolated from inputs
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

- Pricing: [pricing/4500.html](http://www.crmagnetics.com/pricing/4500.html)

Part Numbers

- CR4510** - Single Phase with 0 to 5 Vdc Output
- CR4520** - Single Phase with 4 - 20 mA DC Output
- CR4550** - 3-Phase 3-Wire with 0 to 5 Vdc Output
- CR4560** - 3-Phase 3-Wire with 4 - 20 mA DC Output
- CR4570** - 3-Phase 4-Wire with 0 to 5 Vdc Output
- CR4580** - 3-Phase 4-Wire with 4 - 20 mA DC Output

Add suffix for input range

- 50** - 0-50 Vac
- 150** - 0-150 Vac
- 250** - 0-250 Vac
- 500** - 0-500 Vac *

Other Ranges Available

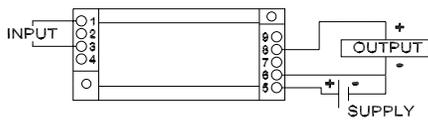
* not UL recognized

True RMS AC Voltage Transducer

Specifications

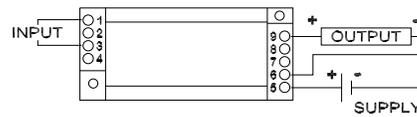
Basic Accuracy:.....	0.5%	Supply Voltage:.....	24 Vdc \pm 10%
Calibration:.....	True RMS sensing	Frequency Range:.....	20 Hz - 5 KHz
Thermal Drift:.....	500 PPM/ $^{\circ}$ C	Cleaning:.....	Water-dampened cloth
Operating Temperature:.....	0 $^{\circ}$ C to +60 $^{\circ}$ C	MTBF:.....	Greater than 100 K hours
Installation Category:.....	CAT II	Output Load:.....	0-5 Vdc - 2 K Ω or greater 4-20 mA dc - 0 to 300 Ω
Polution Degree:.....	2	Relative Humidity:....	80% for temperatures up to 31 $^{\circ}$ C and decreasing linearly to 50% at 40 $^{\circ}$ C
Response Time:	250 ms		
Altitude:.....	2000 meter max.		
Insulation Voltage:.....	2500 Vdc		

Connection Drawings



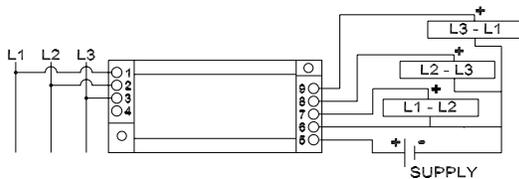
CR4510

Single Phase - 0 - 5 Vdc Output



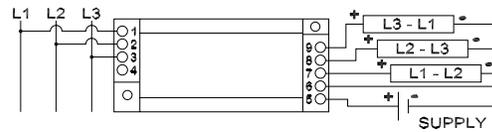
CR4520

Single Phase - 4 - 20 mA DC Output



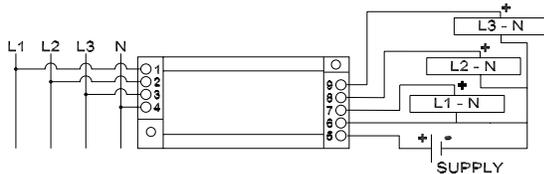
CR4550

3 Phase, 3 Wire - 0 - 5 Vdc Output



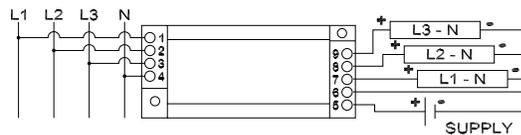
CR4560

3 Phase, 3 Wire - 4-20 mA DC Output



CR4570

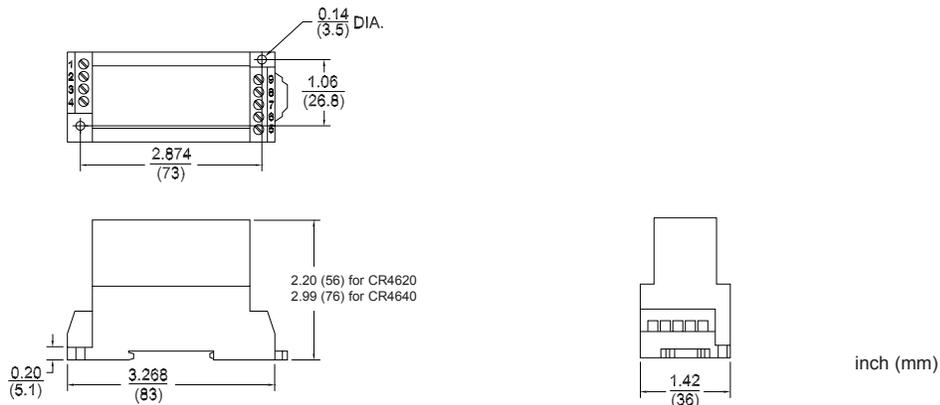
3 Phase, 4 Wire - 0 - 5 Vdc Output



CR4580

3 Phase - 4 Wire - 4 - 20 mA DC Output

Outline Drawing





3-Phase AC Voltage Transmitter

PANEL MOUNT RUGGED CONDITION, AVERAGE SENSING

The **CR4730** Series, AC Voltage Transmitters are expanded scale instruments designed to accurately measure three-phase AC voltages. Each model produces three discrete 4-20 mA DC signals which are proportional to each three-phase AC voltage.



CR4730

CR4731

Applications

- Sense phase loss
- Use in power calculations and applications
- Use in feed-forward motor drive controls

Features

- Permanently calibrated and sealed for rugged environments
- Fully isolated outputs and inputs
- Expanded scale allows more accurate monitoring of small variances
- Available in line-to-line and line-to-neutral models

Internet Resources <http://www.crmagnetics.com/>

Pricing: pricing/4730.html

Application Sheet: pdf/ancr4730-1.pdf

Scaling

PART NUMBERS	APPLICATION	NOMINAL VOLTAGE RANGE	INPUT VOLTAGE RANGE	INPUT BURDEN (MAX)	TRANSFER FUNCTION $I_{\text{LOOP MA DC}} =$
CR4730-120	Line-to-line	120 V	90 V to 150 V	0.1 VA @ 240 V	$\frac{E_{\text{IN}} - 75}{3.75}$
CR4730-480 (Dual Range)	Line-to-line	240 V	180 V to 300 V	0.1 VA @ 265 V	$\frac{E_{\text{IN}} - 150}{7.5}$
		480 V	360 V to 600 V	0.1 VA @ 530 V	$\frac{E_{\text{IN}} - 300}{15}$
CR4731-120	Line-to-neutral	120 V	90 V to 150 V	0.1 VA @ 150 V	$\frac{E_{\text{IN}} - 75}{3.75}$
CR4731-277	Line-to-neutral	277 V	180 V to 300 V	0.1 VA @ 300 V	$\frac{E_{\text{IN}} - 150}{7.5}$

E_{IN} = Volts RMS

Part Numbers

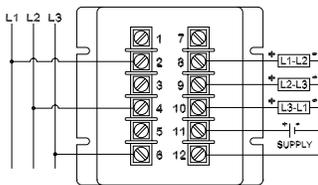
- CR4730-120** 3 Phase, 3 Wire, Line to Line, 120 Vac Nominal
CR4730-480 3 Phase, 3 Wire, Line to Line, 240/480 Vac Nominal, Dual Range
CR4731-120 3 Phase, 4 Wire, Line-to-Neutral, 120 Vac Nominal
CR4731-277 3 Phase, 4 Wire, Line-to-Neutral, 277 Vac Nominal

3-Phase AC Voltage Transmitter

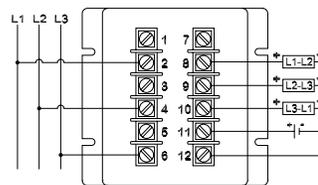
Specifications

Nominal Input Voltages:..... 120, 240, 277 & 480 Vac	Frequency:..... 50/60 Hz
Accuracy:..... $\pm 0.5\%$ Full-Scale (FS)	Max. Continuous Input Voltage: ... 600 V
Ripple On Output:..... Less than 1%	Operating Temperature Range: ... -30°C to +60°C
Calibrated Signal Out:..... 4 - 20 mA DC	Storage Temperature Range:..... -50°C to +85°C
Temperature Coefficient:..... $\pm 0.03\%/^{\circ}\text{C}$	Reverse Polarity Protection:..... Yes
Supply Voltage:..... 24 Vdc $\pm 10\%$	Load Resistance:..... 0-600 Ω
Response Time:..... 1.50 sec. max., 10 - 90% FS	Shipping Weight:..... Approx: 1.3 Pounds (.59 kg)

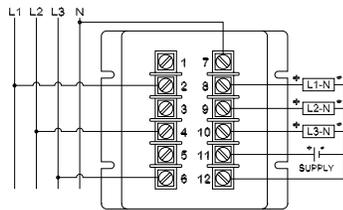
Connection Drawings



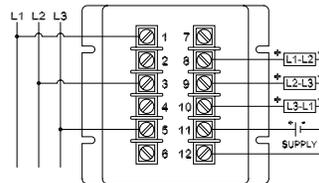
CR4730-120
3 Phase, 3 Wire
120 VL-L



CR4731-120 **CR4731-277**
3 Phase, 4 Wire 3 Phase, 4 Wire
120 VL-N 277 VL-N



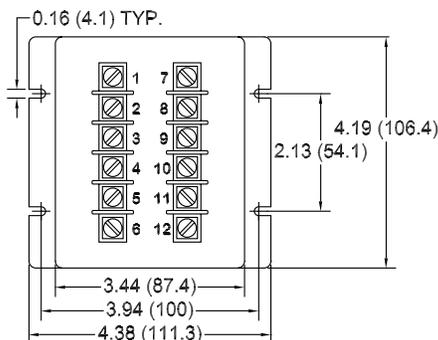
180-300 VL-L Connection



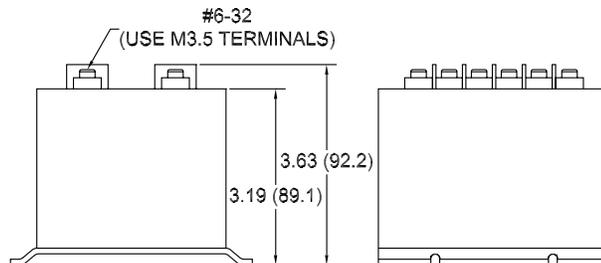
360-600 VL-L connection

CR4730-480
3 Phase, 3 Wire

Outline Drawing



Top View



Side View

inch (mm)



Loop-Powered AC Voltage Transmitter

4-20 mA DC LOOP POWERED, AVERAGE SENSING

The **CR4600** Series, Loop-Powered AC Voltage Transmitters are designed to provide a 4 - 20 mA DC output that is proportional to the average RMS AC voltage input. These devices are best suited for general applications, such as fixed frequency voltage supplies.



CR4620
One Element Transmitter



CR4640
Two Element Transmitter

Regulatory Agencies

- Approved to UL3111-1, First Edition, Amendment 2
- Approved to CAN/CSA-C22.2, No. 1010.1-92
- Meets requirement of IEC 61010-1 and BS EN 61010-1

Features

- Monitor for over/under voltage
- Sense phase loss
- Power monitoring
- Multi-point instrumentation needs

Applications

- 35 DIN Rail or Panel Mount
- Outputs isolated from inputs
- One or two element
- Connection diagram printed on case

Internet Resources <http://www.crmagnetics.com/>

- Pricing: [pricing/4600.html](http://www.crmagnetics.com/pricing/4600.html)

See page 35 for typical applications

Part Numbers

- CR4620** - Single Element with 4 - 20 mA DC output
- CR4640** - Two Element with 4 - 20 mA DC output

Add suffix for input range

- 50** - 0-50 Vac
- 150** - 0-150 Vac
- 250** - 0-250 Vac
- 500** - 0-500 Vac *

Other Ranges Available

* not UL recognized