

Current Transformers

NK Technologies offers current transformers (CTs) for use with power transducers, panel meters, and in two-piece installations, with transducers and switches to extend ranges for high amperage/large conductor applications.

Features:

- 1 A, 5 A or 0–333 mV secondary outputs
- Split-core or solid-core case
- Agency approved
- 5 A secondary ratios available from 50 A to 3000 A and higher

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CT-MS & CT-LS SERIES

1 A & 5 A Secondary Current Transformers

1 A and 5 A Secondary Current Transformers offer a compact, cost-effective means of measuring primary current. These current transformers provide an easy-to-install method to measure AC current, producing a 0–1 A or 0–5 A output proportional to the current flowing through the sensing window. Both the CT-MS and the CT-LS series offer a larger-than-average sensing window and a split-core design for easy installation.

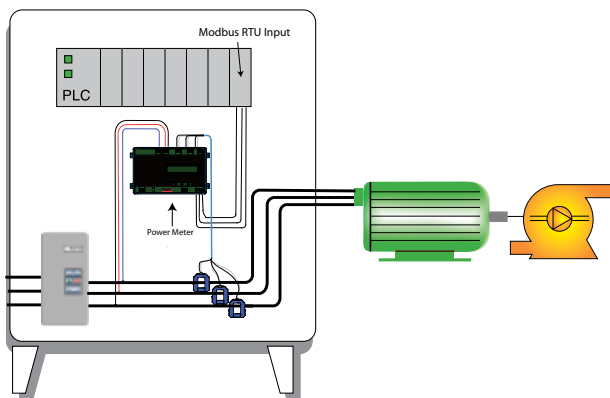
Current Transformer Features

- Split-core case for convenient installation over large wires or bus bars.
- 1 A and 5 A secondary CTs are compatible with standard power monitors and panel meters designed for 1 A or 5 A input.
- Larger sensing windows:
MS Series aperture measures 2.22" x 1.19" and measures current from 0–150 to 0–800 A.
LS Series aperture measures 3.49" x 2.36" and measures current from 0–800 to 0–1600 A.
- Plated terminals for reliability.
- UR recognized file E475131. Meets ANSI/IEEE C57.13 and IEEE C57.13.2.

Current Transformer Applications

- Serves as current input for use with APT and APN series KW transducers.
- Saves space in control panels by remotely locating the sensing of the current closer to the load.
- The current transformer secondary can be connected to the NK CTC-05A-420-24L-DIN to produce a loop-powered, 4–20 mA signal proportional to the current through the CT.

Power-Pump Load Monitoring



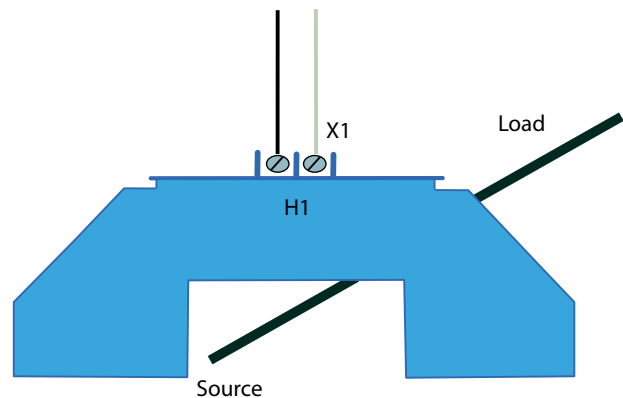
CT-MS Series



CT-LS Series

Connecting a Current Transformer

A current transformer (CT) should never be energized (AC current through the sensing window) without a load connected to the output terminals. Best practice is to terminate the current transformer secondary on a terminal block with the ability to short between two points before extending the leads to the load. If it is ever necessary to remove the load from the CT while it is or could become energized, a shorting bar can be placed between the secondary loads, as shown in the drawing below. This will allow the load to be removed safely.



OEMs

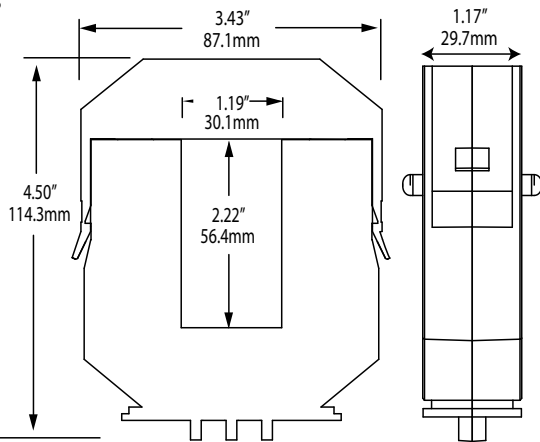
Test & Evaluation Units for OEMs

Free program expedites evaluation process. See page 3 for details.

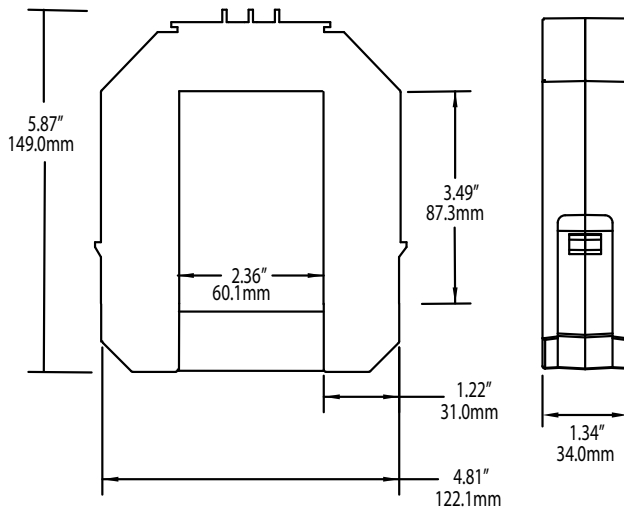


Current Transformer Dimensions

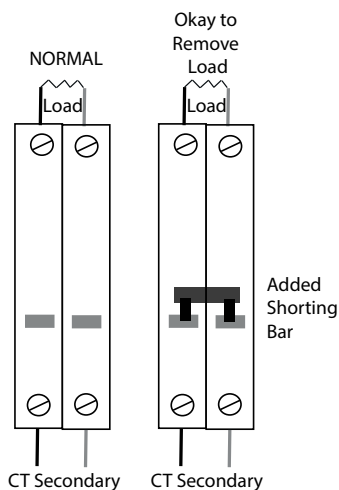
CT-MS



CT-LS



Current Transformer Connections



Current Transformer Specifications



Power Supply	None, self-powered			
Current Range	<ul style="list-style-type: none"> CT-MS: 0–150 through 0–800 A CT-LS: 0–800 through 0–1600 A 			
Output Signal	0–1 A or 0–5 A (AC)			
Frequency	50–400 Hz			
Primary Circuit Voltage	600 VAC			
Accuracy	<ul style="list-style-type: none"> 200–1600 A models: $\pm 1\%$ (10–100% of range) to 50°C 150 A model: $\pm 1.5\%$ (10–100% of range) to 50°C 			
Linearity	0.5% (10–100% of range)			
Thermal Rating	1.0 @ 30°C			
Listings	UL/cUL, CE			
Weight	CT-MS Series		CT-LS Series	
	150	<0.75 lbs.	800	2.0 lbs.
	200	<0.75 lbs.	1000	2.2 lbs.
	300	<0.75 lbs.	1200	2.3 lbs.
	400	<0.75 lbs.	1400	2.3 lbs.
	500	<0.75 lbs.	1600	2.4 lbs.
	600	<0.75 lbs.		
	800	<0.75 lbs.		
Allowable Burden	CT-MS Series		CT-LS Series	
	1 A Secondary		5 A Secondary	
	Ratio	Burden	Ratio	Burden
	150:1	1.0 VA	800:1	16.0 VA
	200:1	1.0 VA	1000:1	16.0 VA
	300:1	1.0 VA	1200:1	16.0 VA
	300:5	4.5 VA	1400:1	16.0 VA
	400:1	1.0 VA	1600:5	12.5 VA
	500:1	2.0 VA		
	600:1	2.5 VA		
	800:1	2.0 VA		

Current Transformer Ordering Information

Sample Model Number: CT-0800-5-LS

Current transformer with 800:5 ratio allowable burden, 5 A secondary output, and large sensing window.

CT – (1) (2) (3)

(1) Model

CT-MS Models	
0150	150 ratio
0200	200 ratio
0300	300 ratio
0400	400 ratio
0500	500 ratio
0600	600 ratio
0800	800 ratio

CT-LS Models	
0800	800 ratio
1000	1000 ratio
1200	1200 ratio
1400	1400 ratio (1 A only)
1600	1600 ratio (5 A only)

(2) Output Signal

1	0–1 A secondary
5	0–5 A secondary

(3) Case Style

MS	Medium sensing window
LS	Large sensing window



Test & Evaluation Units for OEMs

Free program expedites evaluation process. See page 3 for details.

CTRC SERIES

AC Current Transformer

ProteCT™ Type 333 mVAC Output

CTRC AC Current Transformers monitor circuits up to 2000 A and produce a safe, low voltage output proportional to the RMS current value. This output is designed as an input to a power monitor or transducer, replicating the AC wave shape with phase angle resolution better than 2 degrees. The flexible coil design allows the sensor to be installed over multiple conductors or bus assemblies easily. The cable requires very little space to fit between adjacent phase conductors. The design eliminates the magnetically permeable core of standard current transformers while providing excellent isolation, sensing only the magnetic field of the phase inside the loop.

Current Transformer Applications

Power Monitoring

- Accurate representation of current without the weight or hazards created by 5 A secondary current transformers.

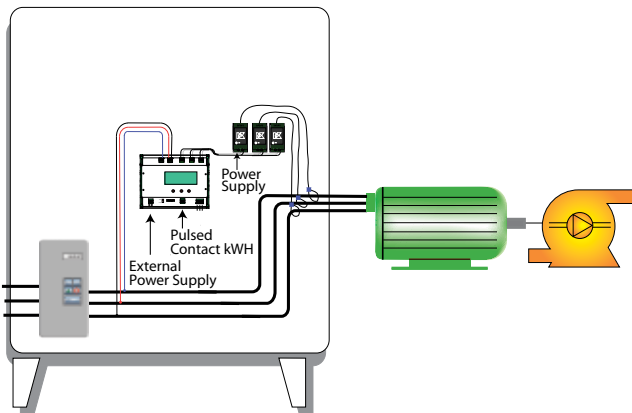
Individual Machines

- Measure power use for cost allocation.
- Detect voltage sags and spikes.

Monitor Entire Building Power Usage

- Locate unneeded power consumption.

Monitoring Power Usage of a Motor Driven Pump



Current Transformer Features

333 mVAC Output

- Specifically designed for connection to power monitors and transducers.
- Safe, with no need for shorting blocks.

24 VAC or DC Powered

- Supply and Output are optically isolated.

Factory Calibrated

- Reduces field calibration errors.
- Coils matched with signal conditioning.

DIN Rail Mounted Case*

- Compact size requiring very little panel space.
- Simple snap fit to standard rails.

UL/cUL and CE Approved

- Accepted worldwide.

*For information on the DIN rail accessories kit, see page 140.

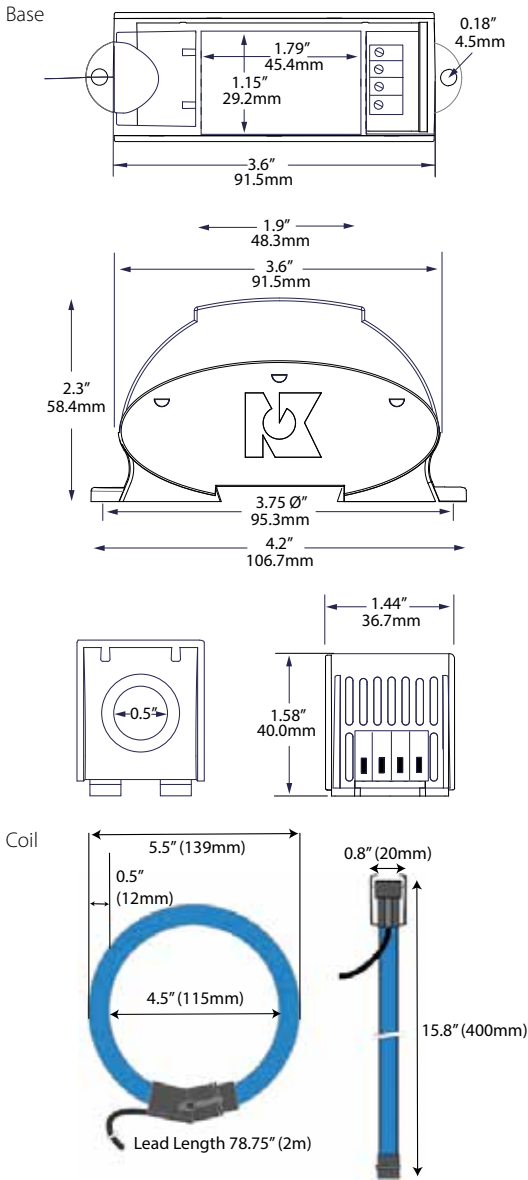
- For additional Application Examples, go to www.nktechnologies.com/applications

OEMs

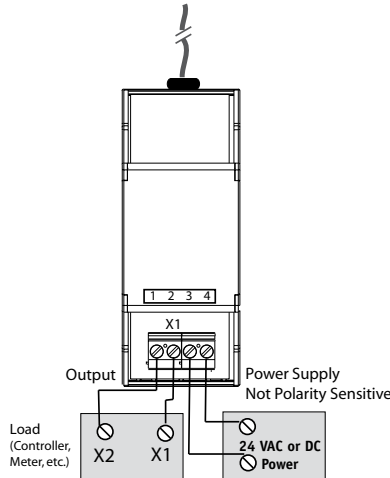
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AC Current Transducer Dimensions



Current Transformer Connections



Current Transformer Specifications



Power Supply	24 VAC/DC (12–36 V)
Power Consumption	<2 VA
Output	333 mVAC
Response Time	2 ms
Range	<ul style="list-style-type: none"> • 0–300 • 0–500 • 0–1000 • 0–1500 • 0–2000
Accuracy	±1% FS
Isolation Voltage	Designed for UL 508 1270 VAC, tested to 5000 VAC
Frequency Range	40–400 Hz
Sensing Aperture	4.25" (115 mm) ID
Case	UL94 V-0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL/cUL, CE

Current Transformer Ordering Information

Sample Model Number: CTRC-333-500-24U-D
Flexible loop current sensor, 0–500 A AC produces 0–333 mVAC, DIN rail mounting case.

CTRC – (1) 3 3 3 – (2) – (3) 2 4 U – (4) D

(1) Output Type	
333	333 mVAC
(2) Full Scale Range	
300	300 A AC
500	500 A AC
1000	1000 A AC
1500	1500 A AC
2000	2000 A AC
(3) Power Supply	
24U	24 VAC or DC
(4) Case Style	
D	DIN rail mounting



ProteCT™ SERIES

mV Current Transformers

ProteCT™ Series Current Transformers are intended for use with APT and APN Series power transducers. ProtectCT™ low voltage output current transformers provide easy sensing of current on three-phase applications with the added safety of a 333 mV output secondary. Available in split-core case as standard.

Current Transformer Applications

- Tailored for use with AP Series AutoPhase KW/KWH transducers.
- Self-powered design works well in data logger applications.
- Excellent response time for power monitoring applications.

Current Transformer Features

0.333 VAC Output Secondary

- Unique low voltage output allows safe opening of transformer secondary, protecting installers from shock hazards found on traditional 5 A CTs.

Eliminates Need for “Shorting Blocks”

Standard Split-core Case Design

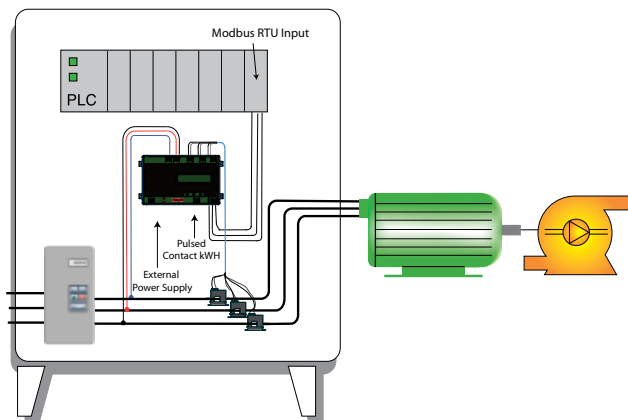
- Snap-close case speeds installation and eases retrofits for existing jobs.
- Eliminates need to power down or disconnect system to install CT, maximizing up time.

High-Impact, UL94 V-0 Rated Polymer Housing

- No exposed metal parts on assembled ProteCT™ devices.

Choose From Three ID's: 0.85", 1.25", 2.0"

Monitor Watts Used by a Pump



- For additional Application Examples, go to www.nktechnologies.com/applications

OEMs

Test & Evaluation Units for OEMs

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Current Transformer Dimensions

in (mm)	NKP-075-xxx	CTP-125-xxx-SP	CTP-200-xxx-SP
Width	2.25 (57.2)	3.25 (82.55)	4.75 (120.65)
Height	2.40 (61.0)	3.35 (85.09)	5.00 (127.5)
Depth	1.18 (30.0)	1.00 (25.4)	1.20 (30.48)
Window	0.85 (22.0)	1.25 (31.75)	2.00 (50.80)

Current Transformer Specifications

Power Required	None, self-powered
Accuracy	±1% NKP, ±2% CTP models
Output	0–0.333 VAC
Phase Angle	<1 degree, 2 degrees @ 50% range
Response Time	<1 ms
Isolation Voltage	600 VAC
Max. Primary Voltage	5000 VAC (insulated conductor)
Max. Inrush Current	300% FS (6 sec. duration)
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing

Current Transformer Ordering Information

Model	Input Range	1.25" (31.75 mm) Window	
0.85" (22 mm) Window		CTP-125-101-SP	0–100 A
NKP-075-005SP	0–5 A	CTP-125-151-SP	0–150 A
NKP-075-015SP	0–15 A	CTP-125-201-SP	0–200 A
NKP-075-030SP	0–30 A	CTP-125-251-SP	0–250 A
NKP-075-050SP	0–50 A	CTP-125-301-SP	0–300 A
NKP-075-070SP	0–70 A	CTP-125-401-SP	0–400 A
NKP-075-101SP	0–100 A	CTP-125-601-SP	0–600 A
NKP-075-151SP	0–150 A	2.0" (50.8 mm) Window	
NKP-075-201SP	0–200 A	CTP-200-601-SP	0–600 A
		CTP-200-801-SP	0–800 A
		CTP-200-102-SP	0–1000 A
		CTP-200-122-SP	0–1200 A
		CTP-200-152-SP	0–1500 A

AMPFlasher™ ACI SERIES

AC Current Indicators

The AMPFlasher™ ACI Series Current Indicator is a compact, inexpensive, easy-to-use LED ring which slips onto a conductor to give a flashing indication of current flow. Ideal for use in control panels, or wherever confirmation of current flow is desired. AMPFlasher™ current indicators are a cost-effective way to detect live conductors and see current flow to fans, heaters, pumps, lighting or other powered devices.



AC Current Indicator Applications

- Quick visual status of electric motor load.
- Identify open heater circuit connection.
- Provide panel mounted indication of current draw on monitored load.
- Confirmation of operation for critical lighting or equipment.

AC Current Indicator Features

Low Sensitivity Turn-on Point

- Detect currents as low as 0.5 A with a single conductor pass, eliminates the need to wrap conductors through multiple times to increase sensitivity.

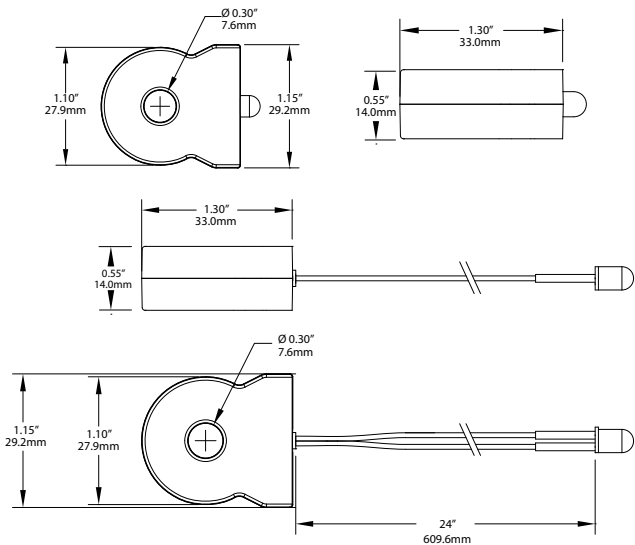
High Visibility Flashing LED

- Flashing LEDs perform better in daylight conditions and from multiple angles than constant on LEDs.

Choice of Outputs

- LED output standard, optional LED on 24" pigtails for remote indication.

AC Current Indicator Dimensions



Note: Panel opening should be 0.267 to 0.273", panel thickness 0.32 to 0.125"

AC Current Indicator Specifications



Output/Indication	<ul style="list-style-type: none"> • Standard: LED (flashing, red) • Optional: 24" Pigtails for Remote LED
Indicating Range	0.5 A–100 A
LED On	<500 mA (factory set)
Maximum Primary Circuit Voltage	300 VAC
Dimensions	<ul style="list-style-type: none"> • Overall: 1.15"W x 0.55"D x 1.30"H (29.2 mm W x 14.0 mm D x 33.0 mm H) • Aperture: 0.30" (7.6 mm) ID • Pigtails: 24" (609.6 mm)
Case	UL94 V-0 Flammability Rated
Mounting	Slides directly onto monitored conductor
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Frequency Response	50–400 Hz
Listings	UL/cUL, CE

AC Current Indicator Ordering Information

Sample Model Number: ACI-0.5-L.
Current Indicator with 0.5 A sensitivity and red flashing LED.

ACI – (1) 0 . 5 – (2)

(1) Sensitivity Level

0.5	500 mA
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(2) Indication/Output

L	LED (flashing, red)
P	24" Pigtails for remote LED



DIN RAIL KITS

DIN Kit or DIN-2 Adapter Kit

DIN Rail Kits provide a convenient method to facilitate the mounting of NK Technologies' products that can be DIN rail mounted. The kits can also be used to mount other products to a panel as needed.

DIN Rail Kit Features

DIN Rail Kit

- Includes two end stops and a bichromated galvanized steel rail.
- High mechanical strength and corrosion resistance.
- Slotted design allows for attachment to most suitable surfaces.
- Rail can be cut in field to desired length.



DIN Rail Kit

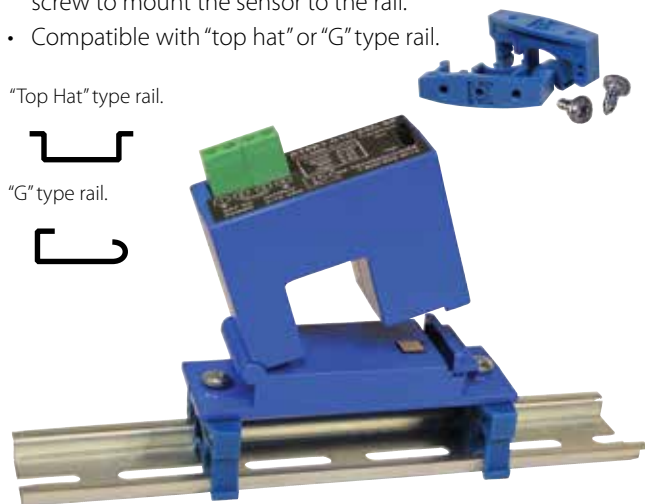
DIN-2 Adapter Kit

- Includes two plastic brackets and attachment screw to mount the sensor to the rail.
- Compatible with "top hat" or "G" type rail.

"Top Hat" type rail.



"G" type rail.



ATPR with DIN-2 Adapter Kit



AGL Ground Fault Sensor

DIN Rail Kit Specifications

DIN Rail Kit

Rail Material	Rail is galvanized steel; 35 mm x 7.5 mm x 175 mm
Rating	Conforms to EN50035, 50022, DIN 46277

DIN-2 Adapter Kit

Rail Compatibility	"Top Hat" Type: 35 x 15 mm, 35 x 7.5 mm "G" Type 32 x 15 mm
Bracket Material	UL94V-0 unfilled nylon
Temp Range	-4 to 122°F (-20 to 50°C)

DIN Rail Kit Ordering Information

Part Number for DIN Rail Kit: DINKIT

Part Number for DIN-2 Adapter Kit: DIN-2



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