Honeywell

CSN Series
CSNS300
Closed loop current sensor

Features

- Small footprint
- Increased measuring range in small package
- Measures dc, ac and impulse currents
- Flexible mounting
- Large primary conductor hole
- Three connection styles
- Operating temperature -40 °C to 85 °C
- High accuracy

Typical applications

- Variable speed drives
- Overcurrent protection
- Power supply systems
- Frequency converters
- Uninterruptible power supplies UPS
- Robotics
- Battery management systems
- Welding equipment

This new series of closed loop current sensor offers a flexible solution to measuring currents up to ± 600 A. The sensors are small and have a large primary through hole to accept either a cable or a variety of different busbar sizes. The sensors can be mounted vertically or horizontally and come with connection options of integral Molex connector, pcb mounting pins, or a flying lead.

The sensors are closed loop devices and based on the principle of Hall effect and null balance method. The output from the current sensor is the balancing current that is the perfect image of the primary current reduced by the number of secondary turns at any time. The current can be expressed as a voltage by passing it through a load resistor.

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

Technical information

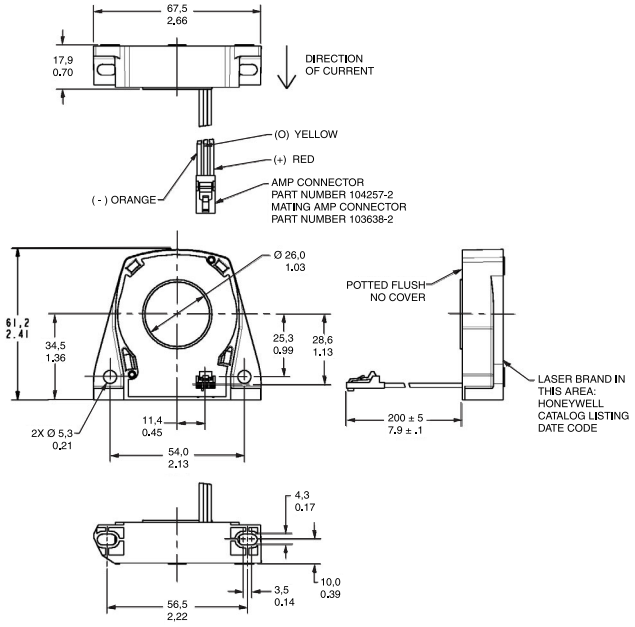
Electrical			
Nominal current (In):		300 A.t rms	
Measuring range (dc or ac peak):		0 to ± 600 A.t	
Measuring resistance (@ +70 °C) [1]:		Rm min.	Rm max.
with ± 15 V	@ ± 200 A.t rms max.	5 Ohm	95 Ohm
	@ ± 300 A.t rms max.	5 Ohm	50 Ohm
Nominal analogue output current:			
	@ 300 A	150 mA	
Turns ratio:		1/2000	
Accuracy @ 25 °C:		max. ± 0.5 % @ In	
Supply voltage:		± 15 Vdc (± 5 %)	
Galvanic isolation:		6 kV rms/50 Hz/1 minute	
Accuracy - dynamic performance			
Zero offset current at 25 °C		< ± 0.2 mA	
Thermal drift of offset current 0 °C to 70 °C		< ± 0.4 mA	
Linearity		< ± 0.1 %	
Response time		< 500 ns	
Bandwidth		dc to 150 kHz	
di/dt		> 100 A/us	
General data			
Operating temperature		-40 °C to 85 °C	
Storage temperature		-40 °C to 90 °C	
Current consumption		10 mA plus output current	
Secondary internal resistance (@ 70 °C)		34 Ohm	
Sensor housing		Insulated plastic case	
Connection	CSNS300M	Molex connector	
	CSNS300P	PCB connection	
	CSNS300F	Flying lead and Molex connector	

Note

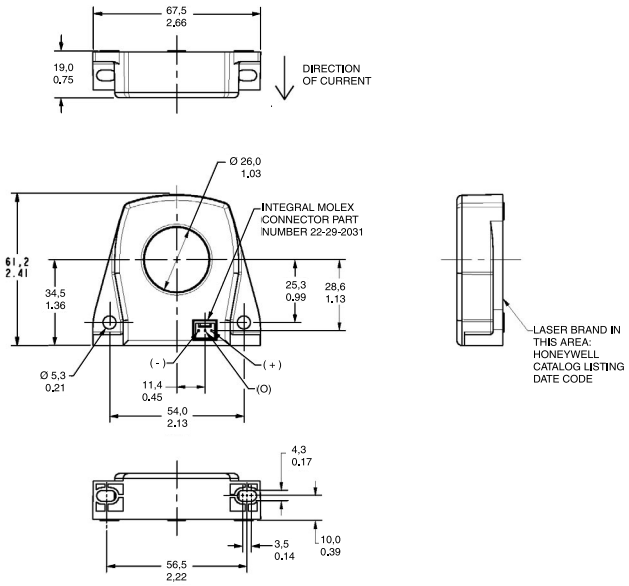
[1] Values to be confirmed at temperature

Mounting drawings in mm and (inches)

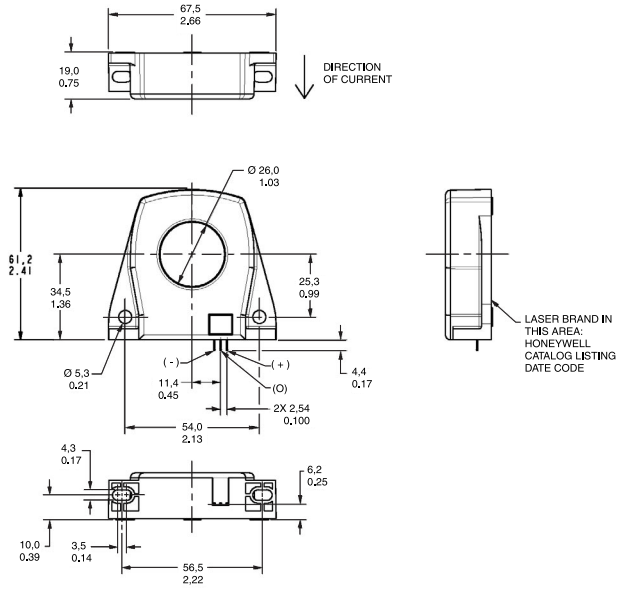
CSNS300F



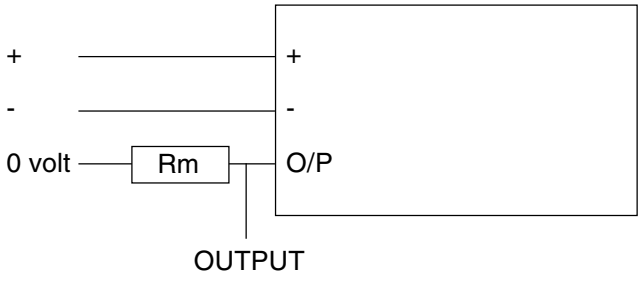
CSNS300M



CSNS300P



Electrical wiring diagram



Termination

+ supply voltage +15 V

- supply voltage -15 V

O/P measured output signal

Order guide

Description	Catalogue Listing
300 A closed loop current sensor	
Integral Molex connector	CSNS300M
PCB Connection	CSNS300P
Flying lead and Molex connector	CSNS300F