

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.

CSNS300 Series Current Sensor

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
	@ ± 300 A.t rms max.	5 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	$< \pm 0.2$ mA
Thermal drift of offset current 0 °C to 70 °C	$< \pm 0.4$ mA
Linearity	$< \pm 0.1$ %
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

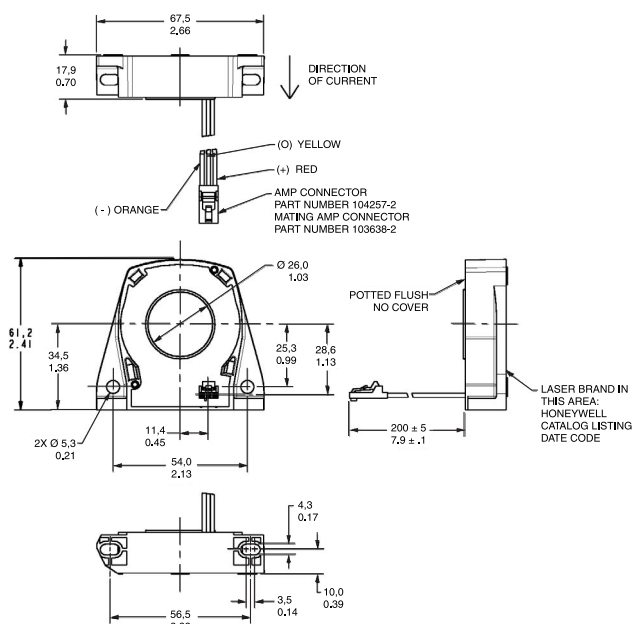
Note

^[1] Values to be confirmed at temperature

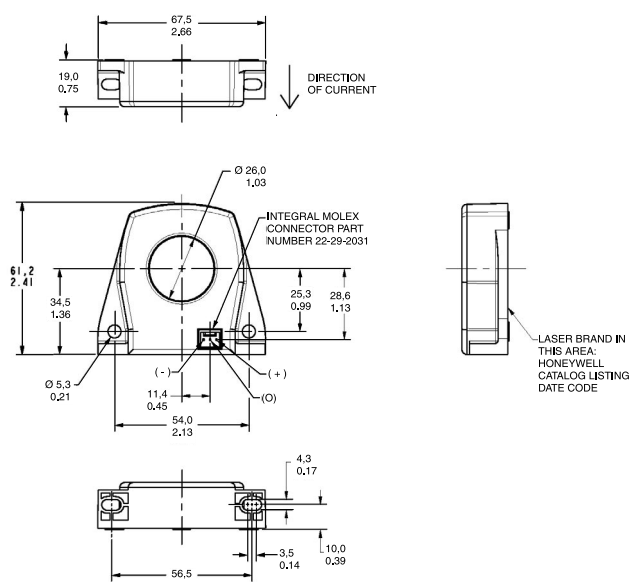
CSNS300 Series Current Sensor

Mounting drawings in mm and (inches)

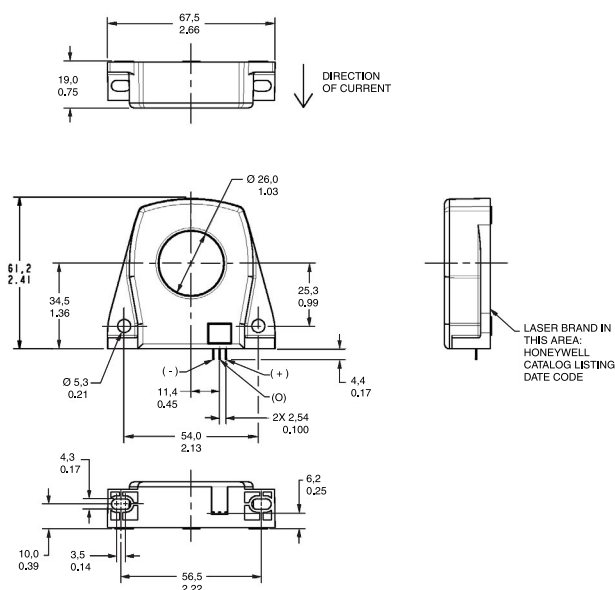
CSNS300F



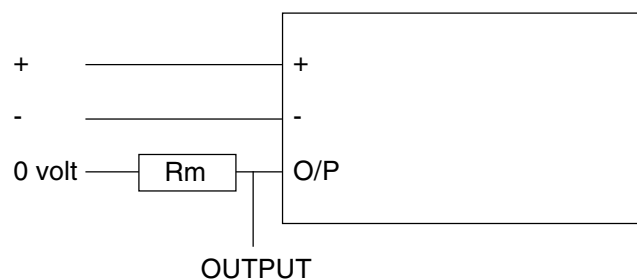
CSNS300M



CSNS300P



Electrical wiring diagram



Termination

+ supply voltage +15 V

- supply voltage -15 V

O/P measured output signal

Order guide

Description

300 A closed loop current sensor

Integral Molex connector

PCB Connection

Flying lead and Molex connector

Catalogue Listing

CSNS300M

CSNS300P

CSNS300F

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective material and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during that period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and **is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance, personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change at any time without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

Sales and Service

Honeywell serves its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or name of the nearest Authorised Distributor, contact your local sales office or:

E-MAIL: info.sc@honeywell.com

INTERNET: www.honeywell.com/sensing

ASIA PACIFIC

Control Products

Asia Pacific Headquarters

Phone: +(65) 6355-2828
Fax: +(65) 6445-3033

Australia

Honeywell Limited
Phone: +(61) 2-9370-4500
FAX: +(61) 2-9370-4525
Toll Free 1300-36-39-36
Toll Free Fax: 1300-36-04-70

China – PRC - Beijing

Honeywell China Inc.
Phone: +(86-10) 8458-3280
Fax: +(86-10) 8458-3102

China – PRC - Shanghai

Honeywell China Inc.
Phone: +(86-21) 6237-0237
Fax: +(86-21) 6237-1237

China - Hong Kong S.A.R.

Honeywell Ltd.
Phone: +(852) 2953-6412
Fax: +(852) 2953-6767

Indonesia

Honeywell Indonesia Pte Ltd.
Phone: +(62) 21-535-8833
FAX: +(62) 21-5367 1008

India

TATA Honeywell Ltd.
Phone: +(91) 20 6870 445/446
Fax: +(91) 20 681 2243/ 687 5992

Japan

Honeywell Inc
Phone: +(81) 3 5440 1425
Fax: +(81) 3 5440 1368

South Korea

Honeywell Korea Co Ltd
Phone: +(822) 799-6167
Fax: +(822) 792-9013

Malaysia

Honeywell Engineering Sdn Bhd
Phone: +(60-3) 7958-4988
Fax: +(60-3) 7958-8922

New Zealand

Honeywell Limited
Phone: +(64-9) 623-5050
Fax: +(64-9) 623-5060
Toll Free (0800) 202-088

Philippines

Honeywell Systems (Philippines) Inc.
Phone: +(63-2) 636-1661 / 1662
Fax: +(63-2) 638-4013

Singapore

Honeywell South East Asia
Phone: +(65) 6355-2828
Fax: +(65) 6445-3033

Thailand

Honeywell Systems (Thailand) Ltd.
Phone: +(662) 693-3099
FAX: +(662) 693-3085

Taiwan R.O.C.

Honeywell Taiwan Ltd.
Phone: +(886-2) 2245-1000
FAX: +(886-2) 2245-3242

EUROPE

Austria

Honeywell Austria GmbH
Phone: +(43) 1 727 80 366/246
FAX: +(43) 1 727 80 337

Belgium

Honeywell SA/NV
Phone: +(32) 2 728 2522
FAX: +(32) 2 728 2502

Bulgaria

Honeywell EOOD
Phone: +(359) 2 79 40 27
FAX: +(359) 2 79 40 90

Czech Republic

Honeywell spol. s.r.o.
Phone: +(420) 2 6112 3469/3424
FAX: +(420) 2 6112 3461

Denmark

Honeywell A/S
Phone: +(45) 39 55 55 55
FAX: +(45) 39 55 55 58

Finland

Honeywell OY
Phone: +(358) 9 3480101
FAX: +(358) 9 34801375

France

Honeywell SA
Phone: +(33) 1 60 19 80 40
FAX: +(33) 1 60 19 81 73

Germany

Honeywell AG
Phone: +(49) 69 8064 444
FAX: +(49) 69 8064 442

Hungary

Honeywell Kft.
Phone: +(36 1) 451 4300
FAX: +(36 1) 451 4343

Italy

Honeywell S.p.A.
Phone: +(39) 02 92146 450/456
FAX: +(39) 02 92146 490

The Netherlands

Honeywell B.V.
Phone: +(31) 20 565 69 11
FAX: +(31) 20 565 66 00

Norway

Honeywell A/S
Phone: +(47) 66 76 20 00
FAX: +(47) 66 76 20 90

Poland

Honeywell Sp. zo.o
Phone: +(48) 22 606 0900
FAX: +(48) 22 606 0901

Portugal

Honeywell Portugal Lda
Phone: +(351 21) 424 50 00
FAX: +(351 21) 424 50 99

Romania

Honeywell Bucharest
Phone: +(40) 1 2110076
FAX: +(40) 1 2103375

Commonwealth of Independent States (CIS)

Z.A.O. Honeywell
Phone: +(7 095) 796 98 36
FAX: +(7 095) 796 98 93

Slovak Republic

Honeywell s.r.o.
Phone: +(421 7) 58247 403/400
FAX: +(421 7) 58247 415

South Africa (Republic of)

Honeywell Southern Africa
Honeywell S.A. Pty. Ltd
Phone: +(27) 11 805 1201
FAX: +(27) 11 805 1504

Spain

Honeywell S.A.
Phone: +(34) 91 313 6100
FAX: +(34) 91 313 6129

Sweden

Honeywell AB
Phone: +(46) 8 775 55 00
FAX: +(46) 8 775 56 00

Switzerland

Honeywell AG
Phone: +(41) 1 855 24 40
FAX: +(41) 1 855 24 45

Turkey

Honeywell Turkey A.S.
Phone: +(90) 216 5756620
FAX: +(90) 216 5756637

United Kingdom

Honeywell Control Systems Ltd
Phone: +(44) 1698 481481
FAX: +(44) 1698 481276

Mediterranean & African Distributors

Honeywell SpA
Phone: +(39) 2 921 46 232
FAX: +(39) 2 921 46 233

Middle East Headquarters

Honeywell Middle East Ltd.
Phone: +(9712) 443 2119
FAX: +(9712) 443 2536

NORTH AMERICA

Canada

Honeywell LTD
Phone: 1-800-737-3360
FAX: 1-800-565-4130

USA

Honeywell Control Products, International Headquarters
Phone: 1-800-537-6945
1-815-235-6847
FAX: 1-815-235-6545
E-mail: info.sc@honeywell.com

LATIN AMERICA

Argentina

Honeywell S.A.I.C.
Phone: +(54-11) 4383-3637
FAX: +(54-11) 4325-6470

Brazil

Honeywell do Brasil & Cia
Phone: +(55-11) 7266-1900
FAX: +(55-11) 7266-1905

Chile

Honeywell Chile, S.A.
Phone: +(56-2) 233-0688
FAX: +(56-2) 231-6679

Columbia

Honeywell Columbia, S.A.
Phone: +(57-1) 623-3239/3051
FAX: +(57-1) 623-3395

Ecuador

Honeywell S.A.
Phone: +(593-2) 981-560/1
FAX: +(593-2) 981-562

Mexico

Honeywell S.A. de C.V.
Phone: +(52) 55 5259-1966
FAX: +(52) 55 5570-2985

Puerto Rico

Honeywell Inc.
Phone: +(809) 792-7075
FAX: +(809) 792-0053

Venezuela

Honeywell CA
Phone: +(58-2) 238-0211
FAX: +(58-2) 238-3391

This publication does not constitute a contract between Honeywell and its customers. The contents may be changed at any time without notice. It is the customer's responsibility to ensure safe installation and operation of the products. Detailed mounting drawings of all products illustrated are available on request.
© Honeywell 2002. All rights reserved.

Honeywell

Honeywell Automation and Control Products

www.honeywell.com/sensing

Newhouse Industrial Estate

Motherwell, Lanarkshire ML1 5SB

Scotland, UK