

## Model 2102

### Small Flanged Reaction Torque Sensor



#### DESCRIPTION

Model 2102 small flanged reaction torque sensor is designed for installation between test pieces such as motors, switches, axles, or shafts and their mounting plate. These models operate and are calibrated in both directions. Nickel-plated alloy steel construction enhances durability in harsh, industrial environments. These models have no moving parts and utilize four bonded

strain gages on a special machined portion of the transducer to achieve a maximum non-linearity of 0.1% over a wide dynamic range. Typical applications include tire braking, motor dynamometers, friction-skid testing, and twist measurement. 50 in-lb to 1000 in-lb capacities.

#### FEATURES

- 50 in-lb to 1000 in-lb capacities
- 0.1 % non-linearity and hysteresis
- Reaction measurements designed to eliminate speed limitations
- Reduced friction error
- No maintenance of slip rings, bearings, or brushes
- Compact, "low mass" physical style

Safety considerations: It would be unsafe to operate Honeywell torque sensors and load cells beyond static overload or ultimate extraneous load limits as defined in the glossary of terms or, when applicable, higher than maximum speed. When in doubt, consult factory. Honeywell is not responsible for any property damage or personal injury which may result because of the misapplication of the transducer.

# Model 2102

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Torque range	50, 100, 200, 500, 1000 lb-in
Non-linearity	±0.1 % of rated output
Hysteresis	±0.1 % of rated output
Repeatability	±0.05 % of rated output
Output @ rated capacity	2.5 mV/V (nominal)

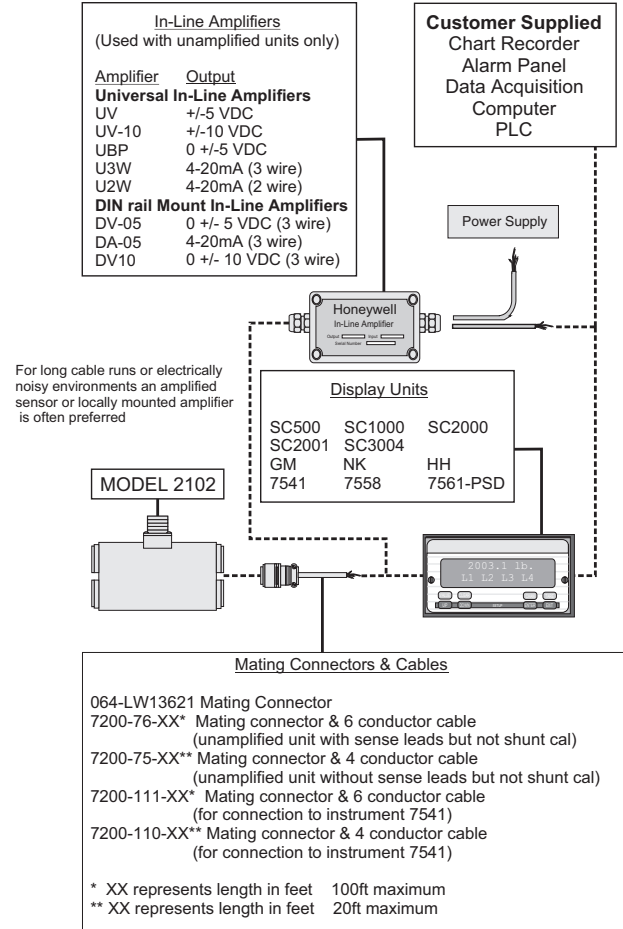
## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-54 °C to 93 °C [-65 °F to 200 °F]
Temperature, compensated	21 °C to 77 °C [70 °F to 170 °F]
Temperature effect, zero	±0.002 %/of rated output °F
Temperature effect, output	±0.002 %/of reading °F

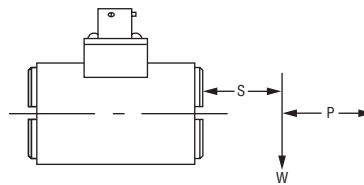
## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Excitation (maximum)	20 Vdc or Vac RMS
Insulation resistance	> 5000 mOhm @ 50 Vdc
Bridge resistance	350 ohm (nominal)
Number of bridges	1
Zero balance	±1.0 % of rated output

## TYPICAL SYSTEM DIAGRAM



## LOAD CARRYING CAPACITY



W - weight

W x S - overhung moment

S - distance to W

Do not exceed moment (W x S) or shear (W), whichever value is attained first

P = thrust

## Small Flanged Reaction Torque Sensor

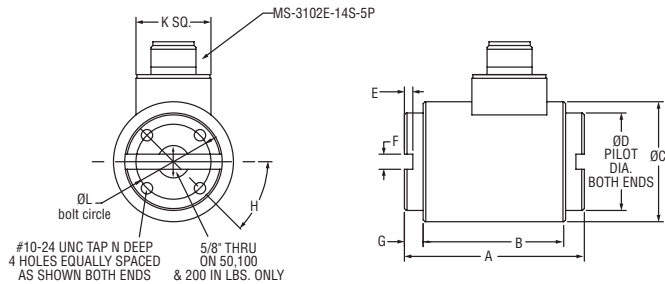
### MECHANICAL SPECIFICATIONS

Model	Capacity Nm [lb-in]	Overload Nm [lb-in]	Torsional stiff- ness Nm/rad [lb-in/rad]	Max. overhung moment WxS Nm [lb-in]	Max. shear W N [lb]	Max. thrust P N [lb]
2102-50	5 [50]	7.5 [75]	266 [2350]	5.50 [50]	57.82 [13]	886 [200]
2102-100	10 [100]	20 [150]	760 [6725]	11 [100]	88.96 [20]	1236 [280]
2102-200	20 [200]	30 [300]	2124 [18800]	22 [200]	115.65 [26]	1760 [400]
2102-500	55 [500]	85 [750]	8315 [73600]	27.50 [250]	2224 [500]	2200 [500]
2102-1K	115 [1000]	170 [1500]	14348 [127000]	56 [500]	3558 [800]	2900 [660]

Torsional stiffness given for sensor less shaft extension(s).

### MOUNTING DIMENSIONS

A cm [in]	B cm [in]	C cm [in]	D cm [in]	E cm [in]	F cm [in]	G cm [in]	H cm [in]	K cm [in]	L cm [in]
7,62 [3]	6,03 [2.38]	5,08 [2]	4,130 [1.626]	0,36 [0.14]	0,640 [0.252]	0,79 [0.31]	45° [45°]	3,18 [1.25]	3,18 [1.25]



For reference only

# Model 2102

# Small Flanged Reaction Torque Sensor

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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.

 **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 datasheet 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.**

## Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office. To learn more about Honeywell's test and measurement products, call **+1-614-850-5000**, visit **[www.honeywell.com/sensotec](http://www.honeywell.com/sensotec)**, or e-mail inquiries to **[info.tm@honeywell.com](mailto:info.tm@honeywell.com)**

Sensing and Control  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422  
**[www.honeywell.com](http://www.honeywell.com)**

# Honeywell