

Honeywell



Product Range Guide

Optical Sensors

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Encoder detectors are monolithic ICs that consist of two adjacent diodes, amplifiers, & Schmitt trigger output stages. Transmissive encoders contain an IR LED facing a dual output encoder in a plastic-molded housing, and the detector generates two output signals. Potential applications include printer and copiers, metering, data storage systems, motion control, scanning, medical equipment, and more.



Series	HLC2701	HLC2705
Type	side-looking	side-looking
Output option	speed/direction (A-B output)	speed/direction (tach output)
Resolution	0,03 mm [0.009 in]	0,46 mm [0.018 in]
Package style	PCB mount	PCB mount
Tach pulse width	-	3 μs to 20 μs
Tach pulse level, active	-	0.4 V
Output rise/fall time	100 ns	-
Supply voltage	4.5 V to 5.5 V	4.5 V to 5.5 V
Mounting configuration	through-hole	through-hole
Termination style	0,51 mm [0.020 in] sq leads lead length 19,05 mm [0.75 in]	0,51 mm [0.020 in] sq leads lead length 19,05 mm [0.75 in]
Measurements	2,06 mm H x 5,84 mm W x 23,57 mm L [0.081 in H x 0.23 in W x 0.928 in L]	2,06 mm H x 5,84 mm W x 23,57 mm L [0.081 in H x 0.23 in W x 0.928 in L]
Features	TTL/LSTTL/CMOS compatible; inverting logic option; linear or rotary encoder applications; mechanically and spectrally matched to SEP8506 and SEP8706	TTL/LSTTL/CMOS compatible; on-chip quadrature logic; linear or rotary encoder applications; mechanically and spectrally matched to SEP8506 and SEP8706



Series	HOA0901	HOA0902
Type	sensor	sensor
Output option	speed/direction (A-B output)	speed/direction (tach output)
Resolution	0,03 mm [0.009 in]	0,46 mm [0.018 in]
Package style	pc mount	pc mount
Tach pulse width	-	3 μs to 20 μs
Tach pulse level, active	-	0.4 V
Output rise/fall time	100 ns	-
Infrared emitter trigger current	< 15 mA	< 15 mA
Supply voltage	4.5 V to 5.5 V	4.5 V to 5.5 V
Mounting configuration	dual mounting tabs (-012 or no tab PCB mount) (-011)	dual mounting tabs (-012 or no tab PCB mount) (-011)
Termination style	0,51 mm [0.020 in] sq leads min. lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads min. lead length 12,7 mm [0.5 in]
Measurements	10,64 mm H x 24,38 mm W x 23,34 mm L [0.419 in H x 0.96 in W x 0.919 in L]	10,64 mm H x 24,38 mm W x 23,34 mm L [0.419 in H x 0.96 in W x 0.919 in L]
Features	direct TTL interface; inverting logic option; internal temperature compensation	direct TTL interface; internal temperature compensation



Infrared Sensors | Detectors: Photodarlington and Photodiode

Photodarlington detectors provide non-linear, high gain analog output. Often used for lower available light inputs, greater detecting distances, or when higher current output is needed. Photodiode detectors offer very linear, high-speed analog output. Often used in encoders and data transfer applications.



Series	SD1410(L)	SD2410	SD3410	SD5410
Type	photodarlington	photodarlington	photodarlington	photodarlington
Package style	coaxial, leaded case	miniature pill	TO-46 flat window	TO-46 dome lensed
Angular response	24°	48°	90°	12°
Light current minimum	0.6 mA	1 mA	0.6 mA	2 mA
Reverse breakdown voltage	-	-	-	-
Dark current	250 nA	250 nA	250 nA	250 nA
Rise/fall time	75 µs typ.	75 µs typ.	75 µs typ.	75 µs typ.
Mounting configuration	through-hole	through-hole	through-hole	through-hole
Termination style	0,46 mm [0.018 in] round leads min. lead length 25,0 mm [1.0 in]	1,57 mm [0.062 in] hole	0,46 mm [0.018 in] round leads min. lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads min. lead length 12,7 mm [0.5 in]
Measurements	Ø1,57 mm x 25,4 mm L [Ø0.062 in x 1.0 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	Ø5,56 mm x 12,70 mm L [Ø0.219 in x 0.50 in L]	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]
Features	higher typical output currents; wide sensitivity and temperature ranges; mechanically and spectrally matched to SE1450 and SE1470 emitters	wide operating temperature and sensitivity ranges; can be directly mounted to PC boards; mechanically and spectrally matched to SE2460 and SE2470 emitters	wide operating temperature and sensitivity ranges; mechanically and spectrally matched to SE3450/5450, SE2455/5455, and SE3470/5470 emitters	wide operating temperature and sensitivity ranges; mechanically and spectrally matched to SE3450/5450, SE2455/5455, and SE3470/5470 emitters

Note: Product photos not to scale; may be enlarged to show detail.





SDP8105	SDP8106	SD2420	SDP8276	SD1420(L)	SMD2420
photodarlington	photodarlington	photodiode	photodiode	photodiode	photodiode
T1	side-detecting	miniature pill	side-detecting	coaxial, leaded case	surface mount, glass lens
20°	50°	48°	50°	24°	28°
0.5 mA	1 mA	7 μ A	4 μ A	5 μ A	6 μ A
-	-	50 V	50 V	50 V	50 V
250 nA	250 nA	20 nA max.	50 nA max.	5 nA max.	5 nA max.
75 μ s typ.	75 μ s typ.	50 ns	50 ns	50 ns	20 ns
through-hole	through-hole	through-hole	through-hole	through-hole	SMT
0,51 mm [0.020 in] sq leads min. lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads min. lead length 12,7 mm [0.5 in]	1,57 mm [0.062 in] hole	0,51 mm [0.020 in] sq leads min. lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads min. lead length 25,0 mm [1.0 in]	SMT
\varnothing 5,08 mm x 12,7 mm L [\varnothing 0.20 in x 0.5 in L]	2,28 mm H x 4,45 mm W x 18,43 mm L [0.09 in H x 0.175 in W x 0.725 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	\varnothing 1,57 mm x 25,4 mm L [\varnothing 0.062 in x 1.0 in L]	2,54 mm H x 2,1 mm W x 3,81 mm L [0.10 in H x 0.083 in W x 0.15 in L]
consistent optical properties; mechanically and spectrally matched to SEP8505 and SEP8705 emitters	mechanically and spectrally matched to SEP8506 and SEP8706 emitters	wide operating temperature range; can be directly mounted on PC boards; mechanically and spectrally matched to SE2460 and SE2470 emitters	linear response; enhanced response time; internal visible light rejection filter; mechanically and spectrally matched to SEP8506 and SEP8706 emitters	wide operating temperature range; mechanically and spectrally matched to SD1420, SD1440, and SD1410	robust ceramic package with glass lensed optics; upright or inverted mounting capability; compatible with automated solder processes; tape and reel available

Infrared Sensors | Emitters: Metal and Plastic/Ceramic Packages

Metal-packaged emitters are potentially used in commercial/industrial analog output applications and offer non-linear, fast-to-medium speed response with a glass lens that provides superior optics. Plastic/ceramic-packaged emitters are also potentially used in commercial/industrial applications when a consistent infrared light source is required.



Metal	SE1450(L)	SE1470(L)	SE2460
Type	GaAs	AlGaAs	GaAs
Package style	coaxial, lead case	coaxial, lead case	miniature pill
Beam angle	24°	24°	18°
Power output	0.7 mW min.	1.1 mW/cm ² to 4.5 mW/cm ²	1 mW min.
Output wavelength	935 nm	880 nm	935 nm
Spectral bandwidth	50 nm	80 nm	50 nm
Forward voltage	1.6 V	1.8 V	1.6 V
Mounting configuration	through-hole	through-hole	through-hole
Termination style	0,46 mm [0.018 in] round leads lead length 25,0 mm [1.0 in]	0,46 mm [0.018 in] round leads lead length 25,0 mm [1.0 in]	1,57 mm [0.062 in] hole
Measurements	Ø1,57 mm x 25,4 mm L [Ø0.062 in x 1.0 in L]	Ø1,57 mm x 25,4 mm L [Ø0.062 in x 1.0 in L]	2,24 mm H x 1,57 mm W x mm L [0.088 in H x in W x 0.125 in L]
Features	wide operating temperature range; mechanically and spectrally matched to SD1420, SD1440, and SD1410		wide operating temperature range; can be directly mounted on PC boards; mechanically and spectrally matched to SD2410, SD2420, and SD2440

Note: Product photos not to scale; may be enlarged to show detail.



Plastic/ Ceramic	SEP8505	SEP8506
Type	GaAs	GaAs
Package style	T1	side emitting
Beam angle	15°	50°
Power output	2 mW/cm ² to 4 mW/cm ²	0.33 mW/cm ² to 0.52 mW/cm ²
Output wavelength	935 nm	935 nm
Spectral bandwidth	50 nm	50 nm
Forward voltage	1.5 V	1.5 V
Mounting configuration	through-hole	through-hole
Termination style	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]
Measurements	Ø5,08 mm x 19,05 mm L [Ø0.20 in x 0.625 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]
Features	consistent on-axis optical properties; mechanically and spectrally matched to SDP8405 and SDP8105	mechanically and spectrally matched to SDP8406, SDP8106, and SDP8000/8600

Note: Product photos not to scale; may be enlarged to show detail.



SE2470	SE3455	SE3470	SE5455	SE5470
AlGaAs	GaAs	AlGaAs	GaAs	AlGaAs
miniature pill	TO-46 flat window	TO-46 flat window	TO-46 dome lensed	TO-46 dome lensed
18°	90°	90°	20°	20°
6 mW/sr min.	5.4 mW min.	10.5 mW min.	4.8 mW min.	2.6 mW/cm ² min.
880 nm	935 nm	880 nm	935 nm	880 nm
80 nm	50 nm	80 nm	50 nm	80 nm
1.8 V	1.7 V	1.9 V	1.7 V	1.9 V
through-hole	through-hole	through-hole	through-hole	through-hole
1,57 mm [0.062 in] hole	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]
2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	Ø5,56 mm x 12,70 mm L [Ø0.219 in x 0.50 in L]	Ø5,56 mm x 12,70 mm L [Ø0.219 in x 0.50 in L]	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]
wide operating temperature range; can be directly mounted on PC boards; mechanically and spectrally matched to SD2420, SD2440, and SD2410	wide operating temperature range; may be used with high-pulsed current applications; mechanically and spectrally matched to SD3421/5421, SD3443/5443/5491, SD3410/5410, and SD5600			



SEP8705	SEP8706	SEP8736	SME2470
AlGaAs	AlGaAs	AlGaAs	AlGaAs
T1	side emitting	tight beam side looker	surface mount, glass lens
15°	50°	10°	24°
2.7 mW/cm ² to 7.8 mW/cm ²	0.45 mW/cm ² to 0.9 mW/cm ²	1.2 mW/cm ² to 3 mW/cm ²	0.6 mW/cm ² min.
880 nm	880 nm	880 nm	880 nm
80 nm	80 nm	80 nm	80 nm
1.7 V	1.7 V	1.7 V	1.5 V
through-hole	through-hole	through-hole	SMT
0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	SMT
Ø5,08 mm x 19,05 mm L [Ø0.20 in x 0.625 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	2,28 mm H x 4,45 mm W x 18,43 mm L [0.09 in H x 0.175 in W x 0.725 in L]	2,54 mm H x 2,1 mm W x 3,81 mm L [0.10 in H x 0.083 in W x 0.15 in L]
consistent optical properties; mechanically and spectrally matched to SDP8405 and SDP8105	mechanically and spectrally matched to SDP8406, SDP8106, and SDP8000/8600	enhanced coupling distance; mechanically and spectrally matched to SDP8436	robust ceramic package with glass lensed optics; mechanically and spectrally matched to SMD2420 and SMD2440; upright or inverted mounting; compatible with automated solder processes; tape and reel available

Detectors consist of a photodiode, amplifier, voltage regulator, Schmitt trigger, and output stage with a 10 kOhm pull-up resistor, open collector, or totem-pole output. IR LED sensors facing Optoschmitt detector in plastic molded housing – switching occurs when opaque object passes between emitter and detector. Digital output used for presence/absence, motion sensing and encoding.



Series	SD5600	SD5610	SD5620	SD5630
Type	detector	detector	detector	detector
Package style/housing	TO-46 dome lensed	TO-46 dome lensed	TO-46 dome lensed	TO-46 dome lensed
Package components	metal	metal	metal	metal
Angular response	12°	12°	12°	12°
Turn-on threshold irradiance	2.5 mW/cm ² max.	2.5 mW/cm ² max.	0.25 mW/cm ²	0.25 mW/cm ²
Output logic	buffer	inverter	buffer	inverter
Supply voltage (range)	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc
Output type	–	–	–	–
Rise/fall time	60 ns tr/15 ns tf typ.	60 ns tr/15 ns tf typ.	60 ns tr/15 ns tf typ.	60 ns tr/15 ns tf typ.
Propagation delay	5 μs typ.	5 μs typ.	5 μs typ.	5 μs typ.
Mounting configuration	through-hole	through-hole	through-hole	through-hole
Termination style	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]
Measurements	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]	Ø5,56 mm x 17,77 mm L [Ø0.219 in x 0.688 in L]	Ø5,56 mm x 17,77 mm L [Ø0.219 in x 0.688 in L]
Features	6° nominal acceptance angle; enhanced noise immunity; TTL/LSTTL/CMOS compatible; buffer logic	6° nominal acceptance angle; enhanced noise immunity; TTL/LSTTL/CMOS compatible; inverting logic	6° nominal acceptance angle; enhanced noise immunity; TTL/LSTTL/CMOS compatible; buffer logic; two sensitivity ranges	6° nominal acceptance angle; enhanced noise immunity; TTL/LSTTL/CMOS compatible; inverting logic; two sensitivity ranges

First six products are detectors; final four products are sensors.

Note: Product photos not to scale; may be enlarged to show detail.





SDP8600	SDP8610	HOA096X/ HOA097X	HOA696X/ HOA697X	HOA698X/ HOA699X	HOA7720/ HOA7730
detector	detector	sensor	sensor	sensor	sensor
side-detecting	side-detecting	transmissive/opaque	transmissive/opaque	transmissive/opaque	transmissive
plastic	plastic	plastic	plastic	plastic	plastic
50°	50°	-	-	-	-
2.5 mW/cm ² max.	2.5 mW/cm ² max.	-	-	-	-
buffer	inverter	buffer/inverter	buffer/inverter	buffer/inverter	inverter
4.5 Vdc to 12 Vdc	4.5 Vdc to 12 Vdc	4.5 V to 10 V	4.5 V to 7 V	4.5 V to 12 V	4.5 V to 5.5 V
-	-	10 kOhm pull-up	open collector/totem-pole 10 kOhm pull-up	open collector/totem-pole 10 kOhm pull-up	open collector/totem-pole
60 ns tr/15 ns tf typ.	60 ns tr/15 ns tf typ.	60 ns tr/15 ns tf	70 ns tr/70 ns tf	70 ns tr/70 ns tf	70 ns tr/70 ns tf
5 μs typ.	5 μs typ.	5 μs	5 μs	5 μs	5 μs
through-hole	through-hole	N, L, T, P mounting options	N, L, T, P mounting options	N, L, T, P mounting options	mounting tabs
0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 10,8 mm [0.4 in]	0,51 mm [0.020 in] sq leads lead length 10,8 mm [0.4 in]	26 AWG wire leads lead length 610 mm [26 in]	integral 3-pin connector
1,52 mm H x 4,45 mm W x 18,43 mm L [0.06 in H x 0.175 in W x 0.725 in L]	1,52 mm H x 4,45 mm W x 18,43 mm L [0.06 in H x 0.175 in W x 0.725 in L]	11,05 mm H x 24,89 mm W x 21,23 mm L [0.44 in H x 0.98 in W x 0.835 in L]	11,05 mm H x 24,89 mm W x 21,23 mm L [0.44 in H x 0.98 in W x 0.835 in L]	11,05 mm H x 24,89 mm W x 21,23 mm L [0.44 in H x 0.98 in W x 0.835 in L]	6,0 mm H x 6,4 mm W x 31,5 mm L [0.236 in H x 0.27 in W x 1.24 in L]
wide sensitivity ranges; TTL/ LSTTL/CMOS compatible; buffer logic; three different lead spacing arrangements	wide sensitivity ranges; TTL/ LSTTL/CMOS compatible; inverting logic; three different lead spacing arrangements	direct TTL interface; four mounting configurations; buffer or inverting logic	direct TTL interface; buffer or inverting logic; three device output options; four mounting configurations	direct TTL interface; buffer or inverting logic; three device output options; four mounting configurations	direct TTL interface; infrared emitter internally biased; no interface circuits required; inverting logic; totem-pole or open collector output options

Infrared Sensors | Phototransistors: Metal and Plastic Packages

Phototransistors are often used in commercial/ industrial analog output applications where a non-linear, fast-to-medium speed response is required. Metal-packaged phototransistors possess higher power dissipation, whereas plastic-packaged phototransistors provide lower cost.



Series	SD1440(L)*	SD2440	SD3443	SD5443
Type	metal	metal	metal	metal
Package style	coaxial, leded case	miniature pill	TO-46 flat window	TO-46 dome lensed
Angular response	24°	48°	90°	18°
Light current minimum	3 mA	7 mA	2 mA	8 mA
Peak response	880 nm	880 nm	880 nm	880 nm
Rise/fall time	15 μs typ.	15 μs typ.	15 μs typ.	15 μs typ.
Mounting configuration	through-hole	through-hole	through-hole	through-hole
Termination style	0,46 mm [0.018 in] round leads lead length 25,0 mm [1.0 in]	1,57 mm [0.062 in] hole	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]
Measurements	Ø1,57 mm x 25,4 mm L [Ø0.062 in x 1.0 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	Ø5,56 mm x 12,70 mm L [Ø0.219 in x 0.50 in L]	Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]
Features	wide sensitivity and operating temperature ranges; mechanically and spectrally matched to SE1450 and SE1470	wide sensitivity and operating temperature ranges; may be directly mounted to double-sided PC boards; mechanically and spectrally matched to SE2460 and SE2470	wide operating temperature range; external base connection for added control; enhanced sensitivity; mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470	

Note: Product photos not to scale; may be enlarged to show detail.





SD5491	SDP8405	SDP8406	SDP8436	SMD2440
metal	plastic	plastic	plastic	-
TO-18 dome lensed	T1	side detecting	tight beam sidelooker	ceramic surface mount, glass lens
12°	20°	50°	18°	28°
2 mA	12 mA	1.8 mA	7 mA	1.5 mA
880 nm	880 nm	880 nm	880 nm	880 nm
2 μs typ.	15 μs typ.	15 μs typ.	15 μs typ.	15 μs typ.
through-hole	through-hole	through-hole	through-hole	SMT
0,46 mm [0.018 in] round leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	SMT
Ø4,06 mm x 17,77 mm L [Ø0.160 in x 0.688 in L]	Ø5,08 mm x 19,05 mm L [Ø0.20 in x 0.625 in L]	2,24 mm H x 1,57 mm W x 3,18 mm L [0.088 in H x 0.062 in W x 0.125 in L]	2,38 mm H x 4,55 mm W x 18,4 mm L [0.09 in H x 0.18 in W x 0.73 in L]	2,54 mm H x 2,1 mm W x 3,81 mm L [0.10 in H x 0.083 in W x 0.15 in L]
fast response time; wide operating temperature range; external base connection for added control; enhanced sensitivity; mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470	consistent optical properties; wide sensitivity ranges; mechanically and spectrally matched to SEP8505 and SEP8705	wide sensitivity ranges; mechanically and spectrally matched to SEP8506 and SEP8706	enhanced coupling distance; internal visible light rejection filter; wide sensitivity ranges; mechanically and spectrally matched to SEP8736	robust ceramic package with glass lensed optics; mechanically and spectrally matched to SME2470; upright or inverted mounting; compatible with automated solder processes; tape and reel available

Reflective sensors are often used when unable to locate emitter and detector on opposing sides of an object, object is not opaque, or object presence/position detection required. Low-light rejection phototransistors provide high contrast ratio in reflective applications where unwanted background reflection may exist.



Series	HLC1395	HOA0149
Package style	miniature	PCB/chassis mount
Coupled current (I_c)	0.6 mA min.	1 mA min.
Forward current	10 mA	40 mA
Optimum point of response	1,02 mm [0.04 in]	3,80 mm [0.15 in]
Mounting configuration	PCB mount	PCB or 2,16 mm [0.085 in] dia mounting hole
Termination style	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 10,16 mm [0.4 in]
Target distance	1,02 mm [0.040 in]	3,81 mm [0.150 in]
Measurements	2,20 mm H x 4,45 mm W x 4,45 mm L [0.087 in H x 0.175 in W x 0.175 in L]	4,83 mm H x 17,78 mm W x 8,89 mm L [0.190 in H x 0.700 in W x 0.35 in L]
Features	diffused (unfocused) reflective sensor; side-looking plastic package; phototransistor output; infrared emitter and phototransistor detector in a single package; low profile	phototransistor output; focused for maximum response; low profile

Note: Product photos not to scale; may be enlarged to show detail.



Series	SDP8475-201	SDP8476-201
Package style	T-1	sidelooker
Angular response	20°	50°
Light current (min.)	4 mA	1 mA
Light current (max.)	14 mA	6 mA
Light current slope	4 mA/mW/cm ² to 14 mA/mW/cm ²	1 mA/mW/cm ² to 6 mA/mW/cm ²
Mounting configuration	through-hole	through-hole
Termination style	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]	0,51 mm [0.020 in] sq leads lead length 12,7 mm [0.5 in]
Measurements	Ø3,18 mm x 6,35 mm L [Ø0.125 in x 0.25 in L]	1,52 mm H x 4,45 mm W x 5,75 mm L [0.060 in H x 0.175 in W x 0.225 in L]
Features	low light level immunity; mechanically and spectrally matched to SEP8505 and SEP8705 infrared emitters	low level light immunity; mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Note: Product photos not to scale; may be enlarged to show detail.





HOA1180	HOA1397	HOA1405	HOA2498
chassis mount	PCB mount	PCB/chassis mount	PCB/chassis mount
0.16 mA min.	0.7 mA min.	0.8 mA min.	0.16 mA min.
30 mA	20 mA	30 mA	30 mA
12,7 mm [0.5 in]	1,27 mm [0.05 in]	5,08 mm [0.2 in]	12,7 mm [0.5 in]
mounting tab	PCB mount	mounting tab	mounting tab
28 AWG PVC insulated wire leads lead length 305 mm [12 in]	0,51 mm [0.020 in] sq leads lead length 2,98 mm [0.275 in]	0,51 mm [0.020 in] sq leads lead length 5,08 mm [0.2 in]	0,46 mm [0.018 in] dia leads lead length 19,05 mm [0.75 in]
12,7 mm [0.500 in]	1,27 mm [0.050 in]	5,08 mm [0.200 in]	12,7 mm [0.500 in]
6,35 mm H x 6,35 mm W x 15,88 mm L [0.25 in H x 0.25 in W x 0.625 in L]	4,95 mm H x 6,35 mm W x 4,95 mm L [0.195 in H x 0.25 in W x 0.195 in L]	5,33 mm H x 17,27 mm W x 23,11 mm L [0.210 in H x 0.680 in W x 0.911 in L]	6,35 mm H x 6,35 mm W x 15,88 mm L [0.25 in H x 0.25 in W x 0.625 in L]
glass lensed, focused for maximum response; choice of phototransistor or photodarlington output; enhanced sensitivity; wide operating range	diffused (unfocused) reflective sensors; choice of phototransistor or photodarlington output; low profile; unfocused	phototransistor output; focused; ambient light and dust protective filter	glass lensed, focused for maximum response; choice of phototransistor or photodarlington output; focused; wide operating temperature; employs metal-can packaged components

Infrared Sensors | Transmissive Sensors

Available in multiple package styles and mounting configurations, various slot widths, and aperture window sizes. Choice of phototransistor, photodarlington, or Optoschmitt output. Potential applications include printers/copiers, motion control, meters, data storage, scanning, automated transactions, and medical equipment.



Series	HOA1877	HOA825	HOA086X
Sensor aperture	1,52 mm [0.06 in] dia	1,52 mm [0.06 in] dia	1,52 mm x 1,27 mm [0.06 in x 0.05 in]
Slot width	9,53 mm [0.375 in]	4,19 mm [0.165 in]	3,18 mm [0.125 in]
Rise/fall time (typ.)	15 ns	15 ns	15 ns
Coupled current (Ic) min.	0.5 mA	0.5 mA	1 mA
Collector-emitter breakdown voltage (min.)	30 V	30 V	30 V
Mounting configuration	mounting tabs	N, L, T, P mounting options	N, L, T, P mounting options
Termination style	Ø0,46 mm [Ø0.018 in] leads lead length 9,53 mm [0.375 in]	0,51 mm [0.020 in] sq leads lead length 10,16 mm [0.4 in]	0,51 mm [0.020 in] sq leads lead length 10,16 mm [0.4 in]
Measurements (H x W x L)	7,62 mm x 31,75 mm x 15,88 mm [0.3 in x 1.25 in x 0.625 in]	6,35 mm x 22,86 mm x 10,31 mm [0.25 in x 0.90 in x 0.41 in]	11,05 mm x 24,89 mm x 10,18 mm [0.44 in x 0.98 in x 0.40 in]
Features	phototransistor or photodarlington output; wide operating temperature; high optical axis position	phototransistor output; four mounting configurations; plastic-molded components	phototransistor output; four mounting configurations; opaque or IR transmissive housings; plastic molded components

Note: Product photos not to scale; may be enlarged to show detail.





HOA1879

HOA1882

HOA088X

HOA1870

1,02 mm x 0,25 mm
[0.04 in x 0.01 in]

1,52 mm [0.06 in] dia

1,52 mm x 0,25 mm
[0.06 in x 0.01 in]

1,02 mm x 0,15 mm
[0.04 in x 0.006 in]

3,18 mm [0.125 in]

5,08 mm [0.20 in]

3,18 mm [1.25 in]

0,78 mm [0.07 in]

15 ns

15 ns

15 ns

15 ns

0.5 mA

1.8 mA

0.5 mA

0.3 mA

30 V

30 V

30 V

30 V

mounting tabs

pcb mount

N, L, T, P mounting options

mounting tab

0,51 mm [0.020 in] sq leads
lead length 7,62 mm [0.3 in]

0,51 mm [0.020 in] sq leads
lead length 7,62 mm [0.3 in]

26 AWG UL 1429 wire leads
lead length 610 mm [24 in]

22 AWG UL 1007 wire leads
lead length 457 mm [18 in]

6,36 mm x 24,38 mm x 10,8 mm
[0.25 in x 0.96 in x 0.425 in]

6,35 mm x 12,95 mm x 6,86 mm
[0.25 in x 0.51 in x 0.27 in]

11,05 mm x 24,89 mm x 10,18 mm
[0.44 in x 0.98 in x 0.40 in]

9,02 mm x 12,7 mm x 13,46 mm
[0.355 in x 0.5 in x 0.53 in]

phototransistor output; choice of detector aperture; dust protective housing; plastic-molded components

phototransistor or photodarlington output; compact package size; dust-protective cover; plastic-molded components

phototransistor output; four mounting configurations; opaque or IR transmissive housings

phototransistor or photodarlington output; plastic-molded components; narrow dual 0,15 mm [0.006 in] wide apertures over emitter and detector

Liquid Level Sensors

Incorporate the principle of total optical reflection to create a fast, accurate, reliable, and cost-effective solid state sensor with no moving parts. Used for the detection of liquid level or liquid leaks, and are designed to switch digital I/O, LEDs, coil relays, and incandescent lamp indicators. Potential applications include industrial, home appliances, food and beverage, and vending machines.



Series	LLE
Description	miniature sensors offering a variety of housing types (both plastic & metal)
Sensing tip	polysulphone
Housing	polysulphone, nickel-plated brass, stainless steel
Supply voltage range	5 Vdc to 12 Vdc
Supply current	5 mA
Output	normally open in air 40 mA max. (sink)
Termination	lead wires; UL1429-26 AWG, wire length 250 mm [9.84 in]
Seal washer	nitrile rubber, vamac rubber
Operating temperature range	-40°C to 125°C [-40°F to 257°F]
Measurements	19,0 mm H x 19,0 mm W x 12,4 mm L [0.75 in H x 0.75 in W x 0.49 in L]
Operating pressure	plastic: 5 bar [70 psi]; metal: 25 bar [350 psi]
Mounting thread	plastic: M12 x 1 or push-in; metal: 1/2 in BTSP
Features	variety of housing types; no moving parts; sinking output; microprocessor compatible; fast response

Note: Product photos not to scale; may be enlarged to show detail.





LLN

metal-housed sensors for use in high-temperature industrial applications (e.g., HVAC, generators) and military applications

polysulphone

stainless steel

10 Vdc to 40 Vdc

60 mA max.

normally open or normally closed in air
200 mA max. (sink)

3-pin Lumberg/Brad Harrison-type connector

fluorocarbon

-40°C to 125°C [-40°F to 257°F]

24,0 mm H x 24,0 mm W x 90,0 mm L
[0.95 in H x 0.95 in W x 3.54 in L]

25 bar [350 psi]

3/8 in BSP

no moving parts; 200 mA sinking output TTL compatible; stainless steel



As one of the world's leading providers of sensors and switches, Honeywell understands and meets the requirements of a wide variety of industries.

Honeywell is a global leader in providing reliable, cost-effective sensing and switching solutions for our customers' applications. We serve thousands of customers in four core industry segments: industrial, medical equipment, transportation, and aerospace/military products.

Aerospace and Defense

Aerospace applications are among the most demanding for any type of product. Rigorous FAA requirements, extreme environments (temperature, shock, vibration, the need for hermetic sealing), and the ability to customize devices are just a few of the parameters often required of sensors and switches in these applications. Aerospace customers typically value speed in prototyping and development, and Honeywell's vertically integrated, AS9100-approved manufacturing locations enhance our ability to produce devices in a wide variety of packages. The precision output of our products helps reduce risk and cost in key applications while also minimizing the need for unscheduled maintenance.

Honeywell's in-depth aerospace engineering experience allows us to work with customers in the design and development of products that best meet the specified requirements of their individual applications. Making products simple to install makes the job easier every step of the way. And, the odds are that Honeywell is already on the list of trusted suppliers for many

aerospace companies, underscoring the decades of experience we bring to this field.

Honeywell products for this industry (many of them PMA-certified) include force sensors, load cells, potentiometers, pilot controls, pressure sensors, pressure switches, resolvers, sensor/actuator assemblies for systems ranging from aerostructures to fuel control to flight surfaces, speed sensors, temperature probes, thermostats, torque sensors, y-guides for cargo systems, MICRO SWITCH sealed and high-accuracy switches, MICRO SWITCH pushbutton switches, and MICRO SWITCH rocker and toggle switches.

Medical

Medical applications typically require sensors and switches that are highly stable and extremely reliable to enhance patient safety and comfort. Stability is often essential to minimize long term drift, reduce the need for recalibration, and improve ease of use for medical equipment operators. Reliability enhances patient safety in life-critical applications, reduces downtime, and improves test throughput in applications such as clinical diagnostics. The product needs to be



easy to use and easy to design into a system, so Honeywell's extensive customization and built-in calibration/amplification capabilities are strong benefits. Confidence in Honeywell's product performance, reliability, and availability provide peace of mind for medical equipment manufacturers who choose Honeywell.

Honeywell offerings for this industry include airflow sensors, board mount pressure sensors and heavy duty pressure transducers, Hall-effect magnetic position sensors, humidity sensors, flexible heaters, force sensors, thermostats, infrared sensors, pressure and vacuum switches, potentiometers and encoders, MICRO SWITCH pushbutton, rocker, and toggle switches, and hour meters.

Industrial

The industrial arena can be a rough one. From high-speed food processing to high-force stamping applications, reliable and cost-effective sensors and switches often help minimize repair costs, maximize system life, and reduce overall system expense. Durability can mean the difference between smooth-running processes and expensive downtime. Accurate, repeatable sensor or switch output can reduce the need for calibration once the device is applied. Because of the wide variety of potential applications, Honeywell's ability to deliver a customized product that can meet virtually any size, weight, and power requirement – as well as any packaging stipulations for tough, harsh environments – often makes it easy to incorporate and use our devices. Safety is another important consideration for industrial users, and our products meet a wide variety of regulatory safety requirements.

Honeywell's industrial product line includes airflow sensors, current sensors, humidity sensors, liquid level sensors, linear position sensors, oxygen sensors, potentiometers



and encoders, speed sensors, temperature probes, thermostats, flexible heaters, SMART position sensors, board mount pressure sensors, and heavy duty pressure transducers, force sensors, push-pull switches, and MICRO SWITCH basic switches, hazardous area switches, key and rotary switches, limit switches, sealed and high-accuracy switches, pushbutton, rocker, toggle switches, and relays.




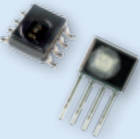




Transportation

Getting from Point A to Point B is often challenging for end-customers of transportation providers – Honeywell aims to make the trip easier with highly reliable, cost-effective switches and sensors. Our products are designed to support rigorous engine requirements, and their efficiency can also help optimize engine performance. Customization is often required to allow a switch or sensor to be mounted in tight or challenging environments including vibration, temperature extremes, and road contamination. The durability of Honeywell products enhances system reliability, which is also boosted by the stable, accurate output of our devices. All of these capabilities allow demanding customers to rely on Honeywell's many years of experience in the transportation industry.







Honeywell products for transportation applications include Hall-effect rotary position sensors, inertial measurement units, infrared sensors, keyless entry sensors, magnetic position sensors, heavy duty pressure transducers, speed and direction sensors, thermostats, temperature probes, SMART position sensors, and MICRO SWITCH pushbutton, rocker, and toggle switches.




SENSORS

	<p>Thermostats: Commercial and precision snap-action. Automatic or manual reset options, phenolic or ceramic housings. May be used in: Telecommunications • Battery Heater Controls • Computers • Copy Machines • Fax Machines • Food Service • Food Carts • Small and Major Appliances • Heat and Smoke Detectors • HVAC Equipment</p>		<p>Pressure transducers – heavy duty: Provide a complete amplified and compensated pressure measurement solution. Choice of ports, connectors, outputs and pressure ranges, engineered to be resistant to a wide variety of media for use in most harsh environments. May be used in: Industrial HVAC/R and Air Compressors • General System and Factory Automation Pump, Valve and Fluid Pressure • Transportation (Heavy Equipment and Alternative Fuel Vehicles) System • Pneumatics • Hydraulics</p>
	<p>Magnetic sensors: Digital and analog Hall-effect position ICs, magnetostrictive position ICs, Hall-effect vane and magnetic sensors. May be used in: Speed and RPM Sensing • Motor/Fan Control • Magnetic Encoding • Disc Speed • Tape • Flow-Rate Sensing • Conveyors • Ignitions • Motion Control/Detection • Power/Position • Magnetic Code Reading • Vibration • Weight Sensing</p>		<p>Humidity sensors: Digital, analog, and combined humidity/temperature sensing versions. Provide on-chip signal conditioning with accuracy capability to $\pm 1.7\%$ RH. Stable, reliable, low-drift performance. Standardized, platform-based sensors. May be used in: Medical • HVAC/R • Weather Stations • Air Compressors • Telecommunications • Grain Storage • Incubators</p>
	<p>Current sensors: Accurate and fast response. Almost no thermal drift or offset with temperature. Adjustable linear, null balance, digital and linear. May be used in: Variable Speed Drives • Overcurrent Protection • Power Supplies • Ground Fault Detectors • Robotics • Industrial Process Control • Wattmeters</p>		<p>Flexible heaters: Flat or custom geometry configurations with single, multiple and variable Watt densities. Stable, uniform heating. Can be bonded parts or combined in value-added assemblies. May be used in: Medical • HVAC/R • LCD Displays • Power Generation • Telecommunication</p>
	<p>Pressure sensors – board mount: Full line of industrial-grade sensors: media-isolating design, multiple ports and outlets, and electrical configurations. May be used in: Pneumatic Controls • Air Compressors • Process Monitoring • Hydraulic Controls • VAV Controls • Clogged Filter Detection • Presence/Absence of Flow • Transmissions</p>		<p>Temperature sensors: Customized probes, thermistors and RTD sensors. Plastic/ceramic, miniaturized, surface-mount housings and printed circuit board terminations. May be used in: Semi-Conductor Protection • Vending Machines • Power Generation • Hydraulic Systems • Medical • Thermal Management • Temperature Compensation</p>








ELECTROMECHANICAL SWITCHES





	<p>MICRO SWITCH basic switches: Snap-action precision switches. Compact. Lightweight. Designed for repeatability and enhanced life. Basic switches: large, standard, miniature, subminiature, hermetically sealed, water-tight and high-temperature versions. May be used in: Vending Machines • Communication Equipment • HVAC • Appliances • Automotive • Electronic Gaming Machinery • Valve Controls • Irrigation Systems • Foot Switches • Pressure • Temperature Controls</p>		<p>MICRO SWITCH sealed and high accuracy switches: Precision "snap action" mechanisms. Wide variety of actuators, terminations, circuitry configurations, electrical ratings, contact materials and operating characteristics. May be used in: Landing Gear • Flap/Stabilizer Controls • Thrust Reversers • Space Vehicles • Armored Personnel Carriers • De-Icer Controls • Wingfold Actuators • Industrial Environments • Valves • Underwater</p>
	<p>MICRO SWITCH hazardous area switches: Flame path designed to contain and cool escaping hot gases that could cause an explosion. MICRO SWITCH EX, BX, CX, LSX, and VPX Series. May be used in: Grain Elevators and Conveyors • Off-Shore Drilling • Petrochemical • Waste-Treatment Plants • Control Valves • Paint Booths • Hazardous Waste Handling Facilities</p>		<p>Key and rotary switches: Environmentally sealed, 2-3-4 position switches. O-rings help keep dirt and moisture out and prolong life. May be used in: All-Terrain Vehicles • Golf Carts • Snowmobiles • Scissor Lifts • Telehandlers • Construction and Marine Equipment • Skid Loaders • Agricultural Equipment • Material Handlers</p>
	<p>Pressure and vacuum switches: Feature setpoints from 3 psi to 4500 psi. Rugged components have enhanced repeatability, flexibility and wide media capability. Uses diaphragm or quad seal/piston. May be used in: Transmissions • Hydraulics • Brakes • Steering • Generators/Compressors • Dental Air • Embalming Equipment • Oxygen Concentrators • Air Cleaners • Fuel Filters • Pool Water Pressure</p>		<p>MICRO SWITCH toggle switches: Hermetic and environmentally sealed options. Enhanced reliability. Center pin for ultimate stabilization. Available in many shapes, sizes and configurations. May be used in: Aerial Lifts • Construction Equipment • Agriculture and Material-Handling Equipment • Factory-Floor Controls • Process Control • Medical Instrumentation • Test Instruments • Military/Commercial Aviation</p>

LIMITLESS™ WIRELESS SOLUTIONS

	<p>Limitless™ switches and receivers: Combines the best of MICRO SWITCH limit switches with commercial wireless technology. Beneficial for remote monitoring where wiring/maintenance is not physically possible or economically feasible. Used for position sensing and presence/absence detection. In addition to standard limits, hazardous area and intrinsically safe options available. Limitless™ operator interface: Adds a human interface device to the product-driven interfaces of Limitless™ switches and receivers. Choose and install a desired operator or utilize one of Honeywell's pushbuttons. Limitless™ pressure sensors: Provides a lower cost option to expensive wireless alternatives while offering the advantages of wireless over the next best alternative (a wired solution). Gage or absolute pressure sensing, 0 psi to 10000 psi ranges. Easily integrates into new or pre-existing instrumentation systems. Intrinsically safe option. May be used in: Valve Position • Crane Boom/Jib/Skew Position • Lifts • Material Handling • Presses • Construction/Ag Machines • Conveyors • Industrial Environments • Remote/Temporary Equipment • Grain Diverters or Flaps • Door Position</p>
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With more than 50,000 sensing, switching and control products ranging from snap-action, limit, toggle and pressure switches to position, speed, pressure and airflow sensors, Honeywell has one of the broadest sensing and switching portfolios available.

	<p>Position sensors: The SMART position sensor measures linear, angular or rotary position of a magnet attached to a moving object so that the object's position can be determined or controlled. Its simple, non-contact design eliminates mechanical failure mechanisms, reduces wear and tear, and improves reliability and durability. May be used in: Valve Position • Material Handling • Plastic Molding • Passenger Bus Level Position • Truck-Mounted Crane Outrigger Position • Aerial Work Lift Platform • Front Loader and Digger/Excavation Boom Position</p> <p>Potentiometer sensors: Measure linear, rotary position or displacement. Honeywell's proprietary conductive plastic delivers extensive temperature range and infinite resolution, and provides precision position measurement. May be used in: Robotic Motion Control • Marine Steering • In-Tank Level Sensing</p>	
	<p>Infrared sensors: IREDS, sensors and assemblies for object presence, limit and motion sensing, position encoding and movement encoding. Variety of package styles, materials and terminations. May be used in: Printers/Copiers • Motion Control Systems • Metering • Data Storage Systems • Scanning • Automated Transaction • Drop Sensors • Non-Invasive Medical Equipment</p>	 <p>Force sensors: Variety of package styles and various electrical interconnects including pre-wired connectors, printed circuit board mounting and surface mounting for flexibility. May be used in: Infusion and Syringe Pumps • Blood Pressure Equipment • Pump Pressure • Drug Delivery Systems • Occlusion Detection • Kidney Dialysis Machines</p>
	<p>Proximity sensors: Designed to meet demanding temperature, vibration, shock and EMI/EMP interference requirements. Number of housing materials and termination styles. May be used in: Aircraft Landing Gear • Gun Turret Position Control • Door/Hatch Monitoring</p>	 <p>Speed sensors: Measure speed, position and presence detection utilizing magnetostrictive, variable reluctance, and Hall-effect technologies. May be used in: Cam and Crankshafts • Transmissions • Fans • Pumps • Mixers • Rollers • Motors</p>
	<p>Airflow sensors: Advanced microstructure technology. Sensitive and fast response to flow, amount/direction of air or other gas. Analog or digital output. Thin-film, thermally isolated bridge structure consists of a heater and temperature sensing elements. May be used in: HVAC • Respirators • Process Control • Oxygen Concentrators • Gas Metering • Chromatography • Leak Detection Equipment • Medical/Analytical Instrumentation • Ventilation Equipment</p>	 <p>Rotary position sensors: Digital and analog Hall-effect, magnetostrictive and potentiometric devices and resolvers for sensing presence of a magnetic field or rotary position. Directly compatible with electronic circuits for application flexibility. May be used in: Audio and Lighting • Frequency • Temperature • Position • Medical/Instrumentation • Computer Peripherals • Manual Controls • Joysticks • Telecom • Welding • Heating • Aerospace</p>

	<p>MICRO SWITCH aerospace-grade pressure switches: Lightweight, compact pressure switches. Meets military and DO-160 standards. Lower operating force provides application versatility with enhanced precision. Design modularity allows for configuration of the switch, facilitating rapid customization. May be used in: Aerospace Systems • Engines, Fuel Pressure and Hydraulic Systems • Military Ground Vehicles • Ordnance and Munitions Release Systems • Military Maritime Systems</p>	 <p>MICRO SWITCH limit switches: Broadest and deepest limit switch portfolio. Rugged, dependable position detection solutions. MICRO SWITCH heavy-duty limit switches (HDLS), medium-duty and global limit switches. Hermetically and environmentally sealed switches. May be used in: Machine Tools • Woodworking • Textile • Printing Machinery • Metal Fabrication • Balers/Compactors • Forklifts • Bridges • Robotics • Wind Turbines • Elevators • Moving Stairs • Doors • Dock Locks/Levelers • Aerial Lifts • Cranes • Conveyors • Rail • Shipboards • Docks</p>
	<p>MICRO SWITCH pushbutton switches: Lit or unlit. Wide range of electrical and display design, pushbuttons and manual switches. Many shapes, sizes and configurations. Easy to apply, operate and maintain. May be used in: Control Boards and Panels • Industrial and Test Equipment • Flight Decks • Medical Instrumentation • Process Control</p>	 <p>MICRO SWITCH sealed and standard rocker switches: Wide range of electrical and display design. Many shapes, sizes, buttons and configurations to enhance manual operation. May be used in: Transportation • Agricultural and Construction Equipment • Test Equipment • Heavy-Duty Machinery • Marine Equipment • Small Appliances • Telecom • Medical Instrumentation • Commercial Aviation</p>

SAFETY SWITCHES

	<p>MICRO SWITCH safety switches: For operator point-of-operation protection, access detection, presence sensing, gate monitoring and electrical interfacing. High-quality, dependable, cost-effective solutions. May be used in: Packaging and Semi-Conductor Equipment • Plastic-Molding Machinery • Machine Tools • Textile Machines • Lifts • Industrial Doors • Balers • Compactors • Aircraft Bridges • Telescopic Handlers • Refuse Vehicles</p>
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Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment 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 that Honeywell, in its sole discretion, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

Find out more

To learn more about Honeywell's sensing and switching products, call **+1-815-235-6847**, email inquiries to **info.sc@honeywell.com**, or visit **sensing.honeywell.com**

Honeywell Sensing and Internet of Things

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