Comtronic® Standard Sensors

Precautions listed on page 5

First Angle Projection

This universal sensor is used for all compact cylinders, inch or metric.
Sold separately. Not attached to the cylinder.

Compact® Standard Limit Sensors

(shown with Quick Disconnect Option)

- Low cost and Compact® size
- Dual LED indicators for power and signal
- Circuit protection/surge and polarity
- High-flex robotic grade cable with 4.8mm (3/16") bend radius. 105 strand primaries.
- CE compliant / IP67 and NEMA 6P rated
- 100% solid state device for maximum life
- 3 cord options

Part No.		Sensor Type (Wiring diagrams and definitions on page 5)	Cord Types		
			Quick Disconnect	1 Meter	3 Meter
Sinking	WSKL	NPN		ü	
	WSKLP		ü *		
	WSKL3				ü
	WSKLPS		ü *		
Sourcing	WSCL	PNP		ü	
	WSCLP		ü *		
	WSCL3				ü
	WSCLPS		ü *		

**Mating 3 Socket Receptacle available, part # R3.*

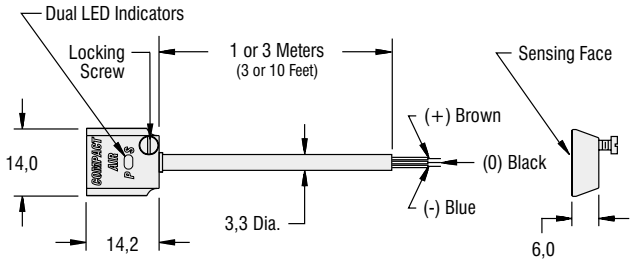
Dimensional Information

Must specify 'K' *(sinking)* or 'C' *(sourcing)* when ordering
See page 5 for definitions and more information

Part Number - *Specify K or C*

WS__L **WS__L3**

"3" denotes 3 meter cable



Part No. WSCL3
Sourcing output with 3 meter cable.

Specifications

Parameters	Compact® Standard Limit Sensors	
	NPN *(sinking)*	**PNP** *(sourcing)*
Part Number	WSKL, WSKL3, WSKLP, WSKLPS	WSCL, WSCL3, WSCLP, WSCLPS
Operating voltage	5-24 VDC	
Current Consumption On Off	16mA (24V) 7mA (24V)	14mA (24V) 7mA (24V)
Switching Current	100 mA Max	
Voltage Drop	1.5 V Max @ 100mA	
Operating Frequency	1 KHz Max	
Switch Logic	Sinking, Normally Open	Sourcing, Normally Open
LED Function Green Red	Power On Switch Active	
Operating Temperature	0°C to 70°C	
Circuit Protection	Reverse Polarity / Surge Absorber	
Environmental Certifications	IEC standard IP67, NEMA 6P	
Wire Type	High flex, 24 AWG / 105 strand primary	
Housing Material	Zinc diecast	
Housing Color Code	Black	Silver
Shock Resistance	30G Max	
Vibration Strength	9G Max	

Optional Quick Disconnect Sensor Cable

with threaded, sealed connectors

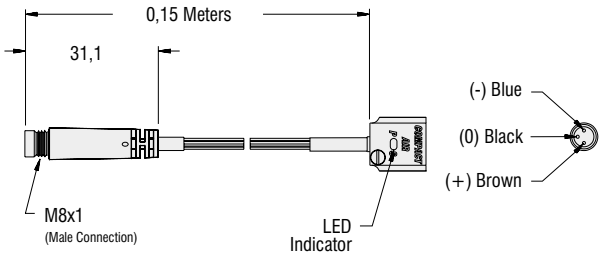
3 Prong Plug

#WSKLP, #WSCLP, #WSKLPS, #WSCLPS

Part Number - *Specify K or C*

WS__LP **WS__LPS**

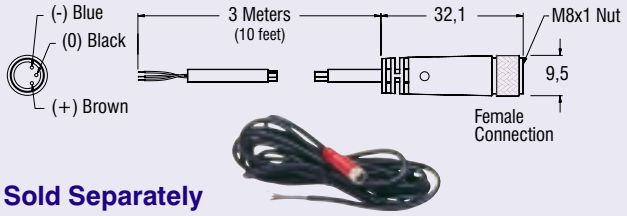
"S" denotes shorter length cable



3 Socket Receptacle

For use with:
#WSKLP, #WSCLP, #WSKLPS, #WSCLPS, #HSK, #HSC, #WSKLRPS, #WSCLRPS

Part Number
R3



Sold Separately

All dimensions are in millimeters unless otherwise noted.

Comtronic® Husky Sensors

Precautions listed on page 5

First Angle Projection

This universal sensor is used for all compact cylinders, inch or metric.
Sold separately. Not attached to the cylinder.

Compact® Husky Limit Sensors

- **Rugged design for harsh environments**
- **Weld field interference immunity**
- Extra secure mount with socket head cap screw
- Threaded connector on housing
- Impact resistant
- LED indicator
- Reverse polarity protection
- CE compliant / IP67 rated
- 200mA switching current
- Better suited for large Compact® cylinders

Part No.	Sensor Type *(Wiring diagrams and definitions on page 5)*	Cord Type
		Quick Disconnect
HSK	NPN *(sinking)*	✓*
HSC	PNP *(sourcing)*	✓*
Comtronic® Husky® sensors are **not** offered with flying leads.		

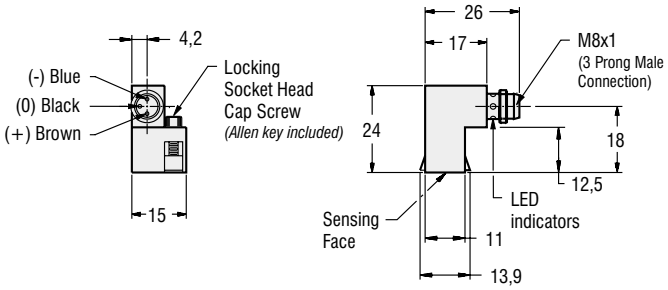
**Mating 3 Socket Receptacle available, part # R3.*

Dimensional Information

Must specify 'K' *(sinking)* or 'C' *(sourcing)* when ordering
See page 5 for definitions and more information

Husky Sensors are manufactured with a quick disconnect option. See below for the mating 3 meter socket receptacle.

Part Number
HS__
Specify K or C



Weld Field Data		
Rated Field Strength H_n	[kA/m]	1.2
Assured Field Strength H_a	[kA/m]	≥2
Maximum Noise Field Strength	[kA/m]	≤200
Noise Field Frequency	[Hz]	50…60
Differential Travel H	[% of H_n]	≤45
Ambient Temperature Range T_a	[°C]	-25…70
Temperature Drift	[% of H_n]	≤0.3

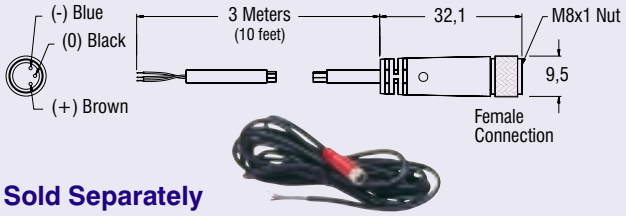
Specifications		
Parameters	**Compact® Husky® Limit Sensors**	
	NPN *(sinking)*	**PNP** *(sourcing)*
Part Number	HSK	HSC
Operating voltage	10-24 VDC	
Current Consumption On Off	 25mA (24V) 80uA (24V)	
Switching Current	200 mA Max	
Voltage Drop	3.1 V Max @ 200mA	
Response Time	≤50mS	
Operating Frequency	≤1Hz	≤10Hz
Switch Logic	Sinking, Normally Open	Sourcing, Normally Open
LED Function Red	 Switch Active	
Operating Temperature	-25°C to 70°C	
Circuit Protection	Reverse Polarity	
Conditional Short Circuit	100A	
Environmental Certifications	IP67	
Wire Type	NA	
Housing Material	Anodized Aluminum	
Housing Color Code	Black	Silver
Weld Field Immunity	Standard	

3 Meter Socket Receptacle

3 Socket Receptacle

For use with:
#WSKLP, #WSCLP, #WSKLPS, #WSCLPS, #HSK, #HSC, #WSKLRPS, #WSCLRPS

Part Number
R3



Sold Separately

All dimensions are in millimeters unless otherwise noted.

Comtronic® Round Sensors

Precautions listed on page 5

First Angle Projection

Two of these sensors are included on "B" and "C" series electric cylinders only.
Please specify sinking or sourcing output.

Compact® Round Limit Sensors

(shown with Quick Disconnect Option)

Part No.	Sensor Type *(Wiring diagrams and definitions on page 5)*	Cord Type
		Quick Disconnect
WSKLRPS	NPN *(sinking)*	✓*
WSCLRPS	PNP *(sourcing)*	✓*

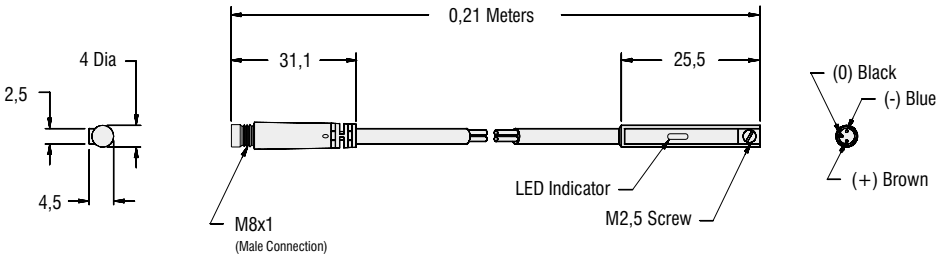
**Mating 3 Socket Receptacle available, part # R3.*

- Low cost and Compact® size
- Single LED indicator for signal
- Circuit protection/surge and polarity
- High-flex robotic grade cable with 4.8mm (3/16") bend radius. 105 strand primaries.
- CE compliant / IP67 and NEMA 6P rated

Dimensional Information

Must specify 'K' *(sinking)* or 'C' *(sourcing)* when ordering
See page 5 for definitions and more information

Part Number
WS__LRPS
Specify K or C



Part No. WSKLRPS
Sinking output with quick disconnect

Specifications

Parameters	Compact® Round Limit Sensors	
	NPN *(sinking)*	**PNP** *(sourcing)*
Part Number	WSKLRPS	WSCLRPS
Operating voltage	5 - 24 VDC	
Current Consumption	7mA (24V) Max	9mA (24V) Max
Switching Current	50 mA Max	
Voltage Drop	.5 V Max @ 25mA	1.2 V Max @ 25mA
Operating Frequency	1 KHz Max	
Switch Logic	Sinking Normally Open	Sourcing Normally Open
LED Function	RED (Switch Active)	GREEN (Switch Active)
Operating Temperature	-20°C to 70°C	

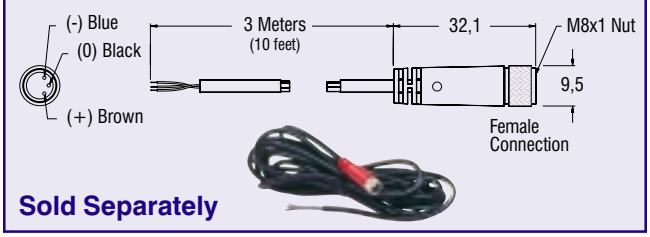
Parameters	Compact® Round Limit Sensors	
	NPN *(sinking)*	**PNP** *(sourcing)*
Part Number	WSKLRPS	WSCLRPS
Circuit Protection	Reverse Polarity Surge Suppression	
Environmental Certifications	IP67, NEMA 6P	
Wire Type	Black Polyurethane Jacket, PVC Insulation	
Housing Material	Plastic	
Housing Color Code	Black	
Shock Resistance	50G Max	
Vibration Strength	9G Max	

3 Meter Socket Receptacle

3 Socket Receptacle

For use with:
#WSKLP, #WSCLP, #WSKLPS, #WSCLPS, #HSK, #HSC, #WSKLRPS, #WSCLRPS

Part Number
R3



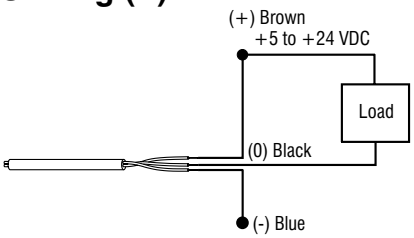
Sold Separately

All dimensions are in millimeters unless otherwise noted.

Wiring Diagrams and Definitions

for units with flying leads

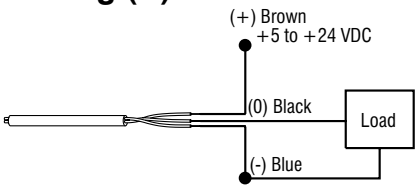
NPN Output
Sinking (K)



- Ideal for complex controls utilizing multiple power supplies.

A "sinking" output sensor completes a circuit by connecting the load to ground. Sinking output sensors in a sequence can have different supply voltages. The ground is their common factor.

PNP Output
Sourcing (C)



- Ideal for single power supply applications.

A "sourcing" output sensor completes a circuit by connecting the load to the supply current. All sourcing output sensors must have the same supply voltage.

Part Number Descriptions

Sensor Part Number Descriptions	
Code	Description
W	Metric
H	Husky
R	Round
SK	Sinking Output
SC	Sourcing Output
P	Quick Disconnect with .46 Meter Cable (18")
PS	Quick Disconnect with .15 Meter Cable (6")
L	Low Voltage
3	3 Meter Cable
R3	3 Meter Cable with 3 Socket Receptacle

★**Part Number Examples:**

WSKLRPS
W = Metric
SK = Sinking Output
L = Low Voltage
R = Round
PS = Quick Disconnect with 6" Meter Cable

WSCLP
W = Metric
SC = Sourcing Output
L = Low Voltage
P = Quick Disconnect with 18" Meter Cable

Precautions

- Sensors are magnetically activated and will not function without the magnetic piston.
- Absolute maximum ratings are the extreme limits that the device will withstand without damage to the device. However, the electrical and magnetic characteristics are not guaranteed as the maximum limits are approached nor will the device necessarily operate at the absolute maximum rating.
- Presence of external magnetic / electromagnetic fields may interfere with the operation of Compact® Limit sensors only. Use the Husky® Limit sensor in the presence of an external electromagnetic field.

COMPACT AIR PRODUCTS

An IMC Company

When your design goal is:

- Absolute size and weight efficiency
- Maximum component life
- Smooth-running, low friction and fast-cycling performance…

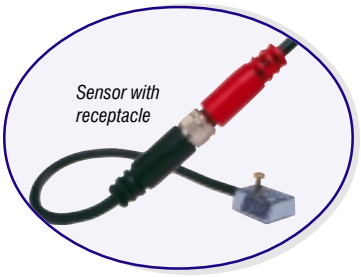
…look to Compact Air Products for maximum versatility and adaptability to your design needs. Just as when we first opened our doors, our objective continues to be benchmark-level performance and reliability.

Compact Air Products is committed to answering your needs quickly and cost-effectively. Since Compact® cylinders are assembled to order from standard components, you'll enjoy all the benefits of custom options… and the ready availability of a standard product. We can deliver cylinders configured from standard components in less than three working days, furnish quotes on modified products in twenty-four hours and deliver modified products in an average of ten working days.

Tell us about your needs. We'll answer with a rapid solution tailored to meet them. We're ready to answer your call.

All products manufactured by Compact Air Products, Inc., are covered under a growing number of US and international patents. Numerous other patents are pending. Compact, Husky, Comtronic, Tuf-Coat, Snap-Cap, Clean-Act and World Class are all registered trademarks of Compact Air Products, Inc.

Compact Air Products, Inc.
P.O. Box 499 • Westminster, SC 29693
Tel: 864-647-9521 • Fax: 864-647-9574
E-Mail: mkt@compactair.com (catalog information)
techsales@compactair.com (product information)
Website: www.compactair.com



Warranty

All of our products are warranted against defects in workmanship and materials for a period of three years from the date of shipment. Compact Air's sole liability under this warranty is expressly limited to the correction or replacement of the product. Products under this warranty must be returned prepaid with a "Returned Goods Authorization" number.

Warranty does not cover ordinary wear, tear, abuse, misuse, improper storage, abnormal conditions of temperature, overloading, or improper lubricant. No warranty is made with respect to items altered, damaged in shipment, misapplied, or in contact with contaminants. Compact Air assumes no liability to any company or person for any damages, direct or indirect, to property or person.

This warranty is expressly in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability of fitness for a particular purpose.

Compact Precision Directional Flow Controls and Needle Valves

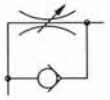
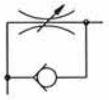
Unique Inch to Metric Combinations

84 *unique miniature flow control models in stock*

- Inch Sizes: #10-32,1/8NPTF,1/4NPTF
- Metric Sizes: M5, G1/8, G1/4

- #10-32 valves available with a space saving integral barb for 1/8" I.D. tubing. See opposite side for details.
- Meter Out style valves can be factory installed to your Compact Air cylinders, guided cylinders, gripper, etc... at no extra charge. See Factory Installed below.

3 Flow Paths

Style "MO" Meter Out	Style "MI" Meter In	Style "NV" Needle Valve Meter Both Ways
 • Metered Output • Free Flow Input	 • Metered Input • Free Flow Output	• Metered Input • Metered Output

Precision Control

- A unique needle design minimizes turbulence and improves flow controllability.
- A super fine pitch needle thread provides the finest adjustment available.
- Captive needle cannot be adjusted out of the housing.

Sizes	Needle Thread Pitch	Number of Turns
#10-32	80 TPI	6
M5 x .8	.32mm	
1/8NPTF	60 TPI	8
G1/8	.42mm	
1/4NPTF	56 TPI	8
G1/4	.45mm	

Model Numbers ☆

Port Thread	"MO" Color Code: Black			"MI" Color Code: Red			"NV" Color Code: Silver		
	Model #	Male Thread	Female Thread	Model #	Male Thread	Female Thread	Model #	Male Thread	Female Thread
#10-32	MO10	#10-32	#10-32	MI10	#10-32	#10-32	NV10	#10-32	#10-32
	MO5	M5	M5	MI5	M5	M5	NV5	M5	M5
	MO10-5	#10-32	M5	MI10-5	#10-32	M5	NV10-5	#10-32	M5
M5	MO5-10	M5	#10-32	MI5-10	M5	#10-32	NV5-10	M5	#10-32
	MO10B	#10-32	1/8" barb	MI10B	#10-32	1/8" barb	NV10B	#10-32	1/8" barb
	MO5B	M5	1/8" barb	MI5B	M5	1/8" barb	NV5B	M5	1/8" barb
1/8-27NPTF	MO18	1/8NPTF	1/8NPTF	MI18	1/8NPTF	1/8NPTF	NV18	1/8NPTF	1/8NPTF
	MOG18	G1/8	G1/8	MIG18	G1/8	G1/8	NVG18	G1/8	G1/8
G1/8	MO18-G18	1/8NPTF	G1/8	MI18-G18	1/8NPTF	G1/8	NV18-G18	1/8NPTF	G1/8
	MOG18-18	G1/8	1/8NPTF	MIG18-18	G1/8	1/8NPTF	NVG18-18	G1/8	1/8NPTF
1/4-18NPTF	MO14	1/4NPTF	1/4NPTF	MI14	1/4NPTF	1/4NPTF	NV14	1/4NPTF	1/4NPTF
	MOG14	G1/4	G1/4	MIG14	G1/4	G1/4	NVG14	G1/4	G1/4
G1/4	MO14-G14	1/4NPTF	G1/4	MI14-G14	1/4NPTF	G1/4	NV14-G14	1/4NPTF	G1/4
	MOG14-14	G1/4	1/4NPTF	MIG14-14	G1/4	1/4NPTF	NVG14-14	G1/4	1/4NPTF

NPTF = National Pipe Thread Dry Seal (1/8NPTF and 1/4NPTF)

"G" = BSPP British Standard Pipe Parallel (G1/8 and G1/4)

1/8" Barb is for 1/8" ID polyurethane or vinyl tubing

☆ = All model numbers are available with the Knob Option, add suffix "K"to the end of the part number. See reverse side for dimensional information.

Factory Installed

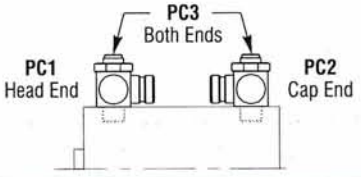
Save Time . . . Ready to Use . . . Easy to Order

Compact Air will ***factory install*** any "MO" model flow control at ***no charge.***

How to Order:

1) Verify "MO" model number required from the chart above.
2) Choose factory installation:
   "PC1" Head end only
   "PC2" Cap end only
   "PC3" Head and cap end
3) Remove "MO" from model number, and add "PC" option to the end.

Factory Installed part number example:
G18-18PC3
Flow control required: MOG18-18
Install at: head and cap end PC3
(Remove MO add PC3 to end)



Specify our unique **Inch to Metric** or **Metric to Inch** combination flow controls factory installed to convert cylinder ports.

For example, metric cylinder part number WS25x25 - G18-18PC3 would place two metered output flow controls on the cylinder and allow for the use of 1/8-27NPTF fittings.

COMPACT AIR PRODUCTS
P.O. Box 499 • Westminster, SC 29693 • Tel: 864-647-9521 • Fax: 864-647-9574

See other side for additional information.