

# Tubular Inductive Sensors

## Tubular Inductive Sensors

CD Reference Files:  
SensorCatalog\_2003.pdf



Housing Size	3 mm Smooth	4 mm Smooth	5 mm Threaded	6.5 mm Smooth
<b>Sensing distance</b>	<b>2X</b>	<b>STD, 2X</b>	<b>STD, 2X</b>	<b>STD, 2X, 3X, 4X</b>
<b>Flush</b>	1.0 mm	0.8 mm, 1.5 mm	0.8 mm, 1.5 mm	1.5 mm, 2 mm
<b>Non-flush</b>	–	–	–	2.5 mm, 4 mm
<b>CD Reference Page:</b>	<b>1.14</b>	<b>1.14</b>	<b>1.15</b>	<b>1.17</b>
<b>DC 3/4 Wire Metal</b>	1.14	1.14–1.15	1.15–1.16	1.17–1.21
<b>AC/DC 2-Wire Metal</b>	–	–	–	–
<b>DC 2-Wire</b>	–	–	–	–
<b>Connection Options</b>	Cable	Cable Connector Cable w/connector	Cable Connector Cable w/connector	Cable Connector Cable w/connector

Std = Standard sensing range  
 2x = Double the normal sensing distance  
 3x = Triple the normal sensing distance  
 4x = Quadruple the normal sensing distance

## Tubular Inductive Sensors General Overview

Our broad range includes proximity sensors from Ø 3 mm to 80 x 80 mm for virtually any automation application.

Balluff high technology sensors are designed and manufactured according to leading quality standards. Fail-safe inspection of all products ensures that only completely tested sensors are shipped.

### Pigtail-style tubular inductive sensors

Balluff now offers a variety of standard inductive sensors with pigtail connectors. These sensors are available with PUR cable in 0.2 meter or 0.5 meter lengths.



# Tubular Inductive Sensors

8 mm Smooth & Threaded	12 mm Threaded	18 mm Threaded	30 mm Threaded
<b>STD, 2X, 3X, 4X</b>	<b>STD, 2X, 3X, 4X</b>	<b>STD, 2X, 3X</b>	<b>STD, 2X, 3X</b>
1.5, 2 mm	2, 3, 4 mm	5, 8 mm	10, 15 mm
2.5, 3, 4, 6 mm	4, 6, 8, 10 mm	8, 12, 16, 20 mm	15, 22,30,40 mm
<b>1.21,1.74</b>	<b>1.30,1.64,1.75</b>	<b>1.38,1.65,1.76</b>	<b>1.44,1.67,1.78</b>
1.21 – 1.29	1.30 – 1.38	1.38–1.43	1.44–1.47
–	1.64 – 1.65	1.65 – 1.66	1.67 – 1.68
1.74	1.75 – 1.76	1.76 – 1.78	1.78 – 1.79
Cable Connector Cable w/connector	Cable Connector Cable w/connector	Cable Connector Cable w/connector	Cable Connector Cable w/connector



Inductive

**Tubular  
Style**

Block  
Style

Special  
Duty

## Inductives on the edge-

Balluff inductive offerings are growing so fast they are not in our main Sensor Catalog or on the enclosed CD. Contact your Balluff representative today for full technical and ordering information, or check [www.balluff.com](http://www.balluff.com)!

## M5 Small Sensors-

With the smallest connectors on the market!

- Currently available on Ø 4 mm and M5 models
- 4-pin version, pin configuration per IEC 60947-5-2
- IP 67 rated
- Molded-on PUR cable with 3 x 26 AWG
- Supply voltage 10...30 V

– Ideal for applications requiring small sensors with small connectors:

- Automation/handling
- In-die sensing

<http://www.balluff.com/M5>




<http://www.balluff.com/inductives>

# Block Style Inductive Sensors

**Block Style Inductive Sensors**


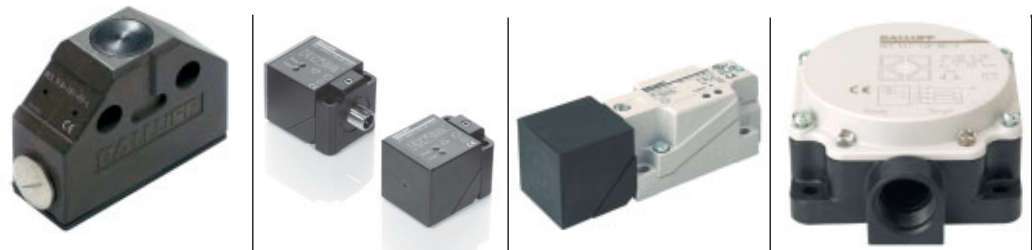
CD Reference Files:  
SensorCatalog\_2003.pdf




Housing Size	5 x 5 mm	8x8,8x16 mm	10x30, 20x30 mm	16.5 x 30 mm Minisensor
<b>Sensing distance</b>	<b>STD</b>	<b>STD, 2X, 3X</b>	<b>STD</b>	<b>STD</b>
<b>Flush</b>	0.8 mm	1.5, 2, 3 mm	1.5, 2, 3 mm	2 mm
<b>Non-flush</b>	–	–	–	–
<b>CD Reference Page:</b>	<b>1.50</b>	<b>1.50</b>	<b>1.52</b>	<b>1.53</b>
<b>DC 3/4 Wire</b>	1.50	1.50 – 1.52	1.52 – 1.53	1.53
<b>AC/DC 2-Wire</b>	–	–	–	–
<b>Connection Options</b>	Cable Connector	Cable Connector	Cable	Cable Connector Cable w/connector

**Block Style Inductive Sensors**

CD Reference Files:  
SensorCatalog\_2003.pdf

Housing Size	60.5 x 74 mm	40x40 mm Unicomact	40 x 40 mm Unisensor	80 x 80 Maxisensor
<b>Sensing distance</b>	<b>STD</b>	<b>STD</b>	<b>STD, 2X</b>	<b>STD</b>
<b>Flush</b>	7 mm	20 mm	15 mm	40 mm
<b>Non-flush</b>	–	30 mm	20, 25, 30, 25/40, 40 mm	50 mm
<b>CD Reference Page:</b>	<b>1.58</b>	<b>1.59</b>	<b>1.60, 1.70</b>	<b>1.62, 1.71</b>
<b>DC 3/4 Wire</b>	1.58	1.59	1.60 – 1.61	1.62
<b>AC/DC 2-Wire</b>	–	–	1.70	1.71
<b>Connection Options</b>	Screw terminals	Connector	Screw terminals Connector	Screw terminals Connector








## New mini plastic block sensors

CD reference page: 1.52

- 8x16x4, 1.5 mm Sn, (PNP & NPN)
- 30x10x6, 3 mm Sn, (PNP & NPN)
- 30x18x10, 5 mm Sn, (PNP & NPN)
- Commonly used in automation/handling
- Fit in tight areas
- Easy top mounting

# Block Style Inductive Sensors

				
26 x 40 mm Mini & Midisensors	18x30,17.5x28 mm	25 x 50 mm	26 x 58 mm	42 x 48 mm
<b>STD</b>	<b>STD</b>	<b>STD</b>	<b>STD</b>	<b>STD</b>
2 mm	5 mm	5 mm	10 mm	5 mm
4 mm	–	–	–	–
1.54	1.55	1.56	1.57	1.58
1.54 – 1.55	1.55	1.56 – 1.57	1.57	1.58
–	–	–	–	–
Cable Connector Cable w/connector	Cable	Cable Connector Cable w/connector	Connector	Screw terminals Connector

Inductive

Tubular  
Style

**Block  
Style**

Special  
Duty

## New Block Style Sensors

### New midi-sensor with corner cut-off



- 26 x 32 x 12 mm
- PNP NO and NC with S49 and Cable
- NPN NO and NC with S49 and Cable
- AC/DC 20...250 V, 130mA short circuit protected, cable versions NO/NC
- All Types with 4 mm Shielded (2X Extended sensing range)

Not on catalog CD.  
Please consult the  
factory for details.  
1-800-543-8390

# Q40



CD reference  
page: 1.59

### Unicomact - new design & metal mounting bracket!

- Replaces old Q40 design
- Shorter overall housing length
- More robust housing design
- Factor 1 versions also available (Page 1.90)

### Unisensor - new AC/DC version!



- 40 mm sensing distance, unshielded
- Function/Supply indication






CD reference  
page: 1.70




### Optional- Metal Q40 mounting bracket








CD reference  
page: 1.169

# Special Duty Inductive Sensors

<b>Special Duty Inductive Sensors</b> 	Proimax®	Factor 1	Weld Field Immune	HyperPROX™
				
Housings Available	M12, M18 Tubular	M12, M18, M30 Tubular, 40x40 Block	M12, M18, M30 Tubular	3 - 30 mm Tubular 8x8 Block
Sensing distance	<b>STD, 2X</b>	<b>STD, 2X</b>	<b>STD</b>	<b>STD, 2X, 3X, 4X</b>
Flush	2, 4, 8 mm	3, 5, 10, 15 mm	2, 5, 10 mm	1,1.5,2,3,4,7,8,12,15,22mm
Non-flush		12, 20, 25, 35 mm	4, 8, 15 mm	4,6,8,10,16,20,30,40 mm
CD Reference Page:	1.83-1.86	1.87-1.90	1.91-1.93	1.95-1.116
DC 3/4 Wire	1.84	1.88-1.90	1.92-1.93	1.96-1.108,1.112-1.116
AC/DC 2-Wire	1.85	–	–	1.109
DC 2-Wire	1.86	–	–	1.110-1.111
Namur (intrinsically safe)	–	–	–	–
Connection Options	Cable Connector	Connector	Connector	Cable Connector Cable w/connector
Features & Benefits	<ul style="list-style-type: none"> <li>– Ideal for extreme environments (welding, machine tool)</li> <li>– Duroplast injection molded sensing face</li> <li>– Withstands continuous temps up to 195°C</li> <li>– Teflon coated versions</li> <li>– IP 67/68 rated</li> <li>– Extended sensing range</li> </ul>	<ul style="list-style-type: none"> <li>– Magnetic field-immune circuitry</li> <li>– Senses all metals at the same distance</li> <li>– High-quality Teflon coated versions</li> <li>– Extremely impervious active surface</li> <li>– Flush or non-flush mountable</li> </ul>	<ul style="list-style-type: none"> <li>– Magnetic field immune electronic circuitry</li> <li>– Sensing surfaces made of temperature-rated plastic</li> <li>– Teflon coated</li> <li>– LED for function indication</li> </ul>	<ul style="list-style-type: none"> <li>– Extended range allows more distance between sensor and target</li> <li>– Smaller sensors may be used to achieve the same range</li> <li>– The alternative when steel-faced sensors are not an option</li> </ul>

<b>Special Duty Inductive Sensors</b> 	Large Housing	Ring Sensors
		
Housings Available	80,90,100,153,163 Pancake, 100,150,120 Bar	80x45,120x80 Block Style
Sensing distance	<b>STD</b>	<b>STD</b>
Flush		10 mm
Non-flush	45,50,70,100 mm	25 mm, 45 mm
CD Reference Page:	1.151-1.154	1.155-1.157
Connection Options	Cable Connector	Cable Connector
Features & Benefits	<ul style="list-style-type: none"> <li>– AC and DC versions</li> <li>– Bar sensors are adjustable from 5 - 45 mm</li> <li>– Multiple housing sizes</li> </ul>	<ul style="list-style-type: none"> <li>– PNP &amp; NPN versions</li> <li>– N/O &amp; N/C versions</li> <li>– Time delay on some models</li> <li>– Adjustable sensing distances</li> </ul>

# Special Duty Inductive Sensors

Aluminum Chip Immune	Proxinox®	High Temperature	Ultralinear	Namur
				
M18, M30 Tubular	M12, M18, M30 Tubular	M8-M30 Tubular 25x50 Block	M8-M30 Tubular 80x80 Block	4 - 30 mm Tubular 26x40-80x80 Block
STD	STD	STD, 2X	STD	STD, 2X
4,8 mm	2,5,10 mm	1, 2, 5, 10 mm	0...10 V,0-20mA,4-20mA	0,8,1,2,1,5,2,5,8,10,15 mm
-	4,8,10,15 mm	15 mm	0...10V	2,5,4,15,30,40,50 mm
1.117-1.119	1.121-1.127	1.129-1.131	1.133-1.141	1.143-1.149
1.118	1.122 - 1.127	1.130-1.131	1.133-1.141	-
1.119	-	-	-	-
-	-	-	-	1.144-1.148
-	-	-	-	1.144-1.148
Cable Connector	Cable Connector	PVC/105 °C, Teflon, or Silicon Cable	Cable Connector	Cable Connector
<ul style="list-style-type: none"> <li>- Immune to aluminum chips</li> <li>- Unique circuitry enables sensor to detect a ferrous object while ignoring the build-up of non-ferrous chips around the sensor</li> <li>- M18-M30 sizes available</li> </ul>	<ul style="list-style-type: none"> <li>- Harsh duty rated</li> <li>- Ideal for machine tool, chemical, packaging and food industries</li> <li>- Highly flexible PuFlex cables</li> <li>- SMD technology avoids short circuit and polarity reversal</li> </ul>	<ul style="list-style-type: none"> <li>- Withstands high radiant heat of liquid glass</li> <li>- Operates in ambient temperatures from -25 to up to +120°C (+248°F)</li> <li>- IP67 rated</li> <li>- 3-wire DC, 10-30 volts</li> <li>- PNP/NPN logic</li> <li>- NO/NC outputs</li> </ul>	<ul style="list-style-type: none"> <li>- Harsh duty rated</li> <li>- Ideal for relatively short metal target travel</li> <li>- Extended linear measuring range</li> <li>- Linear analog signal available in voltage or current output</li> <li>- Increased linearity</li> <li>- Reduced output signal temperature drift</li> </ul>	<ul style="list-style-type: none"> <li>- Ideal for non-contact sensing in hazardous areas</li> <li>- Factory Mutual Approved for Class I,II, III, Division I, Group A-G hazardous locations</li> <li>- Variety of body styles available</li> </ul>

Inductive

Tubular Style

Block Style

Special Duty

## New special duty inductives

### STEELFACE™

The rugged one-piece stainless steel sensor for extreme environments



- Ferrous and nonferrous detection models
- 3 wire DC (PNP) and 2 wire AC/DC
- M8 - M30 sizes available
- Short circuit and overload protection
- Rated to 1200 psi for washdown applications
- cULus, CSA & CE

<http://www.balluff.com/SteelFace>

### SlagMaster

Slag Resistant Coating

Coating can be applied to any Factor 1 or weld-field immune sensor!



- Dramatically increases the life of a sensor in welding environments
- Designed to withstand resistance welding applications
- Resists weld slag, high heat, and physical damage

<http://www.balluff.com/SlagMaster>

<http://www.balluff.com/inductives>