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PLANT MANAGEMENT & AUTOMATION

Material Handling | Manufacturing | Steel | Mining | Agriculture | Wood & Paper | Recycling | Electronic
Automotive | Chemical | Petroleum | Food | Medical


DISTANCE


TRIGGER


DETECT


COUNT

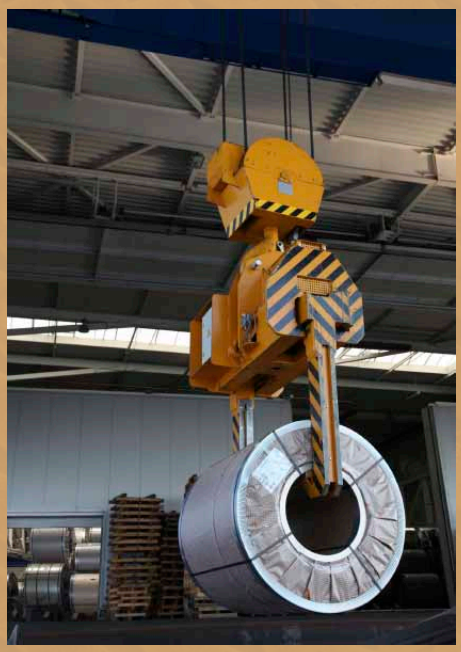

LEVEL


PROXIMITY

LEVEL >

Acquire a measurement to materials that other technologies can't touch, and even penetrate through hostile ambient conditions.

Get level data for grain, coal, plastic pellets, kibble, oil, molten metal, foam, paint and even clear liquids.



< PROXIMITY

Save yourself from a disaster with a rapid warning sensor and avoid crane collisions and safety zone encroachment.

COUNT >

Always know exactly what is traveling down your conveyor, no matter how fast it's coming or what shape it is.

PLANT MANAGEMENT & AUTOMATION SENSORS

Universal Laser Sensor (ULS)

These sensors are highly accurate and fully programmable and offer a variety of I/O formats. Easily control parameters such as the laser power levels or short and long-range gates.

*All sensors include field installation cable.

ULS
Ideal for applications requiring extremely high accuracy.
#7005400

ULS OEM
Ideal for system integration.
#7005395

Wide Beam

This sensor was designed specifically for crane collision avoidance and offers a quick and easy plug and play operation.

*Field installation cable sold separately.

Wide Beam
Ideal for crane collision avoidance.
#7003150

Field installation cable.
#7054594

TruSense® S-Series

All these sensors are powerful, compact and more affordable. Use any one of the variety of targeting modes to customize what you want the laser to detect.

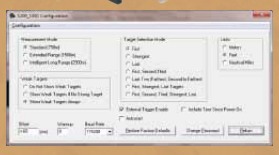
*All sensors include field installation cable & interface software.

S-200
Ideal for applications requiring RS232.
#7005785

S-200 OEM
Ideal for system integration.
#7005910

S-210
Ideal for applications requiring an alignment laser and RS232.
#7006740

S-230
Ideal for applications requiring 4-20 HART.
#7006750



Accessories

Mounting Plate
Attach to any LTI sensor or the LTI Mounting Bracket. Also works with Ruggedized Enclosure or other fixtures.
#7035137

Sun Shade
Protect your LTI sensor from inclement weather, sun and overhead dust.
#1134749

Mounting Bracket
Permanently mount your LTI sensor with swivel and tilt adjustments.
(Requires LTI Mounting Plate.)
#3004959

ULS Interface Kit
A software program to configure your ULS.
(Not intended for field installation. Includes download cable & software. Only 1 recommended regardless of sensor quantity.)
#7034740

Power/Comm Cable
A completely pre-assembled configuration cable for your convenience.
(Not intended for field installation. Only 1 recommended regardless of sensor quantity.)

ULS #7054667
S-100 #7054670
S-200 #7054671

SENSOR SPECIFICATIONS

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Accessories Continued

Ruggedized Enclosure
Protects any S-Series sensor from outside contamination or damage.
#7035139

*Laser not included

US Ratings

Division Ratings
Classified
Class I, Div 1 Groups B, C, D
Class II, Div 1 Groups E, F, G
Class III
Type 4x

Zone Ratings
Class I, Zone 1, AEx d IIC
Ex d IIC
Class III
Type 4x

Approved Instrument Housing
Class I, Div 1 Groups B, C, D FM 3615
Class II, Div 1 Groups E, F, G
Type 4x

Global Ratings
ATEX (flameproof–DEMKO)
II 2G Ex d IIB+H2
II 2D Ex tD A20
IP66
IECEx (flameproof–UL)
Ex d IIB+H2
IP66 IEC60529

Physical
Weight: 8 lbs (3.62kg)
Dimensions: 5 in diameter x 10 in long (12.7 x 25.4 cm)
Conduit fitting: 3/4 in NPT

Dust Tube
Snaps onto the Tank Adaptor and helps protect the laser glass from contamination and is recommended for dusty environments.
#3004957

Tank Adaptor
Connect the Ruggedized Enclosure to a tank or silo with a 4 in threaded opening. It is air-purge ready.
#3004956

4 in Flange
Adapt the Ruggedized Enclosure to your tank or silo.
#3004960

Spanner Wrench
Necessary to tighten the Tank Adaptor from the Ruggedized Enclosure to a 4 in NPT fitting. (Only 1 needed regardless of sensor quantity.)
#9034501

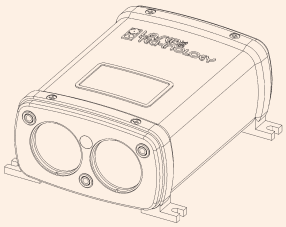
	Specifications	Universal Laser Sensor (ULS)	Wide Beam	TruSense S-200 Series
Performance	Min range	1.5 ft (46 cm)	5.0 ft (1.5 m)	1.5 ft (46 cm)
	Max range (to reflective target / to nonreflective target)	5,249 / 1,640 ft (1,600 / 500 m)	150 ft (46 m) cooperative only	9,514 / 5,249 ft (2,900 / 1,600 m) low-accuracy mode 4,921 / 2,953 ft (1,500 / 900 m) medium-accuracy mode 2,461 / 2,461 ft (750 / 750 m) high-accuracy mode
	Accuracy	0.70 in (2 cm)	10% of distance	0.1 ft (4 cm) in short-range mode 0.3 ft (8 cm) in medium-range mode 0.5 ft (15 cm) in long range-mode
	Data output rate	<1 Hz to 2 kHz	N/A	<1 Hz to 15 Hz
	Target modes	Averaging, binning, detection, last	Strongest	First, strongest, last, first-second-third, Last-second to last, first-strongest-last, First-second-third-strongest-last
Optical and Electrical	Wavelength	905 nm (near IR)	905 nm (near IR)	905 nm (near IR)
	Divergence	3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m)	3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m)	3 mrad (equal to 1 ft beam diameter @ 328 ft or 30 cm @ 100 m)
	I/O	RS232, RS485, 4-20	4-20	S-200 = TRIG, SDI12, RS232 without alignment laser S-210 = TRIG, SDI12, RS232 with alignment laser S-230 = 4-20 HART with alignment laser
	Input power	12-24 VDC (12 VDC recommended)	10-17 VDC (12 VDC recommended)	12-24 VDC (12 VDC recommended)
Physical	Current draw	Measuring = 150 mA	Measuring = 150 mA	Measuring = 65 mA, Standby = 40 mA
	Dimensions (L x W x H)	5.3 x 4.75 x 2.5 in (134.6 x 120.7 x 50.8 mm)	5.3 x 4.75 x 2.5 in (134.6 x 120.7 x 50.8 mm)	4.11 x 3.22 x 1.64 in (104.4 x 81.7 x 41.6 mm)
	Weight	Standard = 32.8 oz (929.9 g) OEM = 15.5 oz (439.3 g)	Standard = 32.8 oz (929.9 g)	Standard = 4.8 oz (138.6 g), OEM = 2.7 oz (76 g)
	Housing and frame material	Aluminum	Aluminum	Glass-filled polycarbonate
Environmental	Eye safety	Class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825 - 1 : 2001)	Class 1, 7mm (FDA, CFR21) Class 1m (IEC 60825 - 1:2001)	Class 1, 7 mm (FDA, CFR21) Class 1m (IEC 60825 - 1 : 2001)
	Shock / vibration	MIL-STD-810	MIL-STD-810	MIL-STD-810
	Moisture	IP54	IP54	IP54
	Operating temperature	- 20° to 140° F (- 28° to 60° C)	- 20° to 140° F (- 28° to 60° C)	- 20° to 140° F (- 28° to 60° C)

* All specifications are subject to change without notice. Rev. 1 January 2012

ac·cu·ra·cy *(noun)*: the degree of conformity of a measurement to a standard or a true value.

con·verge *(verb)*: two or more light rays proceeding inward toward a point.

co·op·er·a·tive tar·get *(noun)*: a highly reflective surface or object, such as a glass corner cube or reflective tape.



dif·fuse re·flec·tion *(verb)*: a light striking a target and being scattered over a wide angle.

di·verge *(verb)*: two or more light rays proceeding outward from a point.

eye safe *(noun)*: lasers emitting energy with no hazards to the human eye.

fre·quen·cy *(noun)*: the number of repeating events per unit of time. A1 kHz laser firing rate means a laser is firing 1,000 times per second.

harsh am·bi·ent con·di·tions *(noun)*: the challenging atmosphere between the sensor and a target.

in·fra·red light *(noun):* invisible light with wavelengths roughly between 700 nm and 1550 nm.

la·ser *(noun):* acronym for light amplification by stimulated emission of radiation. A device that produces a monochromatic coherent beam of light by energizing atomic energy levels.

lens *(noun):* an optical element that converges or diverges light.

max·i·mum range *(noun)***:** the farthest reaching distance the sensor can acquire a measurement.

min·i·mum range *(noun):* accuracy may be compromised if a measurement is made from less than this distance.

non·con·tact *(noun):* a measurement made without a sensor touching the target. A preferred measurement method in many applications.

non·co·op·er·a·tive tar·get *(noun):* a target not designed to reflect light and that has less than 90% reflectivity.

o·pac·i·ty *(noun):* the degree to which light is not allowed to travel through.

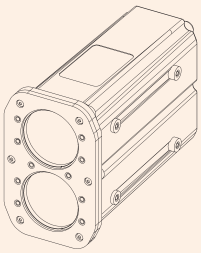
par·al·lax *(noun):* displacement or difference in a focus along two different optical axes; e.g., closing the left eye and viewing an object with the right eye–the object will appear to shift when the right eye is closed and viewed with the left eye.

pre·ci·sion *(noun):* the repeatability of a series of test results; whether the method gives the same answer under the same set of circumstances or sampling criteria.

re·flec·tance *(noun):* the fraction of incident light returned by a surface. Higher target reflectance will increase range. General surface reflectance (R) ratios are: reflective=90+%, white=90%, gray=20%, black=5%.

re·frac·tion *(noun):* the change in direction of light as it passes from one medium to another of a different density; e.g., from air to water.

res·o·lu·tion *(noun):* the minimum distance between two adjacent features or objects or the minimum size of a feature or object that can be detected. For a measurement, it is the smallest unit of resolve; for example, 0.001 meter has 1 millimeter of resolution. Not to be confused with accuracy.



sam·ple rate *(noun):* the frequency with which the sensor updates its range output. This can be set as low as one sample every few seconds and as high as 2,000 per second.

tar·get *(noun):* term used to refer to an object or point that is being measured or detected.

wave·length *(noun):* the distance between two points on adjacent waves that have the same phase, such as the distance between two consecutive peaks or troughs; e.g., 905 nanometers means this distance is 0.000000905 meters between two adjacent points on the light wave.