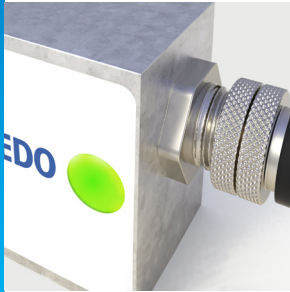


# SLP33xD-IOL Smart Load Cell

## Connectivity, High Speed, High Precision



### Integrated Connectivity

PLC connectivity is integrated in the load cell; no additional device is required. This saves space in the machine and/or in the control cabinet and reduces complexity, so that you can streamline sensor integration without expert knowledge.



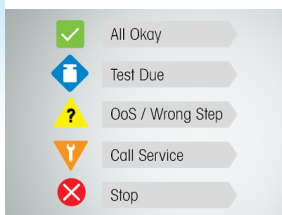
### High Precision

Load cells are available with OIML C6 and C3 class. TwinCal™ calibration technology supports loading and unloading applications. Onboard filtering and adjustment for temperature changes enable precise weighing results.



### High-Speed Weighing

The load cell provides 200 updates per second (200 Hz), which supports high-speed weighing applications. Machine designs can be optimized for high throughput and increased productivity.



### Advanced Intelligence

Condition monitoring and Smart5™ alarms ensure the system is performing as expected and allow quick reaction in case of issues. Achieve a new level of confidence in your machine performance.



### SLP33xD-IOL Product Family

High-Quality Aluminum Alloy Single-Point Load Cell with IO-Link Connectivity

### Key Features:

- Integrated connectivity saves space, reduces system complexity, and allows quick and straightforward installation.
- CalFree™ technology provides factory calibration data, so the load cell is ready to measure.
- TwinCal™ delivers high accuracy for both loading and unloading applications.
- Smart5™ intelligent condition monitoring and alarms ensure easy maintenance and high machine uptime.
- Direct connection to PLCs, DCSs and to other host controllers and the IODD file ensure rapid integration into any kind of machine, thus development time is reduced.

# Technical Specifications

Parameter		unit of measure	Specification														
			SLP331D-IOL					SLP332D-IOL				SLP333D-IOL					
Model No.			SLP331D-IOL					SLP332D-IOL				SLP333D-IOL					
Rated Capacity (R.C.)		kg (lb)	10 (22)	20 (44)	30 (66)	50 (110)	100 (220)	30 (66)	50 (110)	100 (220)	200 (440)	50 (110)	100 (220)	150 (330)	200 (440)	300 (660)	500 (1100)
Noisefree Resolution			C3: 100 000 / C6: 300 000														
Zero load Output		%R.C.	< 1														
Combined Error <sup>(1)(2)</sup>		%R.C.	C3/IIIM n:5: ≤ 0.018 / C6/IIIM n:10: ≤ 0.012														
Repeatability Error		%A.L. <sup>(3)</sup>	C3/IIIM n:5: ≤ 0.01 / C6/IIIM n:10: ≤ 0.005														
Creep, 30 minute		%A.L.	C3/IIIM n:5: ≤ 0.02 / C6/IIIM n:10: ≤ 0.01														
Min. Dead Load Output Return (DR), 30 min.		%A.L.	C3/IIIM n:5: ≤ 0.0167 / C6/IIIM n:10: ≤ 0.0083														
Temperature Effect on	Min. Dead load Output	%R.C./°C (./°F)	C3/IIIM n:5: ≤ 0.00107 (0.0006) / C6/IIIM n:10: ≤ 0.00064 (0.0004)														
	Sensitivity <sup>(2)</sup>	%A.L./°C (./°F)	C3/IIIM n:5: ≤ 0.0013 (0.0006) / C6/IIIM n:10: ≤ 0.00067 (0.0003)														
Temperature Range	Compensated		-10 ~ +40 (+14 ~ +104)														
	Operating	°C (°F)	-30 ~ +65 (-22 ~ +150)														
	Safe Storage		-40 ~ +80 (-40 ~ +176)														
OIML / European Approval <sup>(4)</sup>	Number, OIML / Europe		R60/2017-A-NL1-23.23 / NMI TC12619														
	Class		C3 / C6														
	nmax		3000 / 6000														
	Y		15000 / 25000														
	PLC		0.8														
	Humidity Symbol		none														
	Min. dead load	kg	0														
	Z		3000 / 6000														
	Barometric Pressure Effect		none														
NTEP Approval <sup>(4)</sup>	Number		882849														
	Accuracy Class		III														
	nmax		9000 / 6000														
	Vmin	g	0.4	0.8	1.2	2.0	4.0	1.2	2.0	4.0	8.0	2.0	4.0	6.0	8.0	12.0	20.0
	Min. dead load	g	0														
ATEX Approval <sup>(4)</sup>	Number, cat. 2		in preparation														
IECEX Approval <sup>(4)</sup>	Rating		in preparation														
Factory Mutual Approval <sup>(4)</sup>	Number, USA / Canada		in preparation														
Insulation Resistance @50VDC		MΩ	≥ 2000 <sup>(6)</sup>														
Breakdown Voltage		V AC	≥ 500 <sup>(6)</sup>														
Supply Voltage Non-regulated	Range (nominal)	V DC	10 ~ 30														
	Typical		12 / 24														
Supply Current	Max.	mA	60 (6)														
	Typical		40 / 20														
Overvoltage Protection	Max. Tested (IEEE4-95)	A	2000 no outdoor lightning conditions <sup>(6)</sup>														

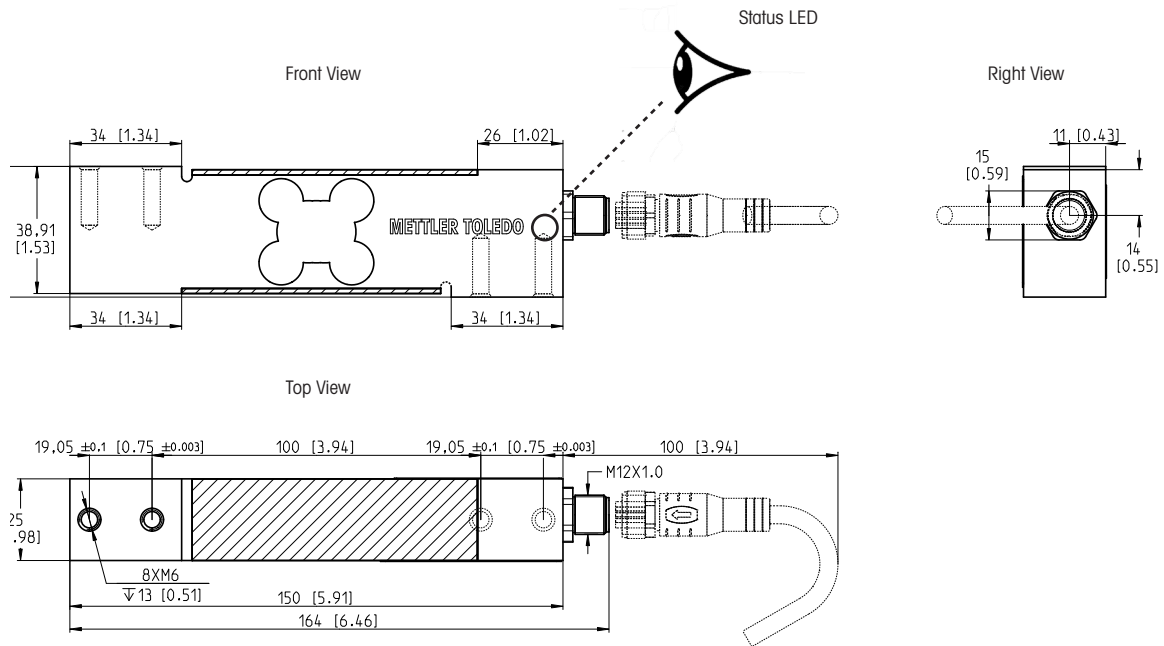
# Technical Specifications

Parameter		unit of measure	Specification														
Model No.			SLP331D-IOL					SLP332D-IOL				SLP333D-IOL					
Rated Capacity (R.C.)		kg (lb, nominal)	10 (22)	20 (44)	30 (66)	50 (110)	100 (220)	30 (66)	50 (110)	100 (220)	200 (440)	50 (110)	100 (220)	150 (330)	200 (440)	300 (660)	500 (1100)
Warm-up Time from Cold Start		minutes	5														
Communications	Type		IO-Link 1.1														
	Protocol		COM3														
	Baud rate		up to 230.4 kbit/sec														
	Condition monitoring		Smart5™, integrated LED on load cell														
Effective System Update Rate, for one cell, 38400 baud rate		Hz	up to 200														
ESD rating		kV	8 (6)														
Span Stability, typical (peak to peak in 1 min)		ppm	< 5														
Immunity OIML R60		V/m	10														
Material Spring Element			Aluminum, anodized														
Enclosure			Silicon potting														
Protection	Type		Silicon potting														
	IP Rating		IP67														
	NEMA Rating		NEMA 6/6P														
Overload Protection			none														
Load Limit	Safe	%R.C.	150														
	Ultimate		300														
Safe Side Load		%R.C.	100														
Safe Dynamic Load		%R.C.	70														
Fatigue Life		cycles @R.C.	> 1,000,000														
Direction of Loading			beam														
Deflection @ R.C., nominal		mm (in)	<0.35 (0.014)					<0.25 (0.01)				<0.3 (0.012)					
Max. platter size		mm (in)	400 x 400 (15.75 x 15.75)									600 x 600 (23.62 x 23.62 )					
Off-center load error, R76-1		%A.L. / cm (%A.L. / in )	0.0049 (0.012)									0.0032 (0.008)					
Weight, nominal		kg (lb)	0.31 (0.7)									0.91 (2)					
Cable			M12 industrial, 5-pin, shielded recommended														
Cable length, max.		m (ft)	20 (66)														
Connector, load cell			M12 industrial, 5-pin, female ( Class A )														
Mounting Screw	Grade		8.8 or higher														
	Size/thread	mm (in)	M6									M8					
	Torque, nominal	Nm (ft-lb)	10 (7.5)									25 (18)					

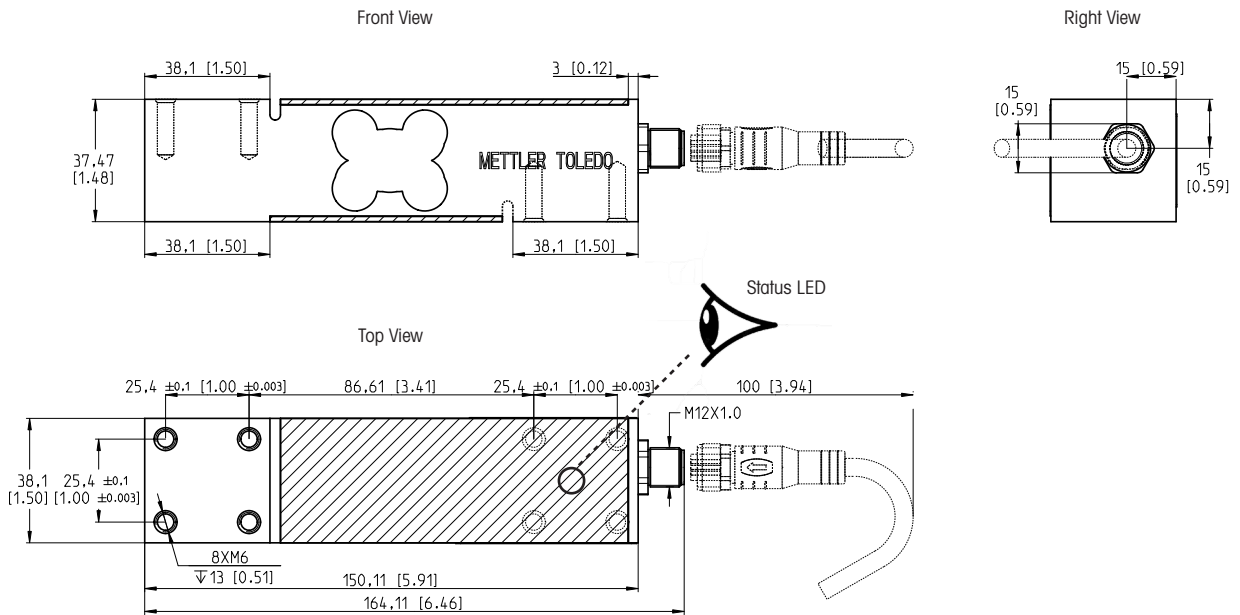
(1) Error due to the combined effect of non-linearity and hysteresis  
 (2) Typical values only. The sum of errors due to Combined Error and Temperature Effect on Sensitivity comply with the requirements of OIML R60 and NIST HB44.  
 (3) A.L. = Applied Load  
 (4) See certificate for complete information.  
 (5) Calculate the scale's minimum increment size by multiplying this value by the square root of the number of load cells. For non Legal-For-Trade Applications  
 (6) Values are not finalized, subject to change

## Load Cell Dimensions mm [in]

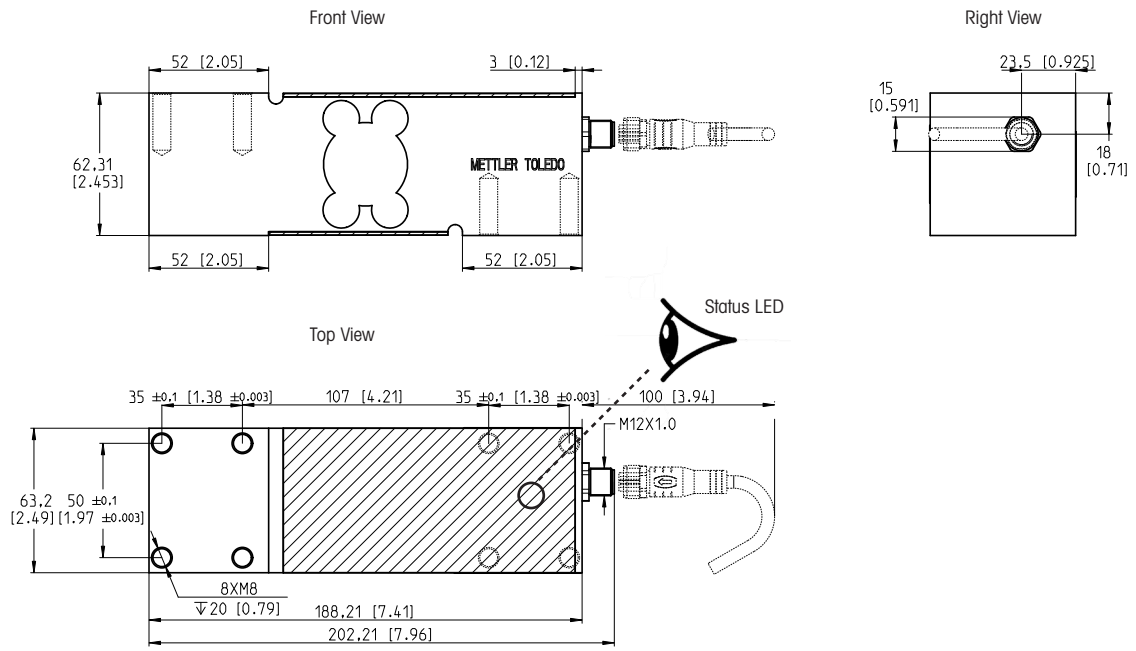
### SLP331D Smart Load Cell



### SLP332D Smart Load Cell Mounting Dimensions



## SLP333D Smart Load Cell Mounting Dimensions



## SLP33xD-IOL Smart Load Cell Connector Pin Definition

M12 Connector	Pinning	Signal
	1	L+
	2	DI/DQ
	3	L-
	4	C/Q
	5	Not used

For more information:



► [SLP33xD IOL Download Page](http://www.mt.com/ind-slp33xd-download)  
[www.mt.com/ind-slp33xd-download](http://www.mt.com/ind-slp33xd-download)

## Order Information

**SLP33xD-IOL - Smart Load Cell**

Rated Capacity	Item number, Load Cell					
	SLP331D-IOL		SLP332D-IOL		SLP333D-IOL	
	C3	C6	C3	C6	C3	C6
<b>10 kg / 22 lb</b>	30801836	30786457	-	-	-	-
<b>20 kg / 44 lb</b>	30801837	30786458	-	-	-	-
<b>30 kg / 66 lb</b>	30801838	30786459	30801841	30786462	-	-
<b>50 kg / 110 lb</b>	30801839	30786460	30801842	30786463	30801830	30786466
<b>100 kg / 220 lb</b>	30801840	30786461	30801843	30786464	30801831	30786467
<b>150 kg / 330 lb</b>	-	-	-	-	30801832	30786468
<b>200 kg / 440 lb</b>	-	-	30801844	30786465	30801833	30786469
<b>300 kg / 660 lb</b>	-	-	-	-	30801834	30786470
<b>500 kg / 1100 lb</b>	-	-	-	-	30801835	30786471

**METTLER TOLEDO Service****METTLER TOLEDO Service**

Our extensive service network is among the best in the world and ensures maximum uptime and optimized performance of your weighing solution.

**Documentation and Qualification**

Provide your customers with valuable weighing component information to increase visibility into the system you designed and address maintenance and audit requirements. StarterPac professional documentation simplifies long-term maintenance by providing all equipment component information to easily reference.

**Calibration**

Through METTLER TOLEDO, you can offer both Factory Acceptance Tests and initial calibration to prove a weighing system is performing as intended and to verify for the end-user that it is ready for use. Highly accurate calibration using traceable and certified test weights for weighing systems between 0.5 mg and 5000 kg ensures precision to meet any customer tolerances, regardless of application.

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