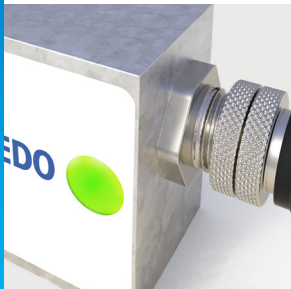


# SLP33xD-RTU Smart Load Cell

## 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.



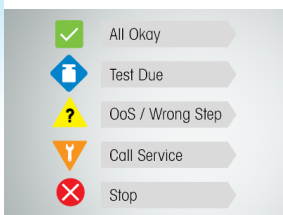
### High Precision

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.



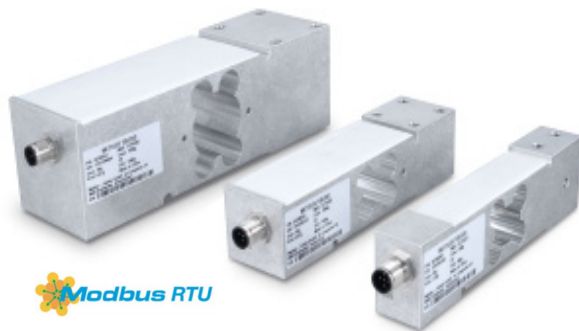
### High-Speed Weighing

The load cell provides 100 updates per second (100 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-RTU Product Family

High-Quality Aluminum Alloy Single-Point Load Cell with RTU 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 PLC sample code ensure rapid integration into any kind of machine, thus development time is reduced.

# Technical Specifications

Parameter		unit of measure	Specification														
			SLP331D-RTU					SLP332D-RTU					SLP333D-RTU				
Model No.																	
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)	300 (660)	500 (1100)	
Min. Increment Size, typical, C3.		g (mlb)	0.1 (0.22)	0.2 (0.44)	0.3 (0.66)	0.5 (1.1)	1.0 (2.2)	0.3 (0.66)	0.5 (1.1)	1.0 (2.2)	2.0 (4.4)	0.5 (1.1)	1.0 (2.2)	1.5 (3.3)	3.0 (6.6)	5.0 (11.0)	
Min. Increment Size, typical, C6		g (mlb)	0.033 (0.073)	0.067 (0.147)	0.1 (0.22)	0.17 (0.37)	0.33 (0.73)	0.1 (0.22)	0.17 (0.37)	0.33 (0.73)	0.67 (1.47)	0.17 (0.37)	0.33 (0.73)	0.5 (1.1)	1.0 (2.2)	1.7 (3.7)	
Zero load Output		%R.C.	< 1														
Combined Error <sup>(1)(2)</sup>		%R.C.	C3/IIIIM n:5: ≤ 0.018 / C6/IIIIM n:10: ≤ 0.012														
Repeatability Error		%A.L. <sup>(3)</sup>	C3/IIIIM n:5: ≤ 0.01 / C6/IIIIM n:10: ≤ 0.005														
Creep, 30 min.		%A.L.	C3/IIIIM n:5: ≤ 0.02 / C6/IIIIM n:10: ≤ 0.01														
Min. Dead Load Output Return (DR), 30 min.		%A.L.	C3/IIIIM n:5: ≤ 0.0167 / C6/IIIIM n:10: ≤ 0.0083														
Temperature Effect on	Min. Dead load Output	%RC/°C (°F)	C3/IIIIM n:5: ≤ 0.00107 (0.0006) / C6/IIIIM n:10: ≤ 0.00064 (0.0004)														
	Sensitivity <sup>(2)</sup>	%AL/°C (°F)	C3/IIIIM n:5: ≤ 0.0013 (0.0006) / C6/IIIIM n:10: ≤ 0.00067 (0.0003)														
Temperature Range	Compensated	°C (°F)	-10 ~ +40 (+14 ~ +104)														
	Operating		-30 ~ +65 (-22 ~ +150)														
	Safe Storage		-40 ~ +80 (-40 ~ +176)														
OIML / European Approval <sup>(4)</sup>	Number, OIML / Europe		in preparation														
	Class		C3 / C6														
	nmax		3000 / 6000														
	Y		15000 / 25000														
	p <sup>LC</sup>		0.8														
	Humidity Symbol		none														
	Min. dead load	kg	0														
	Z		3000 / 6000														
	Barometric Pressure Effect		none														
NTEP Approval <sup>(4)</sup>	Number		in preparation														
	Class																
	nmax																
	Vmin	lb	in preparation														
	Min. dead load	lb															
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>(5)</sup>														
Breakdown Voltage		V AC	≥ 500 <sup>(5)</sup>														
Supply Voltage Non-regulated	Range (nominal)	V DC	10 ~ 30														
	Typical		12 / 24														
Supply Current	Max.	mA	60														
	Typical		40 / 20														
Overvoltage Protection	Max. Tested (IEEE4-95)	A	2000, no outdoor lightning conditions <sup>(5)</sup>														

# Technical Specifications

Parameter	unit of measure	Specification															
		SLP331D-RTU					SLP332D-RTU					SLP333D-RTU					
Model No.		SLP331D-RTU					SLP332D-RTU					SLP333D-RTU					
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	RS485															
	Protocol	Modbus RTU															
	Baud rate	1200 / 2400 / 4800 / 9600 / 19200 / 38400															
	Condition monitoring	Smart5™, integrated LED on load cell															
Effective System Update Rate, for one cell, 38400 baud rate	Hz	up to 100															
ESD rating	kV	8 <sup>(5)</sup>															
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.															
	Ultimate	150															
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 )					
Weight, nominal	kg (lb)	0.31 (0.7)										0.91 (2)					
Cable		M12 industrial, 5-pin, shielded															
Cable length, max.	m (ft)	20 (66)															
Connector, load cell		M12 industrial, 5-pin, female															
End resistor, external	Ω	120															
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.

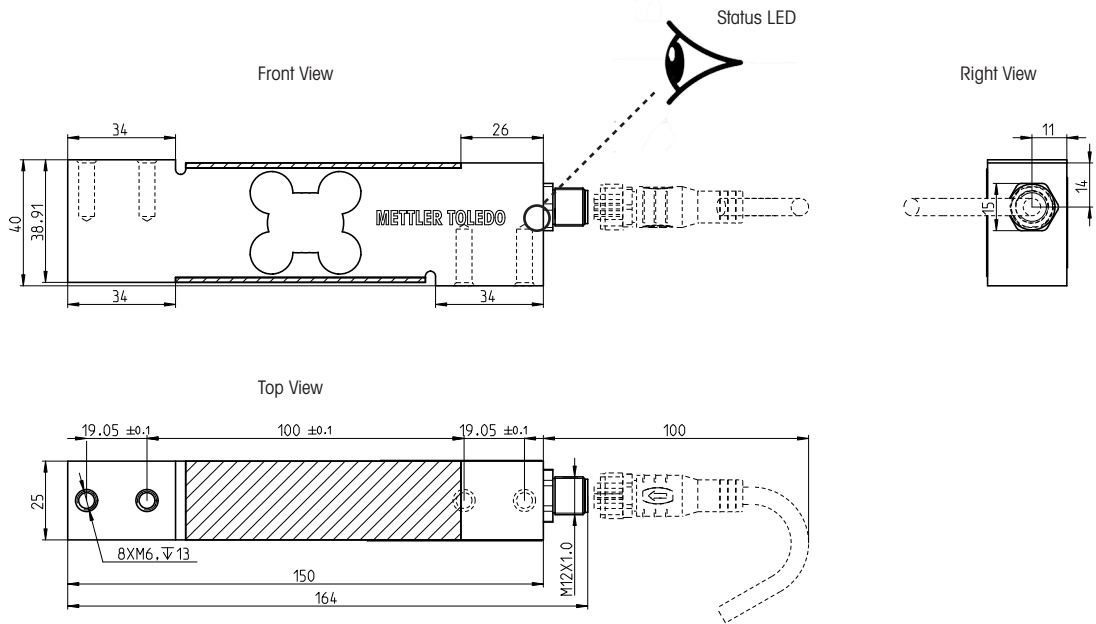
(3) A. L. = Applied Load

(4) See certificate for complete information.

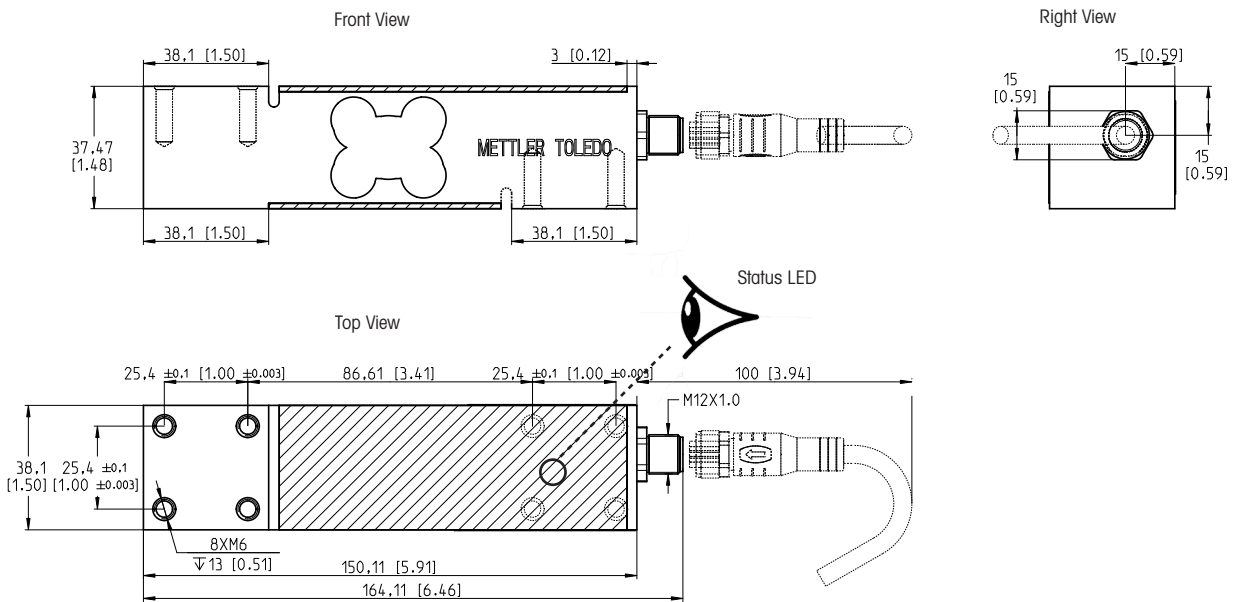
(5) Values are not finalized, subject to change

## Load Cell Dimensions mm [in]

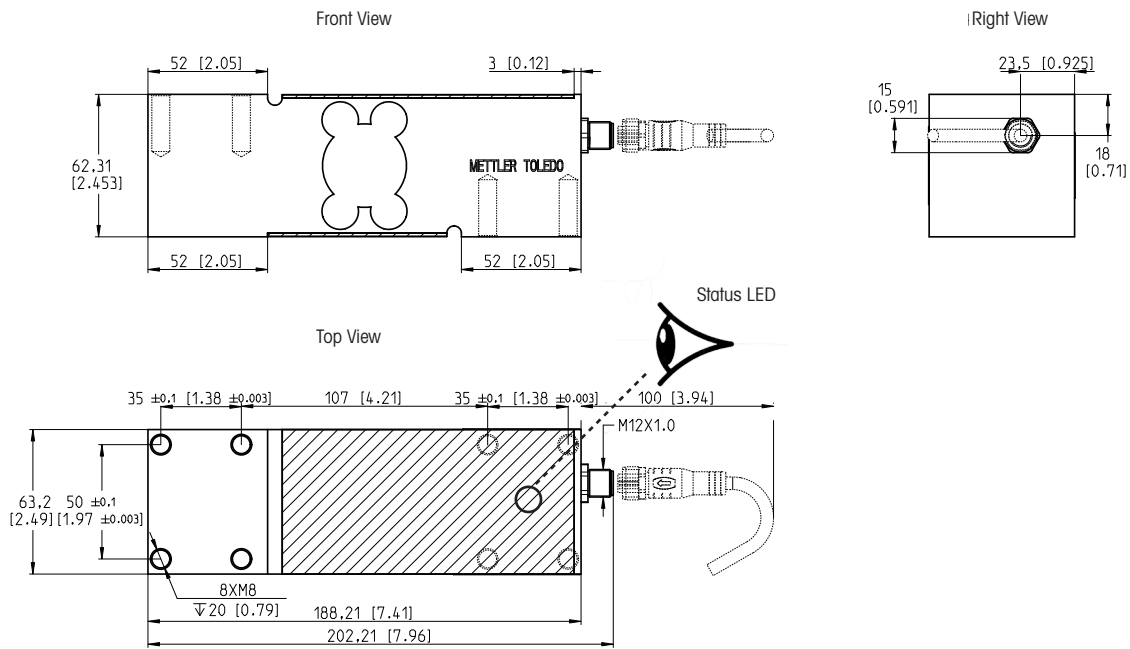
### SLP331D Smart Load Cell



### SLP332D Smart Load Cell Mounting Dimensions



## SLP33D-RTU Load Cell Mounting Dimensions



## SLP33xD-RTU Smart Load Cell Connector and Cable Definition

M12 Connector	Pinning	Signal	Cable Color
	1	VDC (Voltage)	Brown
	2	RS485 A	White
	3	GND (Ground)	Blue
	4	RS485 B	Black
	5	Not used	-
	Shielding		Braided Tape

For more information:



▶ SLP33xD-RTU Download Page  
[www.mt.com/ind-slp33xd-download.html](http://www.mt.com/ind-slp33xd-download.html)

## Order Information

## SLP33xD-RTU - Load Cell

Rated Capacity	Item number, Load Cell					
	SLP331D-RTU		SLP332D-RTU		SLP333D-RTU	
	C3	C6	C3	C6	C3	C6
10 kg / 22 lb	30700347	30700362	-	-	-	-
20 kg / 44 lb	30700348	30700363	-	-	-	-
30 kg / 66 lb	30700349	30700364	30700352	30700367	-	-
50 kg / 110 lb	30700350	30700365	30700353	30700368	30700356	30700371
100 kg / 220 lb	30700351	30700366	30700354	30700369	30700357	30700372
150 kg / 330 lb	-	-	-	-	30700358	30700373
200 kg / 440 lb	-	-	30700355	30700370	30700359	30700374
300 kg / 660 lb	-	-	-	-	30700360	30700375
500 kg / 1100 lb	-	-	-	-	30700361	30700376

## SLP33xD-RTU - Cable Table

Order information accessories	Cable length Item number				
	1 m	3 m	5 m	10 m	20 m
Cable M12 5-Pole Female-Male	-	-	30760822	30760823	30760824
Cable M12 5-Pole Female-Wires	30760825	30760826	30760827	30760848	30760849
Connector M12 5-Pole Y-branch	30760820				
Terminal Resistor M12 5-Pole 120 Ohm	30760821				

**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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For more information

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