

## The New Dimension In Automated Precision Weighing



### Ultra-compact

The SPC weighing systems feature state-of-the-art weighing performance in a weight sensor with a revolutionary 1 inch width.



### Compact electronic unit

The compact electronic unit comes with mounting clips for table mounting and integrated DIN rail brackets for control cabinet integration.



### High IP rating

With the optional washdown module, an increased IP rating of IP54 becomes possible when weighing and IP56 when using the washdown protection. Thus, it becomes possible to weigh in a dusty environment and use a washdown cleaning process.



### Expandable

Integrate the weight sensors as single units or as parallel weighing arrays and achieve highest throughput.



### SPC

### Ultra-Compact Precision Weight Sensor

Highest degree of miniaturization supports single or multi-sensor integration in precision weighing applications where installation space is a premium.

The SPC features a revolutionary design and is believed to be the smallest high-precision weight sensor in the world. In-process control and embedded weighing is now possible in any critical operation in your instrument or machine.

## Model specific weighing data

Type information	SPC115	SPC215	SPC214
Nominal capacity (nominal load)	10 g	20 g	20 g
Maximum capacity	11 g	21 g	21 g
Maximum preload <sup>M1)</sup>	4 g	4 g	4 g
Readability	0.01 mg	0.01 mg	0.1 mg
Internal adjustment	-	-	-
<b>Limit values <sup>M2)</sup></b>			
Repeatability ( $\sigma$ ) (nominal load) $\leq$ <sup>M3)</sup>	0.02 mg	0.02 mg	0.1 mg
Repeatability, with washdown module ( $\sigma$ ) (nominal load) $\leq$ <sup>M3)</sup>	0.05 mg	0.05 mg	0.1 mg
Linearity deviation $\leq$	0.05 mg	0.05 mg	0.2 mg
Linearity deviation, with washdown module $\leq$	0.1 mg	0.1 mg	0.2 mg
Eccentric load deviation (test load) $\leq$	0.12 mg (5 g)	0.12 mg (10 g)	0.4 mg (10 g)
Eccentric load deviation, with washdown module (test load) $\leq$	0.15 mg (5 g)	0.15 mg (10 g)	0.4 mg (10 g)
Sensitivity temperature drift (nominal load) $\leq$ <sup>M4)</sup>	0.02 mg/°C	0.04 mg/°C	0.04 mg/°C
<b>Typical values <sup>M5)</sup></b>			
Repeatability ( $\sigma$ ) (nominal load) $\leq$	0.01 mg	0.01 mg	0.08 mg
Settling time, nominal $\leq$ <sup>M6)</sup>	1.8 s	2.0 s	1.6 s
Settling time, fast $\leq$ <sup>M7)</sup>	0.6 s	0.7 s	0.5 s

**Ambient conditions**

Compensated temperature range <sup>M8)</sup>	10 °C to 30 °C
Operating temperature range	5 °C to 40 °C
Storage temperature range	-20 °C to 70 °C
Relative air humidity range <sup>M8)</sup>	20% to 80%
Warm-up time after power-on <sup>M8)</sup>	60 minutes

<sup>M1)</sup> Maximum preload on top of "preload reference" weighing pan to maintain maximum capacity (see "Scope of Delivery" or "Accessories" for preload reference pan).

<sup>M2)</sup> Applicable for stationary conditions within compensated temperature and relative air humidity range.

<sup>M3)</sup>  $\sigma$  = standard deviation (99.7% of weighing results within  $\pm 3 \sigma$ ).

<sup>M4)</sup> Weighing tests according to OIML R76 A.5.3 at stationary conditions.

<sup>M5)</sup> Applicable for stable environmental conditions and optimal filter settings.

<sup>M6)</sup> Time until weight value is repeatable (measured at nominal load).

<sup>M7)</sup> Time until weighing signal is within  $\pm 2 \times$  readability of end value (measured at 1/4 nominal load).

<sup>M8)</sup> Condition to meet the specified limit values.

## General data

**Electrical connection**

Power supply	Option 1: Power over Ethernet (IEEE 802.3af) Class 1 PD (< 3.84 W) Option 2: 12 – 24 V DC ( $\pm 10\%$ )
Connectors	2 x RJ45 (1 PoE), 2-way screw plug for DC power
Communication protocol	TCP/IP (EtherNet/IP, PROFINET coming soon)
Maximum weight update rate	92 values/s

**IP protection**

Sensor during weighing	IP30 / IP54 <sup>G2)</sup>
Sensor during cleaning <sup>G2)</sup>	IP56
Electronic unit	IP20

**Materials**

Weighing pan/platform	Stainless steel (1.4404 / 316L)
Weight sensor housing	Stainless steel (1.4404 / 316L)
Electronic unit housing	Stainless steel (1.4404 / 316L)
Cable	PVC / 1.4305
Seals	FPM, FDA compliant

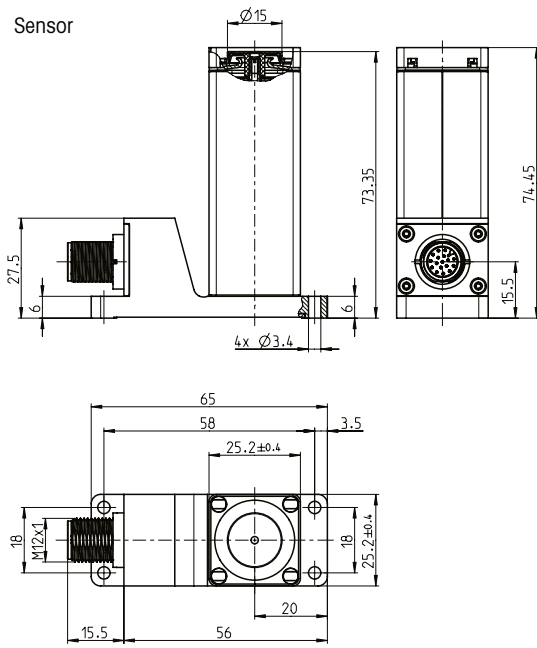
**Weights**

Weight Sensor	~ 285 g
Electronic Unit	~ 350 g

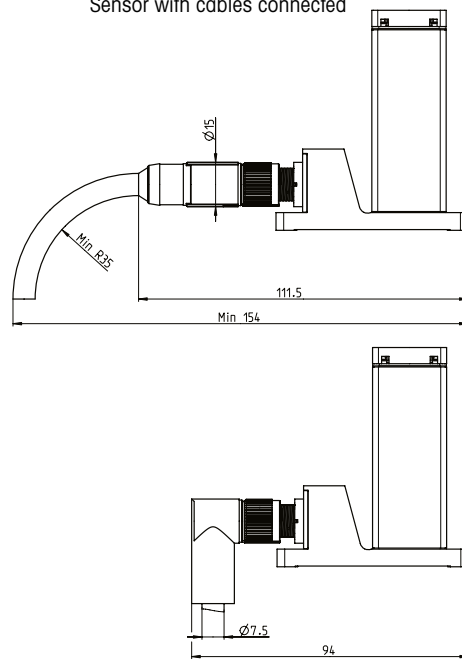
<sup>G2)</sup> Only with optional washdown configuration.

## Drawings (mm)

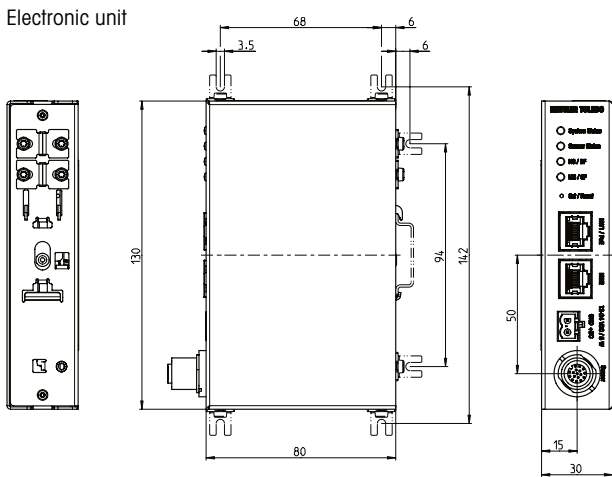
Sensor



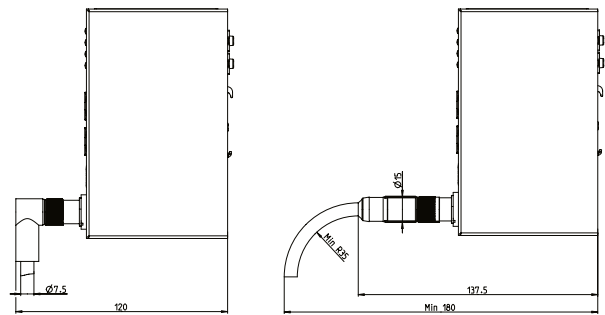
Sensor with cables connected



Electronic unit



Electronic unit with cables connected:



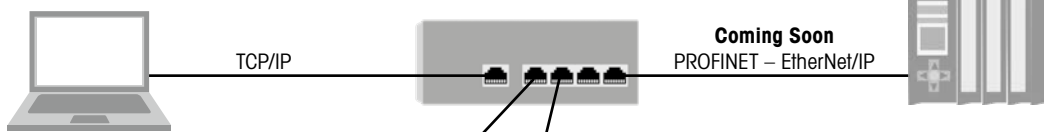
## Typical configurations

### Automation network configuration

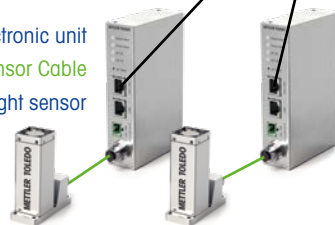
PC (for service and configuration)  
 ■ APW Link (free MT software)

PoE Switch (electronic unit can alternatively be powered by 12 – 24 V DC)

PLC



- SPC electronic unit
- Sensor Cable
- SPC weight sensor



- Scope of delivery
- Accessories from METTLER TOLEDO

## Scope of Delivery

Item	Description
Weight sensor	-
Weighing pan	Ø = 15 mm (preload reference)
Adapter weighing pan	Ø = 14 mm
Electronic unit	Integrated DIN rail clip, 4 clips for table mounting, 2-way screw plug for DC power
Production certificate	-
Declaration of conformity	-
User manual	-

## Accessories

Item	Description	Item number	Picture
Washdown module	Including washdown head, washdown adapter weighing pan, O-ring, sealing gasket, 4 x M2.5 (Torx T8)	302 363 76	
Stainless steel cover	Including O-ring, 4 x M2.5 (Torx T8) to attach washdown head	302 523 74	
Washdown adapter weighing pan		302 786 48	
Sensor cable	Cable 17p 0.5 m (M12f 180° – M12m 180°)	304 195 19	
Sensor cable	Cable 17p 1.5 m (M12f 180° – M12m 180°)	304 195 20	
Sensor cable	Cable 17p 3.0 m (M12f 180° – M12m 180°)	304 195 21	
Sensor cable	Cable 17p 0.5 m (M12f 180° – M12m 90°DN)	305 518 66	
Sensor cable	Cable 17p 1.5 m (M12f 180° – M12m 90°DN)	305 518 67	
Sensor cable	Cable 17p 3.0 m (M12f 180° – M12m 90°DN)	305 518 98	
Sensor cable	Cable 17p 3.0 m (M12f 90° UP – M12m 180°)	305 842 76	
Sensor cable	Cable 17p 3.0 m (M12f 90° DN – M12m 180°)	305 866 98	
Sensor cable	Cable 17p 1.5 m (M12f 90° DN – M12m 180°)	305 866 99	
Sensor cable	Cable 17p 0.5 m (M12f 90° DN – M12m 180°)	305 867 00	
Bubble level		305 496 37	
Power supply 24 VDC	Input: 100 – 240 VAC, Output: 24 VDC 12W, including Plug Type A/C/G/I	305 878 64	
PoE injector RJ45		303 261 11	
Converter TCP/IP to RS232		305 905 63	

## Order information

Model	Item number
SPC115	305 325 73
SPC215	305 325 74
SPC214	305 325 72

[www.mt.com/SPC](http://www.mt.com/SPC)

For more information

### METTLER TOLEDO Group

Industrial Division

Local contact: [www.mt.com/contacts](http://www.mt.com/contacts)

Subject to technical changes

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