

Precision load cell for measuring tensile and compressive forces



X-134-L

With inner diameter for force application



Inner diameter M16 x 1.5 mm	Inner diameter M30 x 1.5 mm	Inner diameter M40 x 1.5 mm	Inner diameter M60 x 2.0 mm
Ø 105 x 37 mm,	Ø 125 x 56 mm,	Ø 145 x 58 mm,	Ø 205 x 85 mm,
0...5 kN	0...100 kN	0...300 kN	0...1000 kN
0...10 kN	0...200 kN	0...500 kN	
0...20 kN	0...250 kN		
0...30 kN			
0...50 kN			
0...70 kN			

Features

- Solid steel housing
- Encapsulated version IP66
- With internal thread as force introduction
- Easy mounting with metal screws
- Specific measuring ranges available

Application

The load cell X-134-L is suitable for force measurement in applications where high accuracies are required. The load cells are calibratable and can be supplied with a recognized calibration certificate on request.

The sensors are based on proven strain gauge technology and provide a linear signal, proportional to the centrally applied compression force. The solid steel housing and the tight design according to IP66 guarantee trouble-free operation, even under difficult environmental conditions.

Ordering code

Description	Measuring range	Contact area in mm	Assembly	Specification
X-134-L-5kN-3.0m-4-0	0...5 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-10kN-3.0m-4-0	0...10 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-20kN-3.0m-4-0	0...20 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-30kN-3.0m-4-0	0...30 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-50kN-3.0m-4-0	0...50 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-70kN-3.0m-4-0	0...70 kN	Ø 105 x 37 mm	Internal thread M16x1.5	page 3
X-134-L-100kN-3.0m-6-0	0...100 kN	Ø 125 x 56 mm	Internal thread M30x1.5	page 4
X-134-L-200kN-3.0m-6-0	0...200 kN	Ø 125 x 56 mm	Internal thread M30x1.5	page 4
X-134-L-250kN-3.0m-6-0	0...250 kN	Ø 125 x 56 mm	Internal thread M30x1.5	page 4
X-134-L-300kN-3.0m-7-0	0...300 kN	Ø 145 x 58 mm	Internal thread M40x1.5	page 5
X-134-L-500kN-3.0m-7-0	0...500 kN	Ø 145 x 58 mm	Internal thread M40x1.5	page 5
X-134-L-1000kN-3.0m-8-0	0...1000 kN	Ø 205 x 85 mm	Internal thread M60x2.0	page 6

Precision load cell X-134-L

Ø 105 x 37 mm,

Till 70 kN



Specification

Performance

Measuring range / nominal force	0...5 kN 0...10 kN 0...20 kN 0...30 kN 0...50 kN 0...70 kN
Zero point unmounted	± 2 % from fullscale
Nonlinearity	± 0.05 % ~ 0.1 % from fullscale
Hysteresis	± 0.05 % from fullscale
Repeatability	± 0.05 % vom Endwert
Temperature influence on full scale	± 0.05 % FS /10°C
Temperature influence on zero point	± 0.05 % FS /10°C

Electrical data

Output signal referred to final value	+ 2.0 mV/V ± 10 %
Bridge resistance / sensor element strain gauge full bridge	700 Ohm
Recommended bridge supply	5 - 10 V

Materials

Housing	Steel
Cable	PVC

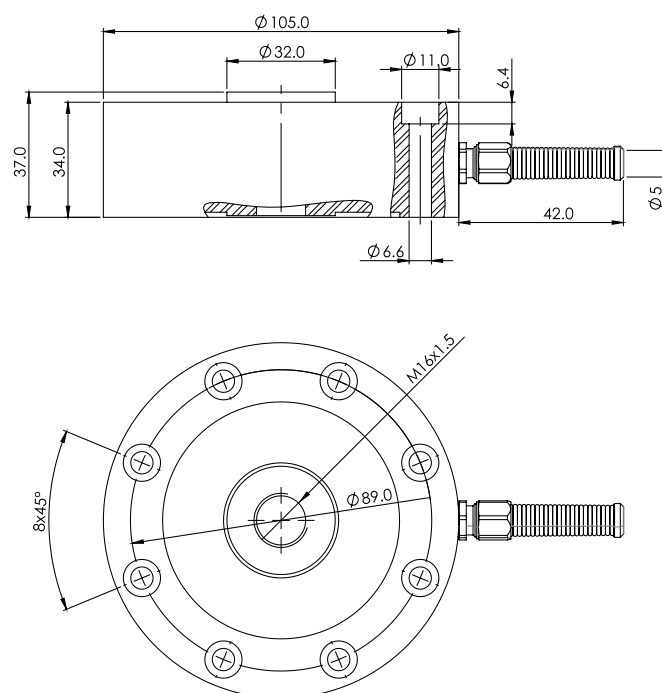
Mechanical data

Force application	Female thread M16 x 1.5
Overload	120 % of final value
Electrical connection	Connection cable
Cable length	3 m
Cable diameter	5 mm
Plug type	Open stranded wires, connectors available on request

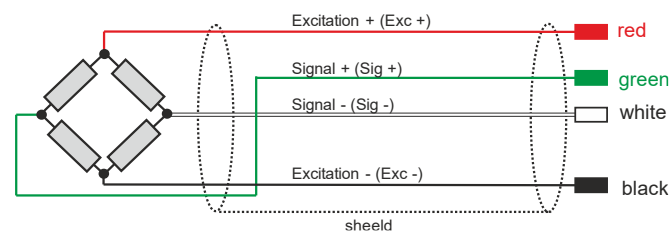
Environmental data

Ambient temperature	-20...80 °C
Compensated temperature range	-10...60 °C
Protection rate	IP 66

Mechanical dimensions



Wiring



Ordering code

The load cell is supplied without mounting screws.

For detailed ordering information, see page 2.

Precision load cell X-134-L

Ø 125 x 56 mm,

Till 250 kN



Specification

Performance

Measuring range / nominal force	0...100 kN 0...200 kN 0...250 kN
Zero point unmounted	± 0.05 % ~ 0.1 % from fullscale
Nonlinearity	± 0.05 % from fullscale
Hysteresis	± 0.05 % vom Endwert
Repeatability	± 0.05 % FS /10°C
Temperature influence on full scale	± 0.05 % FS /10°C
Temperature influence on zero point	± 2 % from fullscale

Elektrical data

Output signal referred to final value	+ 2.0 mV/V ± 10 %
Bridge resistance / sensor element strain gauge full bridge	700 Ohm
Recommended bridge supply	5 - 10 V

Materials

Housing	Steel
Cable	PVC

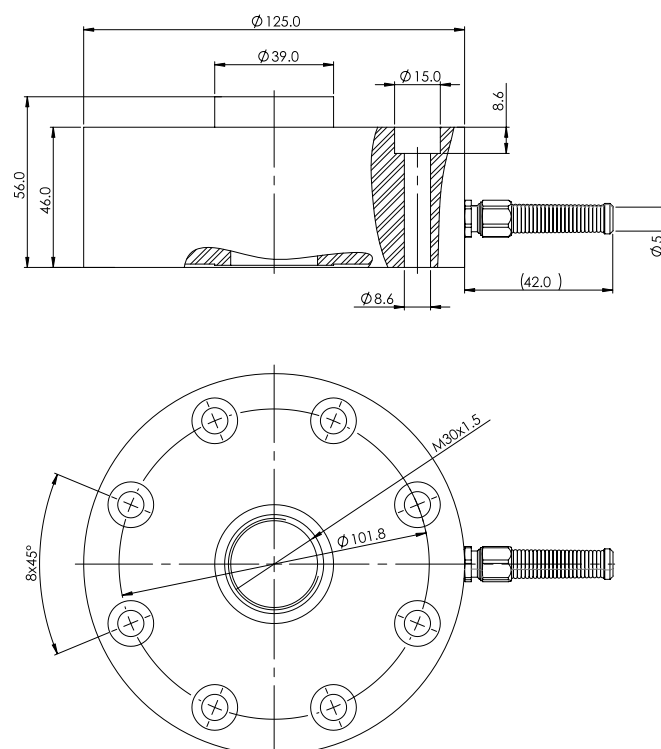
Mechanical data

Force application	Female thread M30 x 1.5
Overload	120 % of final value
Electrical connection	Connection cable
Cable length	3 m
Cable diameter	5 mm
Plug type	Open stranded wires, connectors available on request

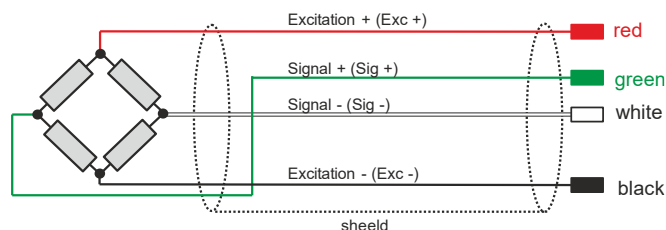
Environmental data

Ambient temperature	-20...80 °C
Compensated temperature range	-10...60 °C
Protection rate	IP 66

Mechanical dimensions



Wiring



Ordering code

The load cell is supplied without mounting screws.

For detailed ordering information, see page 2.

Precision load cell X-134-L

Ø 145 x 58 mm,

Till 500 kN



Specification

Performance

Measuring range / nominal force	0...300 kN 0...500 kN
Zero point unmounted	± 2 % from fullscale
Nonlinearity	± 0.05 % ~ 0.1 % from fullscale
Hysteresis	± 0.05 % from fullscale
Repeatability	± 0.05 % vom Endwert
Temperature influence on full scale	± 0.05 % FS /10°C
Temperature influence on zero point	± 0.05 % FS /10°C

Electrical data

Output signal referred to final value	+ 2.0 mV/V ± 10 %
Bridge resistance / sensor element strain gauge full bridge	700 Ohm
Recommended bridge supply	5 - 10 V

Materials

Housing	Steel
Cable	PVC

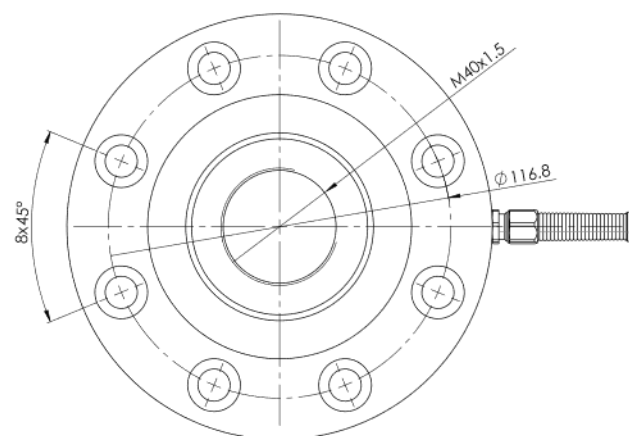
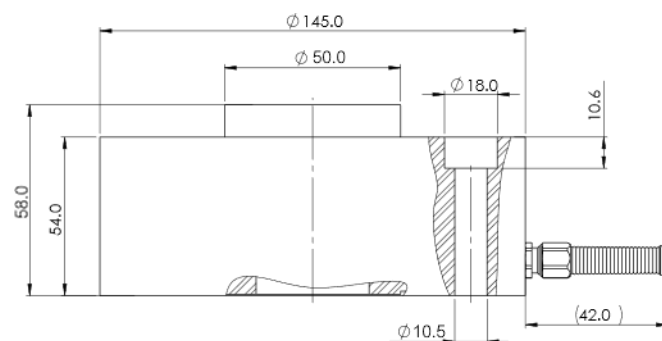
Mechanical data

Force application	Female thread M40 x 1.5
Overload	120 % of final value
Electrical connection	Connection cable
Cable length	3 m
Cable diameter	5 mm
Plug type	Open stranded wires, connectors available on request

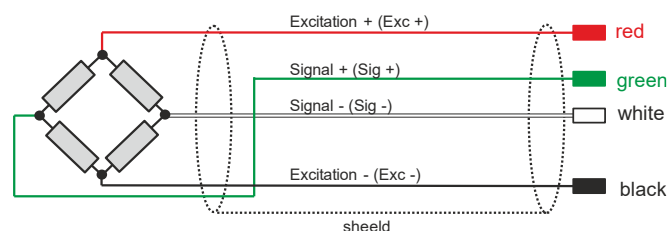
Environmental data

Ambient temperature	-20...80 °C
Compensated temperature range	-10...60 °C
Protection rate	IP 66

Mechanical dimensions



Wiring



Ordering code

The load cell is supplied without mounting screws.

For detailed ordering information, see page 2.

Precision load cell X-134-L

Ø 205 x 85 mm,

Till 1000 kN



Specification

Performance

Measuring range / nominal force	0...1000 kN
Zero point unmounted	± 2 % from fullscale
Nonlinearity	± 0.05 % ~ 0.1 % from fullscale
Hysteresis	± 0.05 % from fullscale
Repeatability	± 0.05 % vom Endwert
Temperature influence on full scale	± 0.05 % FS /10°C
Temperature influence on zero point	± 0.05 % FS /10°C

Electrical data

Output signal referred to final value	+ 2.0 mV/V ± 10 %
Bridge resistance / sensor element strain gauge full bridge	700 Ohm
Recommended bridge supply	5 - 10 V

Materials

Housing	Steel
Cable	PVC

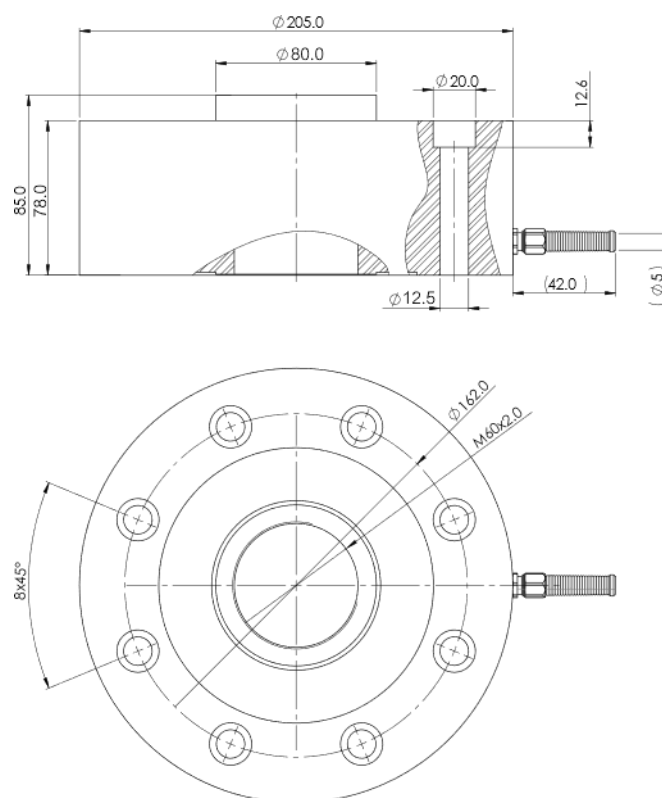
Mechanical data

Force application	Female thread M60 x 1.5
Overload	120 % of final value
Electrical connection	Connection cable
Cable length	3 m
Cable diameter	5 mm
Plug type	Open stranded wires, connectors available on request

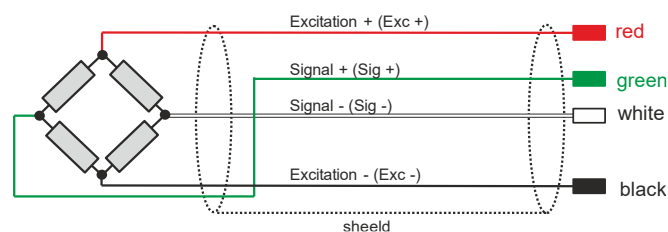
Environmental data

Ambient temperature	-20...80 °C
Compensated temperature range	-10...60 °C
Protection rate	IP 66

Mechanical dimensions



Wiring



Ordering code

The load cell is supplied without mounting screws.

For detailed ordering information, see page 2.

For force sensors, there are the following points to consider regarding accuracy:

1. linearity, repeatability and hysteresis (combined error).

The linearity, repeatability and hysteresis specify the measurement deviation compared to the ideal characteristic curve. This maximum measurement deviation is specified in relation to the final value. I.e. for example an inaccuracy of 0.15 % FS corresponds to a maximum measurement deviation of 0.375 kN over the entire measurement range for a force sensor with a measurement range of 0...250 kN.

2. sensitivity

In the data sheet a sensitivity of the sensors (2.0 mV/V) is given. However, the sensitivity is not always exactly the same. For this reason, the deviation of the sensitivity is specified.