



Superior Clamping and Gripping



Product Information

Anti-collision and overload protection sensor OPS

Compliant. Highly responsive. Simplified monitoring.

OPS collision and overload sensor

Collision and overload protection with automatic reset for protecting robots and handling units against damage resulting from collisions or overload conditions.

Field of application

Standard solution for all robot applications whereby the robot, the tool or the workpiece are to be protected against greater damages in case of a collision.



Advantages – Your benefits

Triggering force and torque can be adjusted via the operating pressure for optimal protection of your robots and components

Integrated monitoring for signal transmission in case of collision, whereby the robot can be stopped

ISO adapter plates as an option for easy assembly to most of robot types without any manufacturing costs/ work



Sizes
Quantity: 4



Triggering force F^d
500 .. 7000 N



Trigger moment M_x
7.5 .. 430 Nm



Trigger moment M_y
7.5 .. 430 Nm

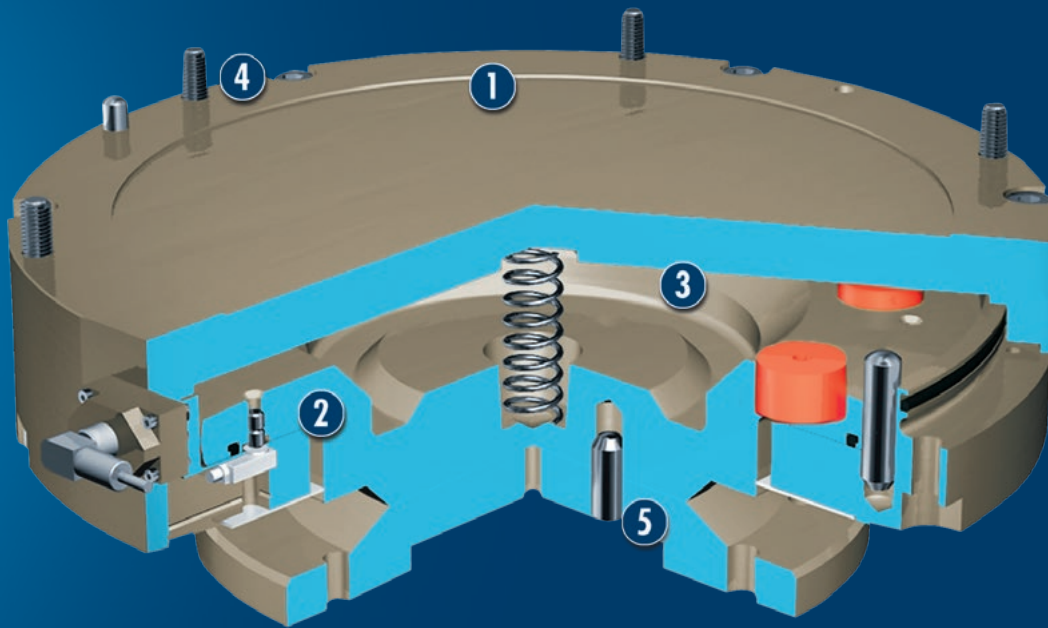


Trigger moment M_z
15 .. 450 Nm

Functional description

In case of a collision, the tool plate deflects while simultaneously actuating the system's emergency stop mechanism.

After deflection a manual reset of the OPS can be done and the unit can be returned into its original position.



- ① **Housing**
Weight-optimized due to the use of high-strength aluminum alloy
- ② **Sensor system**
for reliable electronic monitoring

- ③ **Pneumatic pistons**
for easy responsiveness by pressure
- ④ **Centering and mounting possibilities**
for easy and fast assembly
- ⑤ **Mounting flange**
deflects in the event of a collision

CAD data, operating manuals and other current product documents can be found online.

General notes about the series

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Scope of delivery: Angular plug with 5 m cable and open wire strand, operating and maintenance instructions, Manufacturer's Declaration

Warranty: 24 months

Harsh environmental conditions: Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

Handling weight: is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

Application example

Assembly unit for intermediate sleeves with various diameters. The unit is equipped with a collision sensor to prevent damages.

- ❶ PFH 2-finger parallel gripper with workpiece-specific gripper fingers
- ❷ OPS collision sensor



SCHUNK offers more ...

The following components make the product OPS even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Quick-Change-System



Manual Gripper Change System



Rotary feed-through



Parallel gripper



Centric gripper



Angular gripper

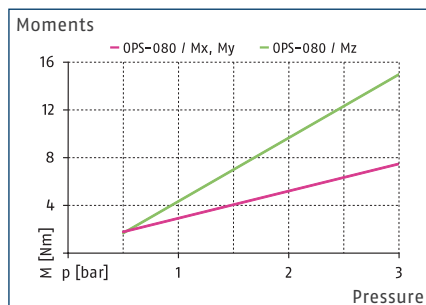
① Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

OPS 080

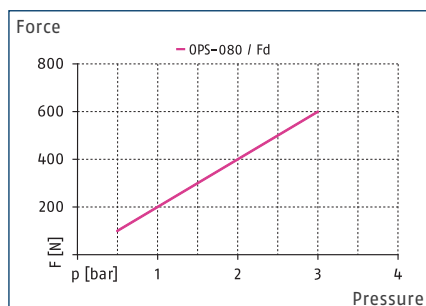
Anti-collision and overload protection sensor



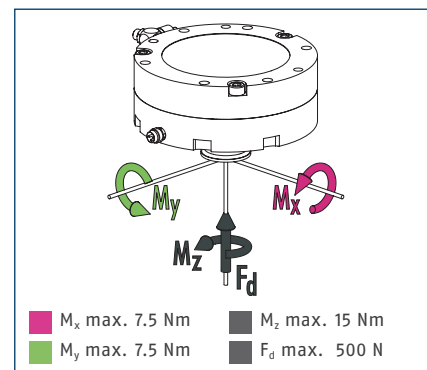
Triggering torque M^x , M^y , M^z



Triggering force F^d



Forces and moments

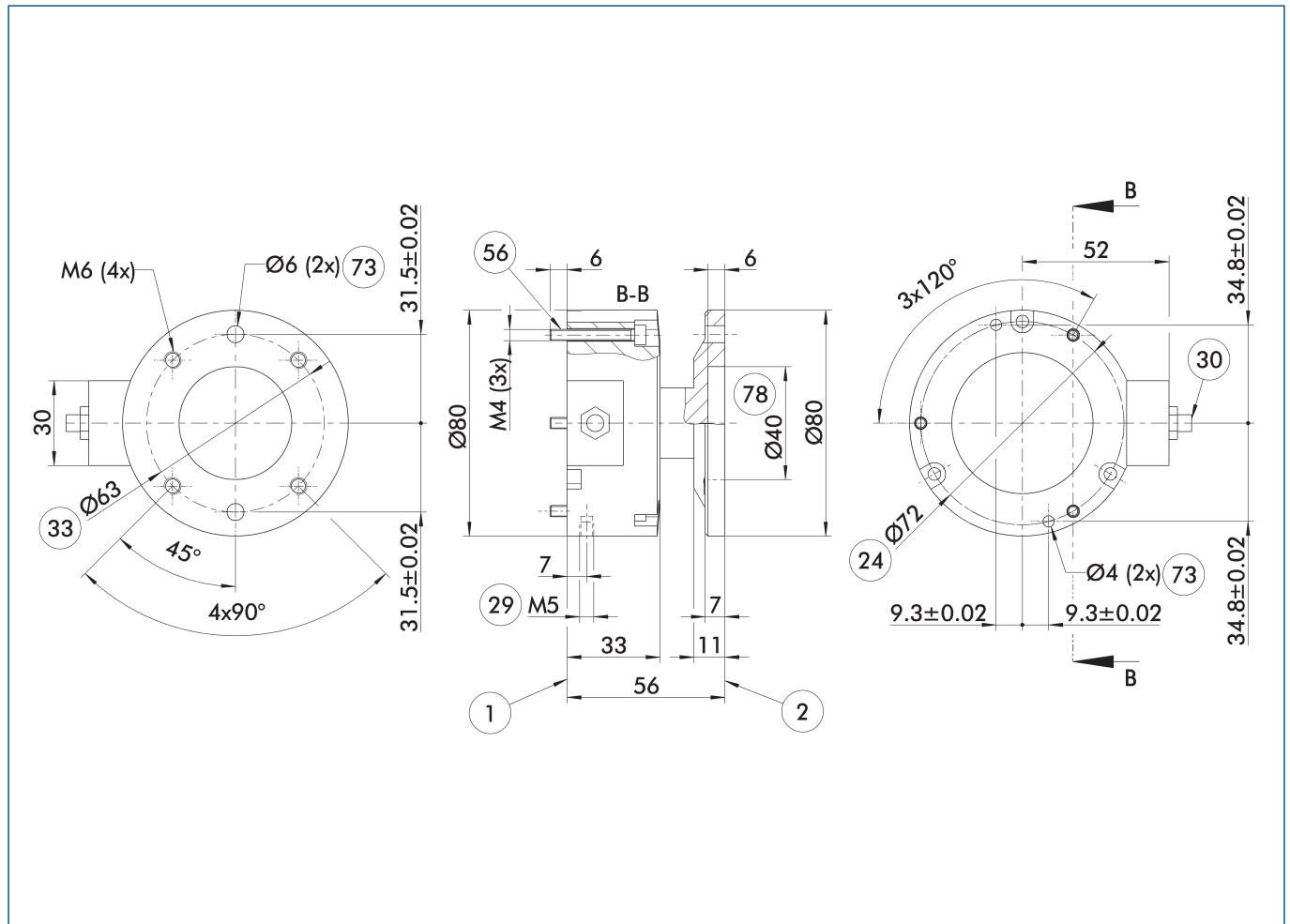


① The design of a collision sensor is defined by the occurring forces and moments in your application.

Technical data

Description		OPS-080
ID		0321125
Axial deflection	[mm]	12
Angular deflection	[°]	12
Deflection, rotatory	[°]	360
Min. triggering moment, angular M _x , M _y	[Nm]	2
Supply voltage	[V]	10/30
Repeat accuracy	[mm]	±0.02
Responsiveness	[mm]	0.1
Repeat accuracy, rotary	[min]	5
Min./max. operating pressure	[bar]	0.5/3
Weight	[kg]	0.4
Min./max. ambient temperature	[°C]	5/60

Main view



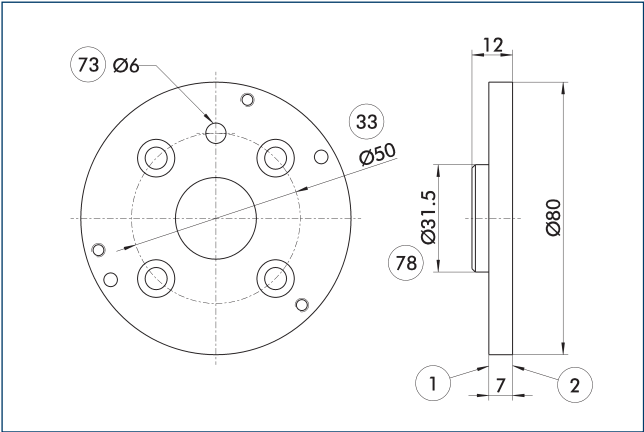
The main view shows the unit in its basic version.

- | | |
|---|--------------------------------------|
| ① Robot-side connection | ③③ DIN ISO-9409 bolt circle |
| ② Tool-side connection | ⑤⑥ Included in the scope of delivery |
| ②④ Bolt circle | ⑦③ Fit for centering pins |
| ②⑨ Air connection P | ⑦⑧ Fit for centering |
| ③① Cable connector in enclosed pack with 5 m connection cable | |

OPS 080

Anti-collision and overload protection sensor

Adapter plate ISO 9409-A50-R

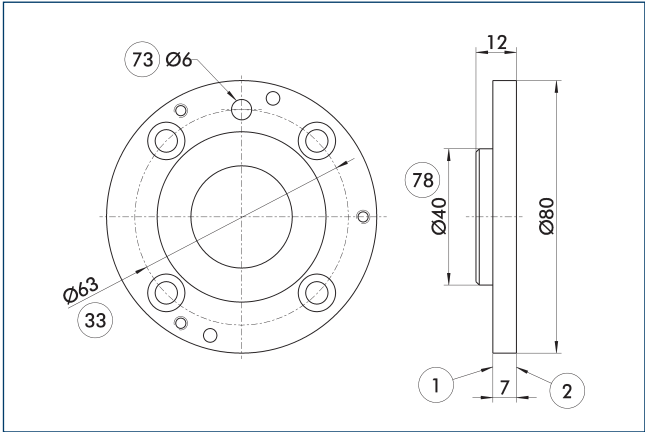


- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-50-4-M6.

Description	ID	
Adapter plate		
A-OPS-080-ISO-A50-R	0321114	

Adapoter plate ISO 9409-A63-R



- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-63-4-M6.

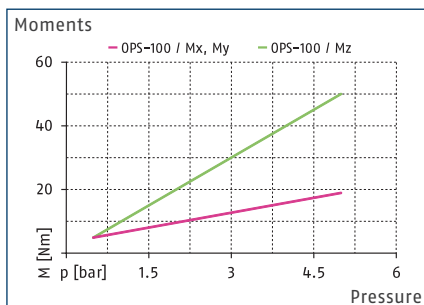
Description	ID	
Adapter plate		
A-OPS-080-ISO-A63-R	0321115	

OPS 100

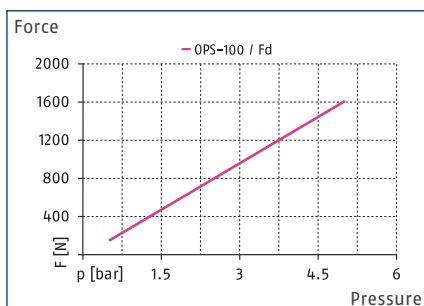
Anti-collision and overload protection sensor



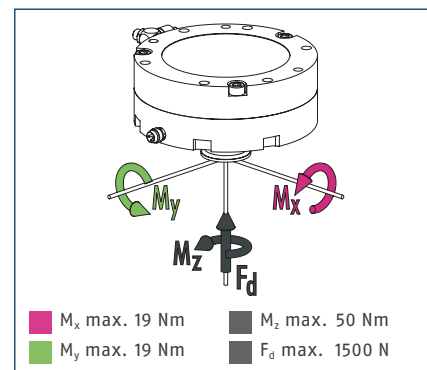
Triggering torque M_x , M_y , M_z



Triggering force F_d



Forces and moments

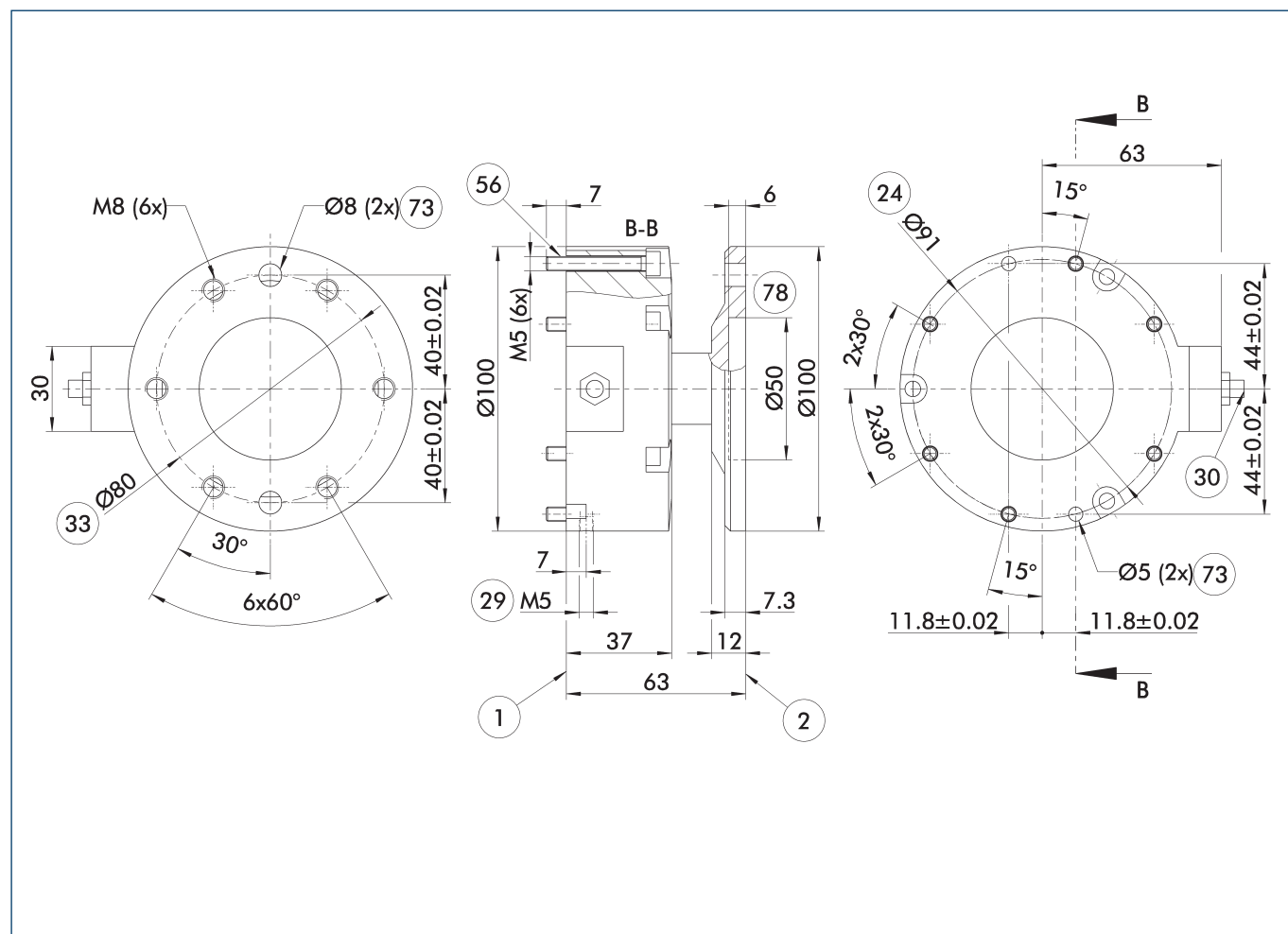


① The design of a collision sensor is defined by the occurring forces and moments in your application.

Technical data

Description		OPS-100
ID		0321130
Axial deflection	[mm]	14
Angular deflection	[°]	12
Deflection, rotatory	[°]	360
Min. triggering moment, angular M_x, M_y	[Nm]	5
Supply voltage	[V]	10/30
Repeat accuracy	[mm]	±0.02
Responsiveness	[mm]	0.1
Repeat accuracy, rotary	[min]	5
Min./max. operating pressure	[bar]	0.5/5
Weight	[kg]	0.7
Min./max. ambient temperature	[°C]	5/60

Main view



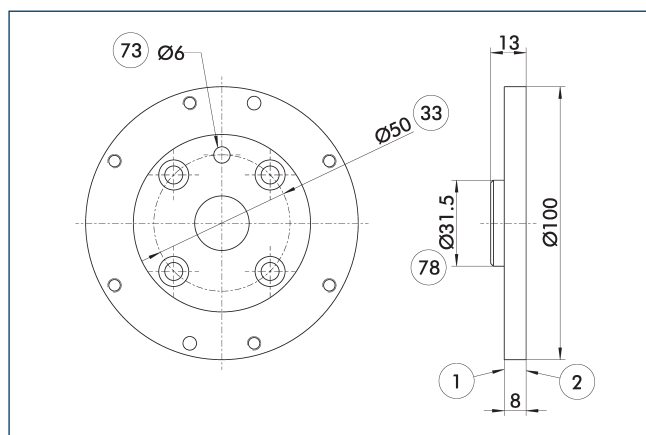
The main view shows the unit in its basic version.

- | | |
|---|--------------------------------------|
| ① Robot-side connection | ③③ DIN ISO-9409 bolt circle |
| ② Tool-side connection | ⑤⑥ Included in the scope of delivery |
| ②④ Bolt circle | ⑦③ Fit for centering pins |
| ②⑨ Air connection P | ⑦⑧ Fit for centering |
| ③① Cable connector in enclosed pack with 5 m connection cable | |

OPS 100

Anti-collision and overload protection sensor

Adapter plate ISO 9409-A50-R

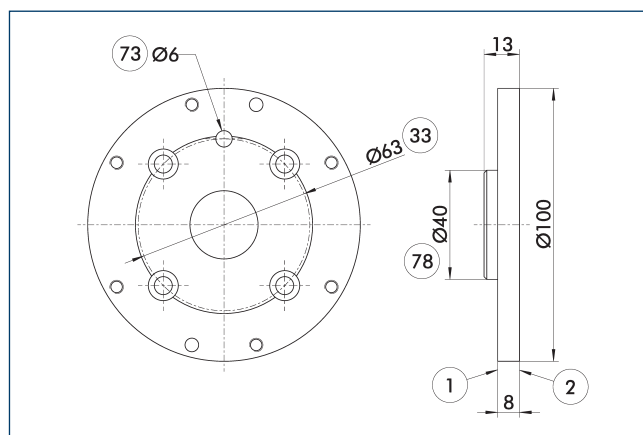


- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-50-4-M6.

Description	ID	
Adapter plate		
A-OPS-100-ISO-A50-R	0321122	

Adapter plate ISO 9409-A63-R

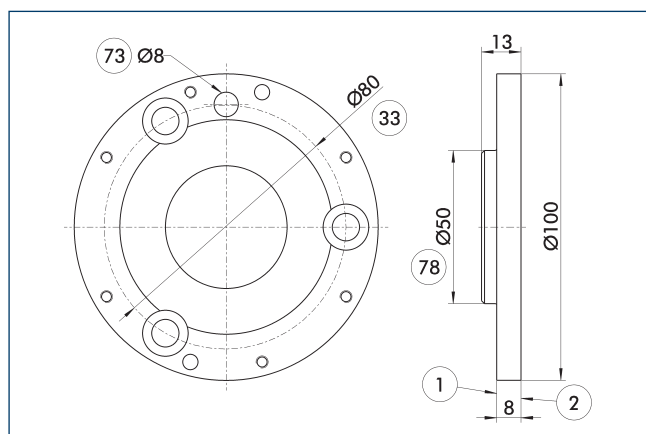


- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-63-4-M6.

Description	ID	
Adapter plate		
A-OPS-100-ISO-A63-R	0321123	

Adapter plate ISO 9409-A80-R



- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-80-6-M8.

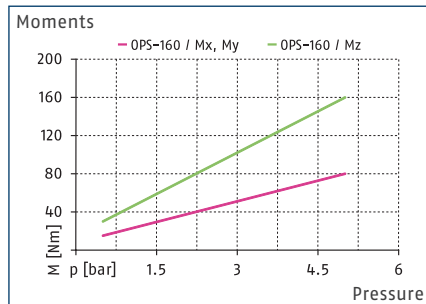
Description	ID	
Adapter plate		
A-OPS-100-ISO-A80-R	0321116	

OPS 160

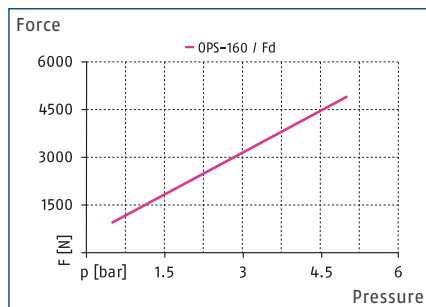
Anti-collision and overload protection sensor



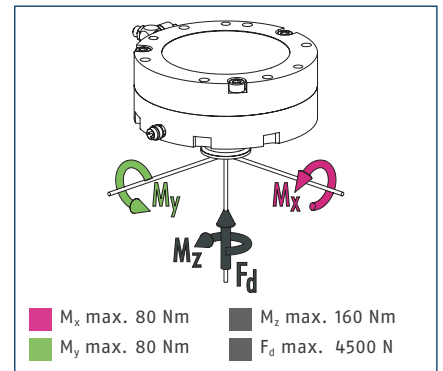
Triggering torque M_x , M_y , M_z



Triggering force F_d



Forces and moments

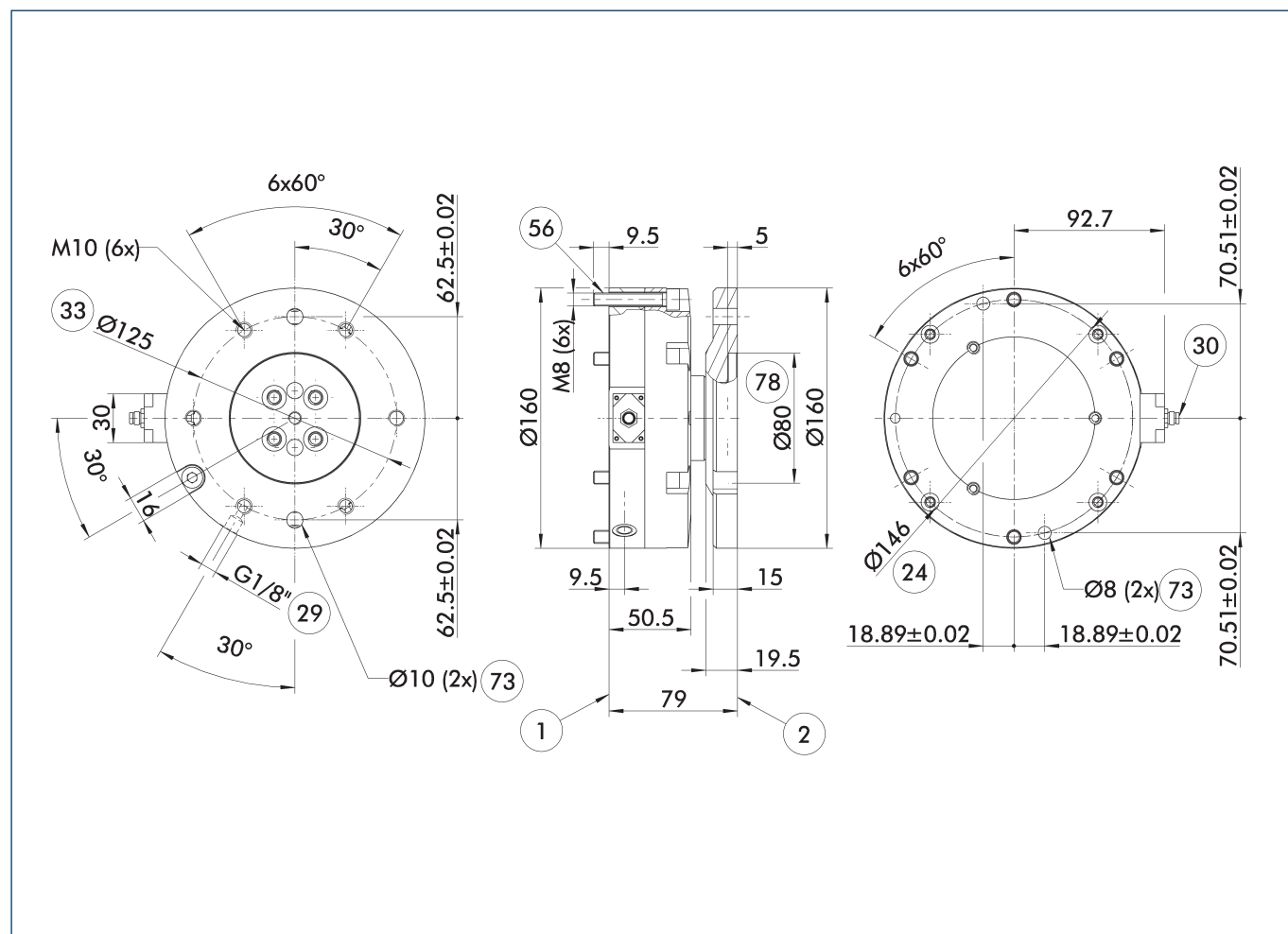


① The design of a collision sensor is defined by the occurring forces and moments in your application.

Technical data

Description		OPS-160
ID		0321135
Axial deflection	[mm]	8
Angular deflection	[°]	5
Deflection, rotatory	[°]	360
Min. triggering moment, angular M_x, M_y	[Nm]	30
Supply voltage	[V]	10/30
Repeat accuracy	[mm]	±0.02
Responsiveness	[mm]	0.2
Repeat accuracy, rotary	[min]	5
Min./max. operating pressure	[bar]	0.5/5
Weight	[kg]	4.3
Min./max. ambient temperature	[°C]	5/60

Main view



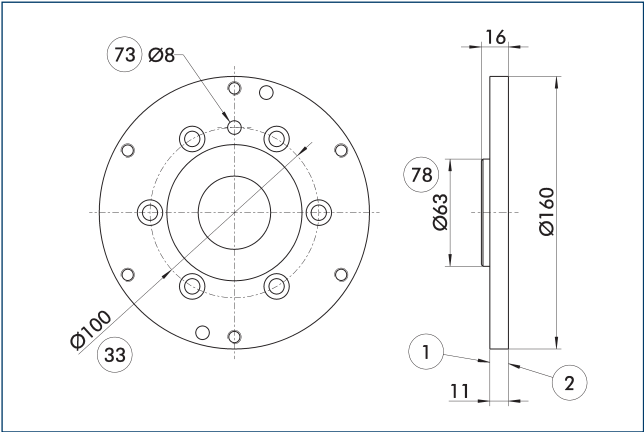
The main view shows the unit in its basic version.

- | | |
|---|--------------------------------------|
| ① Robot-side connection | ③③ DIN ISO-9409 bolt circle |
| ② Tool-side connection | ⑤⑥ Included in the scope of delivery |
| ②④ Bolt circle | ⑦③ Fit for centering pins |
| ②⑨ Air connection P | ⑦⑧ Fit for centering |
| ③① Cable connector in enclosed pack with 5 m connection cable | |

OPS 160

Anti-collision and overload protection sensor

Adapter plate ISO 9409-A100-R

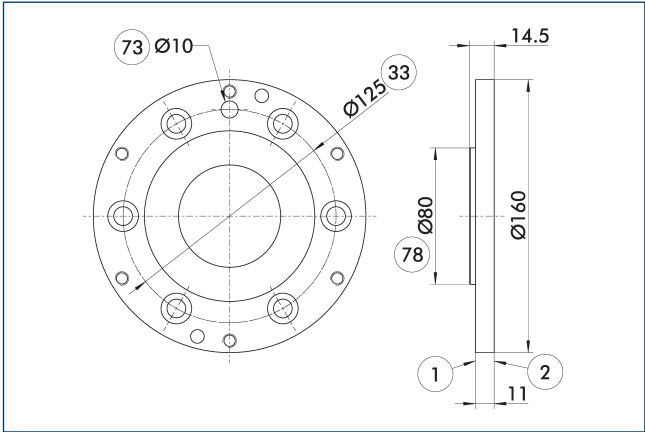


- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-100-6-M8.

Description	ID	
Adapter plate		
A-OPS-160-ISO-A100-R	0321224	

Adapter plate ISO 9409-A125-R



- ① Robot-side connection
- ② Tool-side connection
- ③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑦⑧ Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-125-6-M10.

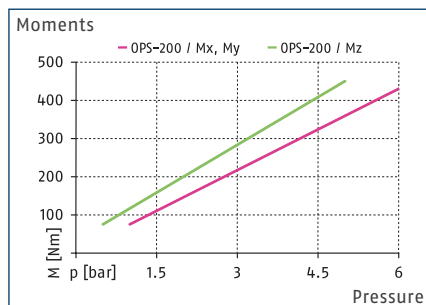
Description	ID	
Adapter plate		
A-OPS-160-ISO-A125-R	0321117	

OPS 200

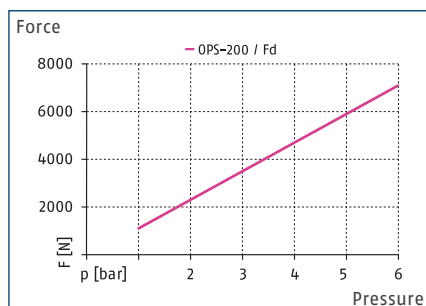
Anti-collision and overload protection sensor



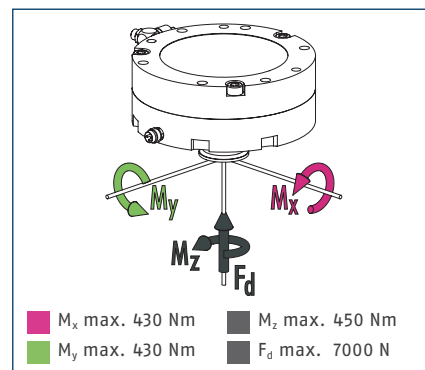
Triggering torque M_x , M_y , M_z



Triggering force F_d



Forces and moments

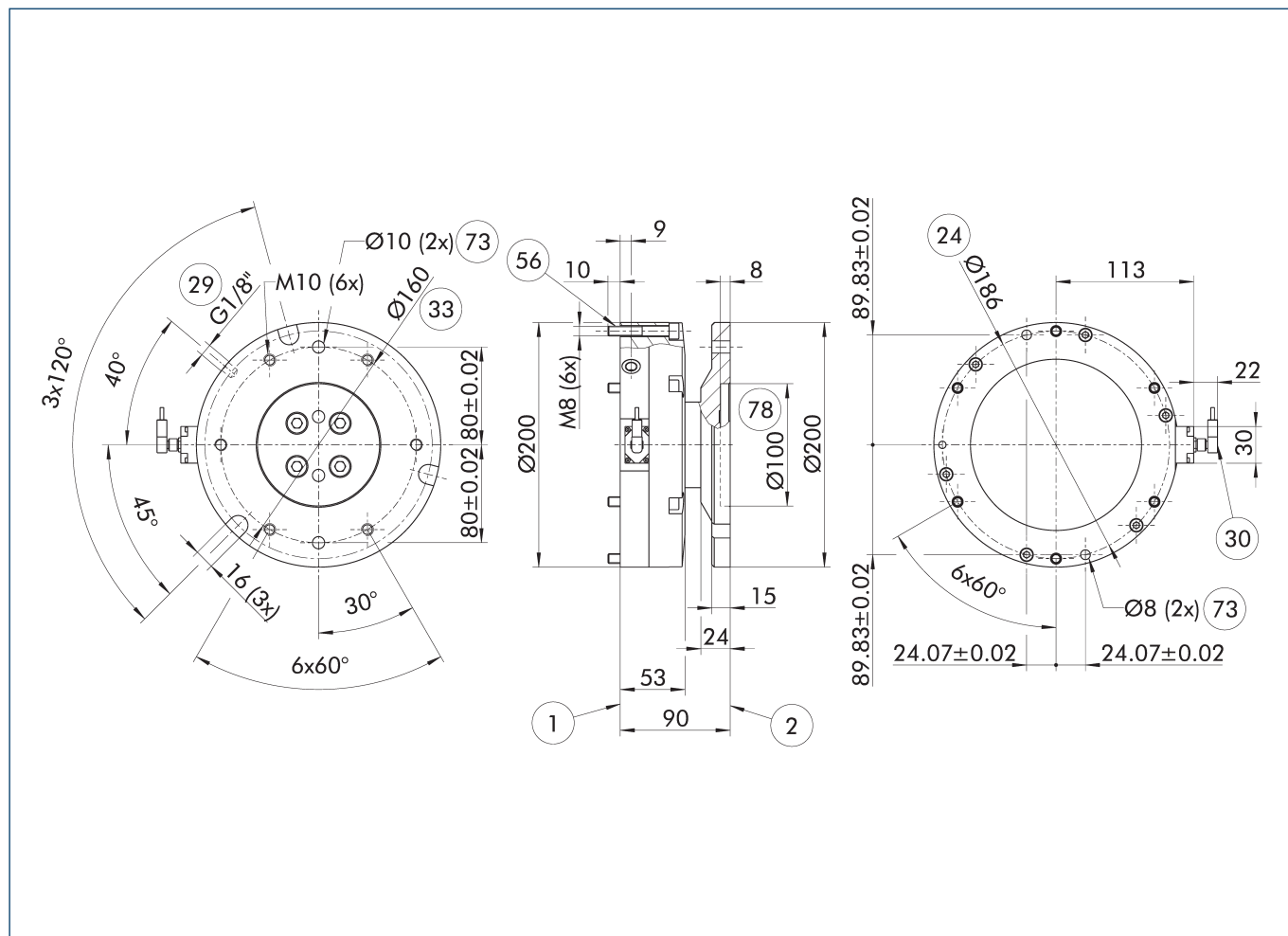


① The design of a collision sensor is defined by the occurring forces and moments in your application.

Technical data

Description		OPS-200	OPS-200-VS
ID		0321140	0321141
Axial deflection	[mm]	9.5	9.5
Angular deflection	[°]	4	4
Deflection, rotatory	[°]	360	45
Min. triggering moment, angular M_x, M_y	[Nm]	90	90
Supply voltage	[V]	10/30	10/30
Repeat accuracy	[mm]	±0.05	±0.05
Responsiveness	[mm]	0.3	0.3
Repeat accuracy, rotary	[min]	5	5
Min./max. operating pressure	[bar]	1/6	1/6
Weight	[kg]	7	7
Min./max. ambient temperature	[°C]	5/60	5/60

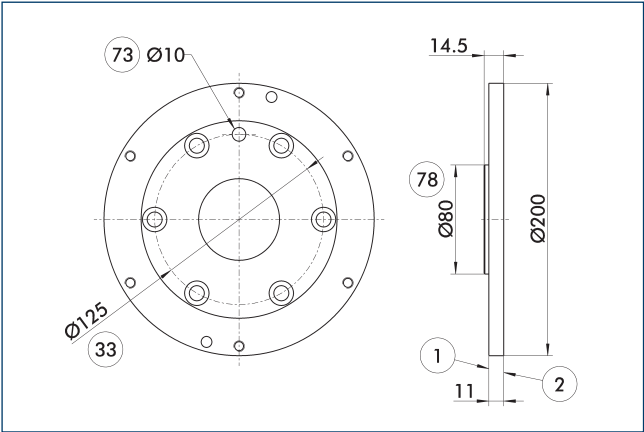
Main view



The main view shows the unit in its basic version.

- | | |
|---|--------------------------------------|
| ① Robot-side connection | ③③ DIN ISO-9409 bolt circle |
| ② Tool-side connection | ⑤⑥ Included in the scope of delivery |
| ②④ Bolt circle | ⑦③ Fit for centering pins |
| ②⑨ Air connection P | ⑦⑧ Fit for centering |
| ③① Cable connector in enclosed pack with 5 m connection cable | |

Adapter plate ISO 9409-A125-R



- 1

Robot-side connection
- 2

Tool-side connection
- 33

DIN ISO-9409 bolt circle
- 73

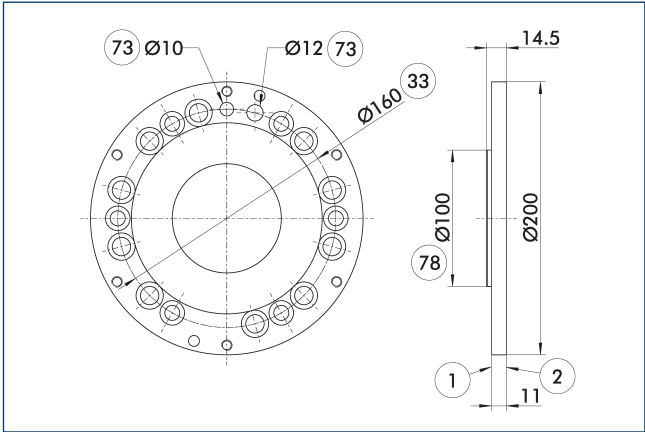
Fit for centering pins
- 78

Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-125-6-M10.

Description	ID	
Adapter plate		
A-OPS-200-ISO-A125-R	0321126	

Adapter plate ISO 9409-A160-R



- 1

Robot-side connection
- 2

Tool-side connection
- 33

DIN ISO-9409 bolt circle
- 73

Fit for centering pins
- 78

Fit for centering

Robot-side adapter plate to mount the OPS to a mounting pattern according to ISO 9409-160-6-M10 and ISO 9409-160-10-M12.

Description	ID	
Adapter plate		
A-OPS-200-ISO-A160-R	0321118	

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Folgen Sie uns



J. Lehmann

Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for
safe, precise gripping and holding.
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