

FAST MOVING TECHNOLOGY

STÄUBLI

Robotic tool changing systems for payloads up to 2500 kg

Productivity for all industrial sectors



Perfect solutions for your automated production

Stäubli's robotic tool changing systems are based on a modular product concept. All transfer technologies can be flexibly combined to create customized solutions for any robot. Benefit from optimized functionality and easy integration into your production processes.

1 Broad technology portfolio
Versatile and flexible drive technologies for all robotic applications.

4 Maximum safety
Safety technology certified to Performance Level d, Category 3 for comprehensive protection of personnel and installation.

2 Easy configuration
Quick and easy to configure tool changing systems for maximum robot flexibility.

5 Global solution partner
Local technical support around the world to help you choose the best robotic tool changing system for your application.

3 High-quality locking system
Highly accurate, efficient and durable locking technology for maximum repeatability over life.

[MORE FROM PAGE 8](#)

Robotic tool changing systems for all payload ranges



Payloads up to 55 kg



Payloads up to 350 kg



Payloads up to 2500 kg

Base units



MPS 631/631S

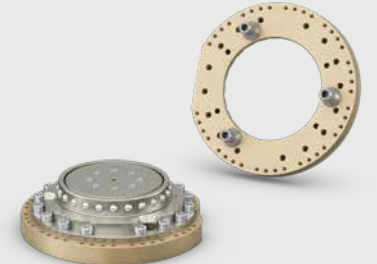
PCD Ø 160 mm, PCD Ø 160 + 200 mm,
max. payload 630 kg

[SYSTEM STRUCTURE FROM PAGE PAGE 4](#)



MPS 1531

PCD Ø 200 mm,
max. payload 1530 kg



MPS 2531

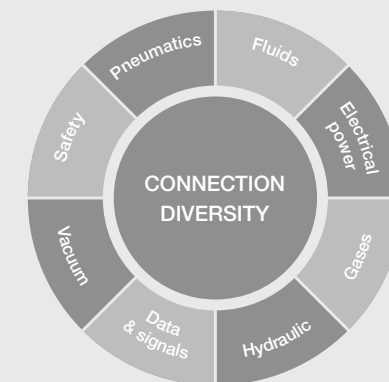
PCD Ø 315 mm,
max. payload 2500 kg

[SYSTEM COMPARISON PAGE 16](#)

Transfer technologies

The wide range of transfer modules for all media, signals, data and power connections guarantees a very high diversity of connections.

[OVERVIEW ON PAGE 44](#)



Tool stand systems and accessories

Versatile solutions for a secure tool stand.

[ACCESSORIES FROM PAGE 84](#)

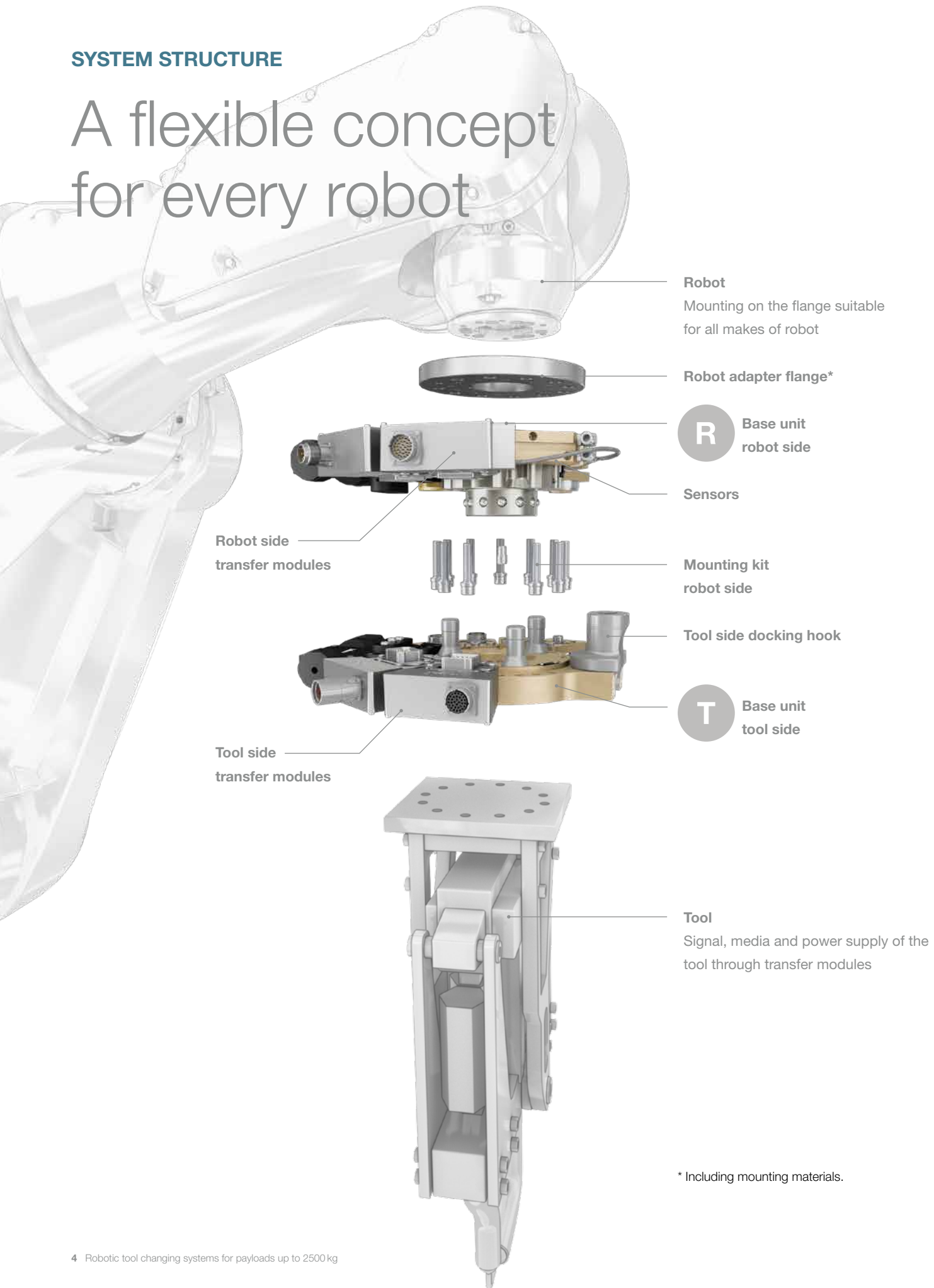
[TOOL STAND FROM PAGE 86](#)

Customized solutions

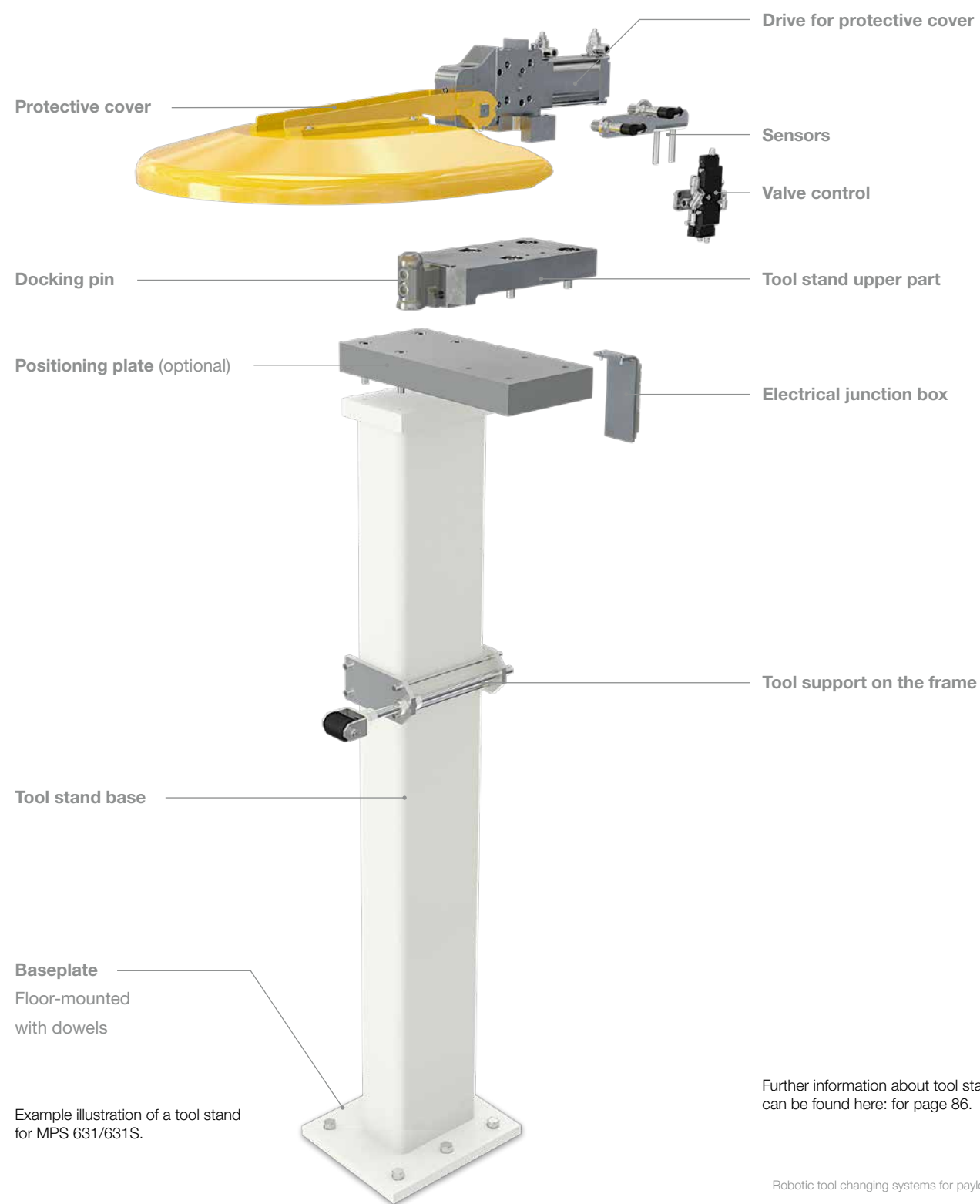
For applications that require special base units or customized transfer modules, we can design and manufacture robotic tool changing systems to meet your specific requirements. Our technical consultants are available worldwide.

[DETAILS FROM PAGE 15](#)

A flexible concept for every robot



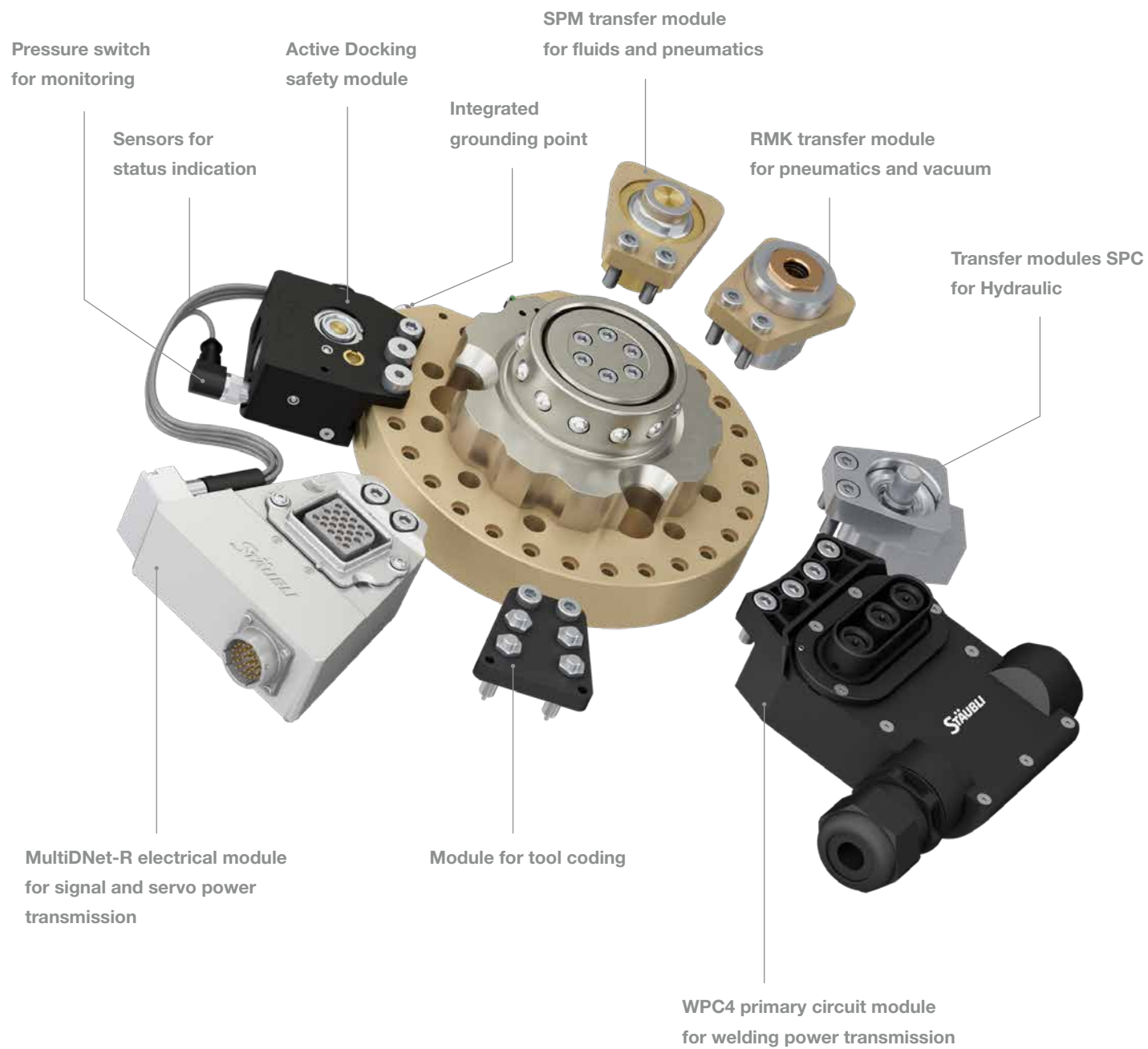
Optimal system integration for maximum efficiency



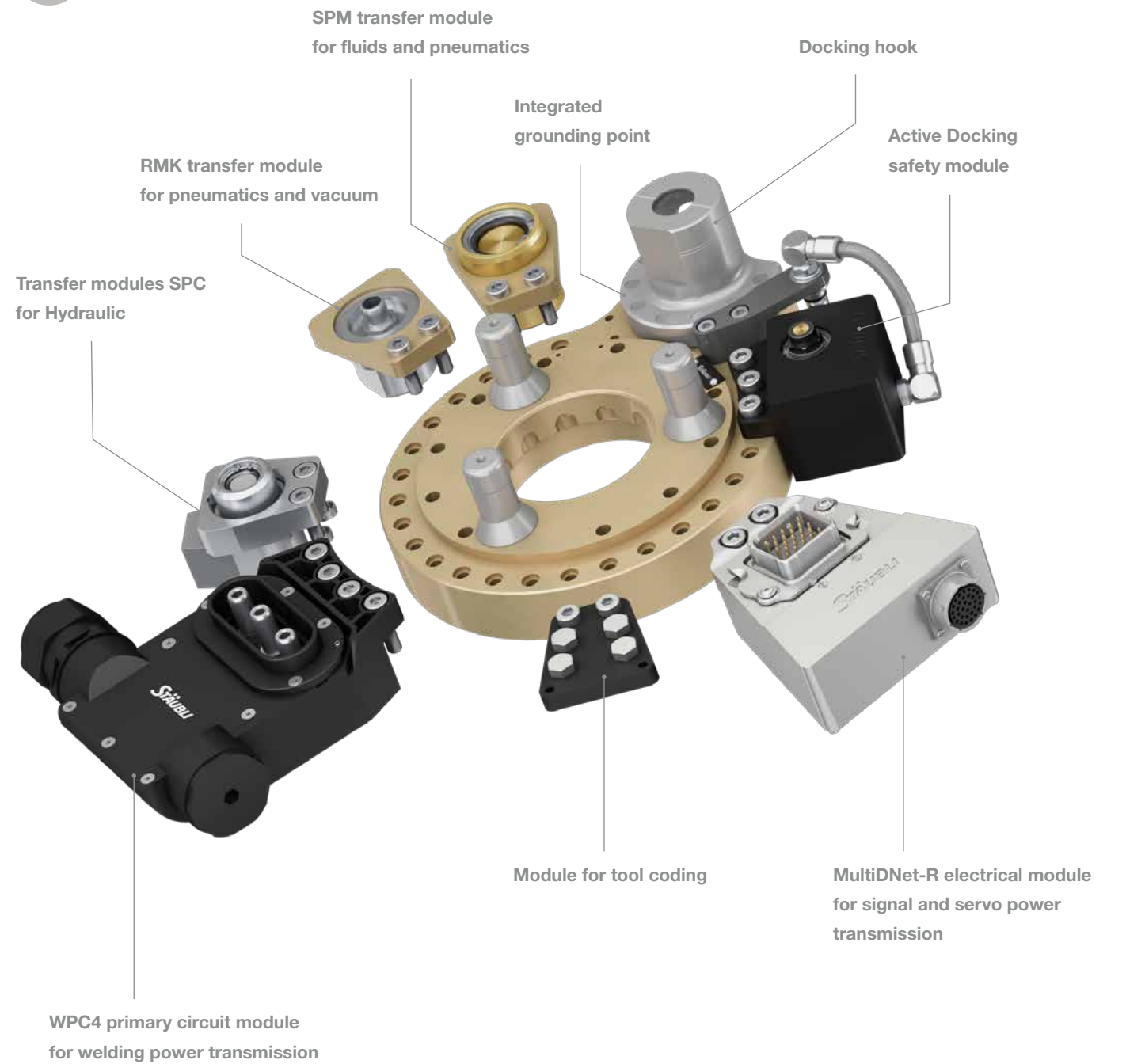
Further information about tool stand technology can be found here: for page 86.

Tool changing system robot and tool side

R Base unit
robot side



T Base unit
tool side

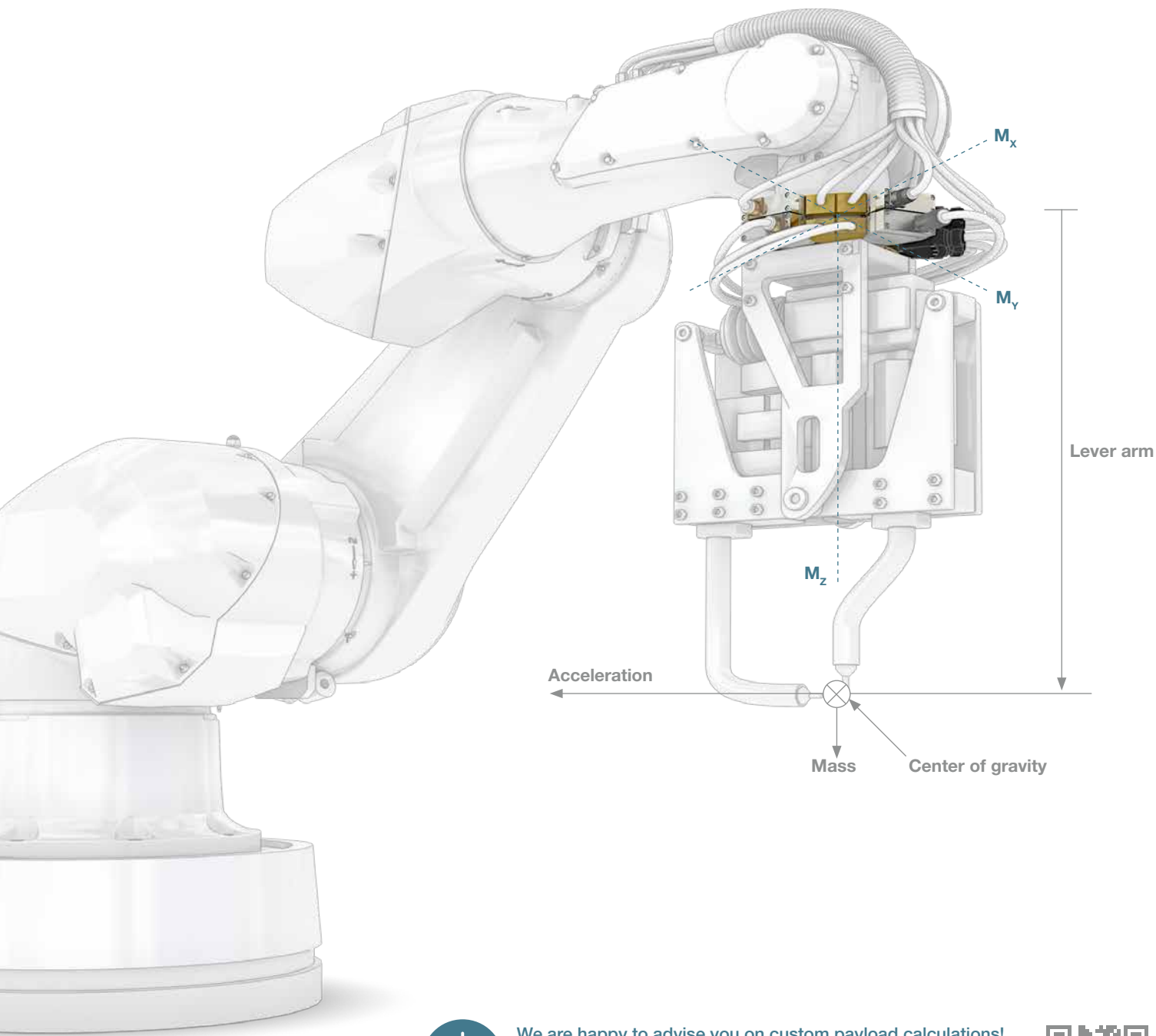


Grounding point robot side



Grounding point tool side

Tool changing systems for all robot manufacturers

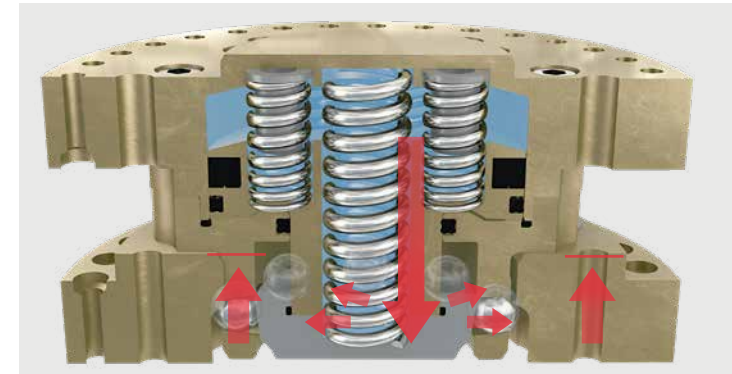


We are happy to advise you on custom payload calculations! Simply contact us and provide the following information: manufacturer, type and year of manufacture of your robot.

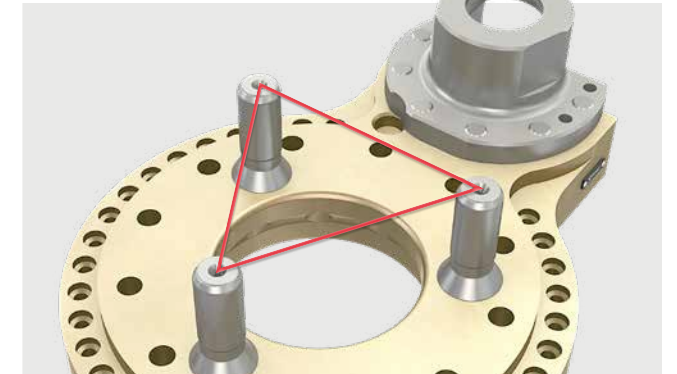
www.staubli.com



Quality and efficient locking technology



Powerful and precise interlocking for safe and error-free processes



The powerful base units of the Stäubli tool changing systems ensure a high-precision connection between the robot and the tool. The intelligent design ensures absolute precision and a long service life for the robotic tool changer.

Secure connection

The robot and tool sides are pre-centered and brought together by three guide columns. The tapered locking surfaces ensure accurate positioning between the two sides of the robotic tool changing system.

High-strength locking balls ensure a stable connection between the robot and the tool side. The locking mechanism is designed for a very high number of change cycles.

Highest precision

This results in precise repeatability of the tool changing system (± 0.01 mm in all axes). Even with a high number of change cycles, the tools achieve their 100% accurate insert position.

Absolutely reliable and efficient

This high repeatability ensures accurate positioning and consistent product quality, even for tools with asymmetric geometry and center of gravity.

Certified safety technology for personnel and installation



The safety of personnel and installation must be guaranteed in automated processes. Stäubli's robotic tool changing systems have a comprehensive safety concept for every application and achieve the high level of Performance Level d, Category 3.

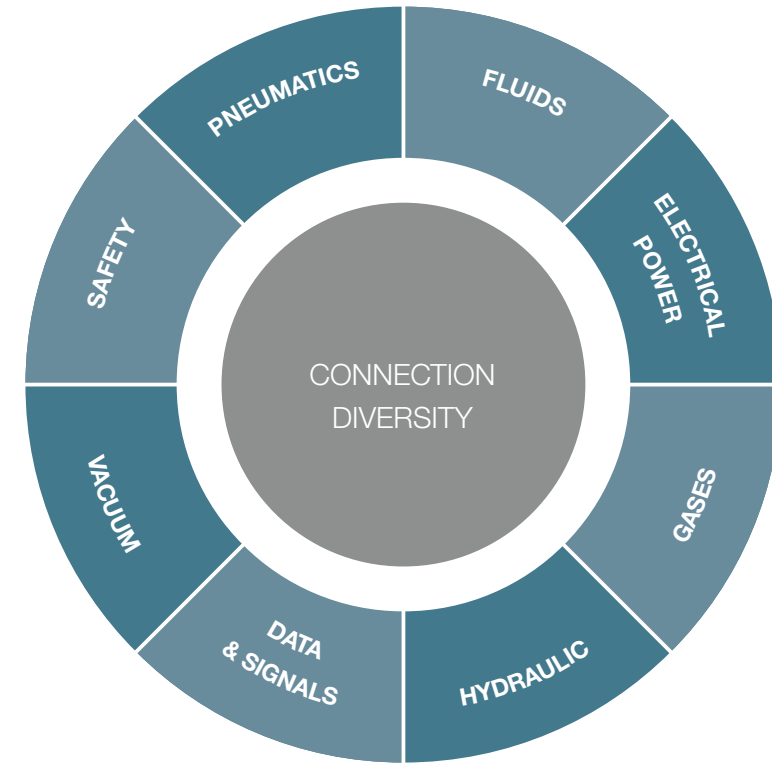
Our robotic tool changing systems ensure this high level of safety thanks to the Active Docking System developed by Stäubli.

Active Docking only provides the compressed air supply for the uncoupling process in the tool stand. There is a self-contained compressed air circuit for this purpose. The tool can, therefore, only be unlocked in the tool stand. Accidental unlocking is impossible once the robot has picked up the tool and is in use.

Special safety concepts can be developed with our team of experts on request.

SAFETY TECHNOLOGY PAGE 76

Multifunctionality - broad technology portfolio



The variety and flexibility of the available transfer technologies are critical to the high efficiency of the robotic tool changing system.

Stäubli tool changing systems offer the right high-quality transfer technology for every robot application worldwide. All technologies can be flexibly integrated. This versatility allows you to adapt your robotic tool change to future requirements at any time. Your investment is low-risk and profitable in the long term.

From simple handling applications to a wide range of welding, self-pierce riveting, screwing, gluing and material transfer: Stäubli's robotic tool changers ensure maximum technological diversity and guarantee maximum productivity.

The functionality of the robotic tool changing systems can be flexibly extended at any time with a wide range of modules for media, signals, data and power transfer.

With decades of experience, Stäubli is one of the pioneers in the development of quick-coupling technologies. In all industrial processes worldwide, Stäubli quick-coupling solutions are recognized as technology and quality leaders.

MODULE OVERVIEW ON PAGE 44

Easy configuration with a wide range of technologies



The right transfer technology in the right place: the easy configuration system for our robotic tool changing systems, offers you maximum flexibility and technological diversity.

Each base unit has a fixed number of numbered mounting holes (20 to 36 holes, depending on the series). The technology transfer modules are mounted on these holes. In principle, all transfer modules can be fitted to all mounting holes.

Our configuration system allows you to configure your own tool changing system. You can position the transfer modules exactly where you need the technology and where space allows.

At the same time, you will benefit from shorter delivery times for all configured tool changing systems.

Customized solutions

For applications where special base units or customized transfer modules, we are happy to design your specific tool changing system. Our technical advisors are available worldwide.

[MORE FROM PAGE 15](#)

[MPS 631/631S FROM PAGE 18](#)

[MPS 1531 FROM PAGE 32](#)

[MPS 2531 FROM PAGE 38](#)

The perfect solution for every need



ESSENTIAL D-SUB transfer module with spring-loaded contact technology

ADVANCED MultiDNet transfer module with MULTILAM® contact technology

MULTILAM® contact blade

Different applications place very specific demands on the performance of the transfer technologies and on the complexity of the tool stands. Stäubli offers cost-effective solutions for every requirement.

The most advanced product is not always the most economical solution. In many automated production lines, standard performance levels are fully sufficient, while other applications require higher capabilities. For this reason, Stäubli offers alternative modules with different performance specifications for several transfer technologies. Alternative versions are also available for the tool stands.

Wherever alternative solutions are offered, you will find a detailed comparison of the relevant specifications on the corresponding pages.

ESSENTIAL

The transfer modules and tool stand systems in the ESSENTIAL series offer reliable performance and high efficiency for standard applications at a cost-effective level. They are ideal for applications with a low number of tool changes per day, or for use in clean working environments.

ADVANCED

Our ADVANCED modules and tool stand systems stand out thanks to features such as a guaranteed high number of change cycles for frequent tool changes per hour, extended tool stand options, improved IP protection for harsh working environments, more robust MULTILAM® contact technology, higher compressive strength, and unlimited coding options.

[MODULE OVERVIEW ON PAGE 44](#)

[TOOL STANDS FROM PAGE 86](#)

Expert knowledge - at your location worldwide



Stäubli's broad international presence enables the efficient implementation of robotic tool changing systems in your production processes worldwide. Our training program ensures consistently high system productivity.

Stäubli has subsidiaries in all the world's industrial centers. Experienced teams of specialists have detailed, product-specific expertise and application knowledge. This guarantees the highest quality of advice and fast response times, even for transnational production concepts.

In addition, Stäubli offers worldwide training courses on all aspects of our robotic tool changing systems. Participants will learn important skills for commissioning, operating, maintaining and servicing the systems.

With this knowledge, production with robotic tool changing systems from Stäubli remains trouble-free and at a consistently high level. Trained personnel are the prerequisite for reliable and productive operation of your systems.

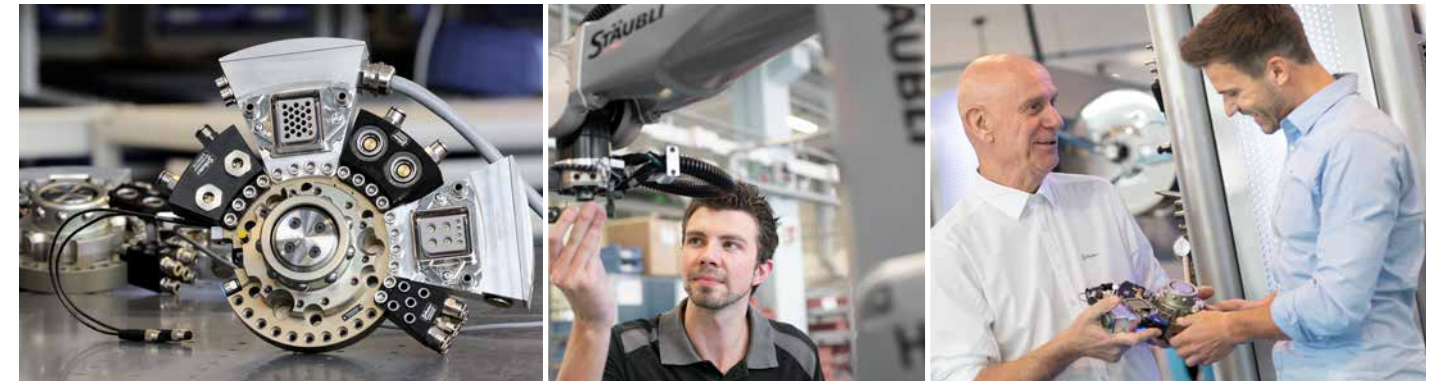


Contact Stäubli

Find your nearest Stäubli specialist. Contact us through our website. Our team will be happy to assist you.

www.staubli.com

Customized solutions for your individual needs



Our passion for innovation and extensive expertise is particularly evident in the customized solutions we develop for our customers worldwide. Precise, tailor-made systems are created in close partnership.

Talk to us about your specific challenges.

The open product concept of our robotic tool changers allows you to create customized systems. Whether basic units with special features, transfer modules redesigned for specific processes or special solutions for storage systems, Stäubli transforms your individual requirements into perfectly tailored, high-quality solutions for your robotic tool changer.

Customized transfer modules are available for almost all product parameters:

- Increased flow rate due to larger nominal diameter
- Customized additions to the product range for plug & play solutions
- Special media resistance and robustness through the use of use of highly resistant materials
- Specially designed electrical connectors
- Development of new transfer modules for specific production technologies

Overview



Base unit	MPS 631		MPS 631S	
	M_x / M_y	M_z	M_x / M_y	M_z
max. permissible moments				
max. static moment*	3200 Nm	3200 Nm	5000 Nm	5000 Nm
max. dynamic moment*	11200 Nm	11200 Nm	17500 Nm	17500 Nm
max. payload	630 kg			
max. repulsion force	36 kN			
max. connection force	72 kN			
max. lateral force	36 kN			
Pitch circle diameter (PCD) robot adapter flange		ISO 9409-1-160-11-M10 ISO 9409-1-160-11-M12 ISO 9409-1-200-11-M12	ISO 9409-1-200-12-M12 ISO 9409-1-200-11-M16 ISO 9409-1-200-12-M16	
Height (coupled)	100 mm			
Weight - robot side PCD Ø 160 mm	6.5 kg			
Weight - tool side PCD Ø 160 mm (included docking hook)	4.9 kg		5.4 kg	
Weight - robot side PCD Ø 160 mm + 200 mm	8.4 kg			
Weight - tool side PCD Ø 160 mm + 200 mm (included docking hook)	6.3 kg		6.9 kg	
Compressed air connection	2 x Push-lock hose-Ø 8 mm			
Operating pressure	0.45 - 1.2 MPa 2.3 NI/ cycle at 0.6 MPa			
Operating temperature	0 °C ...+50 °C			
Repeatability	+/- 0.01 mm			
Query	locked/ unlocked/ coupled			
Emergency release	yes			
Safety in case of drive medium failure	yes, by compression spring			
Integrated grounding connection	yes		yes	
Number of module positions	5 to 14			

CONFIGURATION PAGE 18



We are happy to provide you with 3D data of our robotic tool changers.
Contact us via our website:

www.staubli.com

* Due to their potentially high acceleration, robots can generate dynamic moments that are several times higher than static moments. The dynamic moments can occur in an emergency stop situation of the robot. Since they occur only very rarely during the robot's lifetime a static proof of strength is usually sufficient for this purpose.

Base unit	MPS 1531		MPS 2531	
	M_x / M_y	M_z	M_x / M_y	M_z
max. permissible moments				
max. static moment*	15000 Nm	12500 Nm	44000 Nm	33000 Nm
max. dynamic moment*	37500 Nm	30000 Nm	110000 Nm	66000 Nm
max. payload	1530 kg		2500 kg	
max. repulsion force	100 kN		160 kN	
max. connection force	200 kN		320 kN	
max. lateral force	100 kN		160 kN	
Pitch circle diameter (PCD) robot adapter flange	ISO9409-1-200-12-M12 ISO9409-1-200-12-M16		ISO 9409-1-315-16-M16	
Height (coupled)	100 mm		110 mm	
Weight - robot side	13.5 kg		30.1 kg	
Weight - tool side (included docking hook)	11.0 kg		20.5 kg	
Compressed air connection	2 x Push-lock hose-Ø 8 mm		2 x Push-lock hose-Ø 8 mm	
Operating pressure	0.45 - 1.2 MPa 5 NI/ cycles at 0.6 MPa		0.45 - 0.8 MPa 11 NI/ cycles at 0.6 MPa	
Operating temperature	0 °C ...+50 °C		0 °C ...+50 °C	
Repeatability	+/- 0.01 mm		+/- 0.01 mm	
Query	locked/ unlocked/ coupled		locked/ unlocked/ coupled	
Emergency release	yes		yes	
Safety in case of drive medium failure	yes, by compression spring		yes, by compression spring	
Integrated grounding connection	yes		yes	
Number of module positions	7 to 14		10	

CONFIGURATION PAGE 32

CONFIGURATION PAGE 38

Select base unit:

According to robot load data:

The maximum permissible torques of the tool changing system exceed the torques of the robot.

= mass x lever arm x acceleration. The maximum permissible torques* of the tool changing system must not be exceeded. If the permissible torques of the tool changing system are exceeded, the mass, lever arm and/or acceleration parameters must be adjusted.

According to pitch circle diameter and/or load capacity:

The application must be calculated using the formula torque

The configuration of MPS 631/631S

Take advantage of the maximum flexibility of Stäubli's modular product concept. Configure your perfect tool changing system in just a few steps.



This module allocation applies only to base units with a PCD of 160 mm.

Base units with a PCD of 160 + 200 mm have a different allocation. Please contact us for more information.



R

1 Choose your **base unit** and note the module order code.

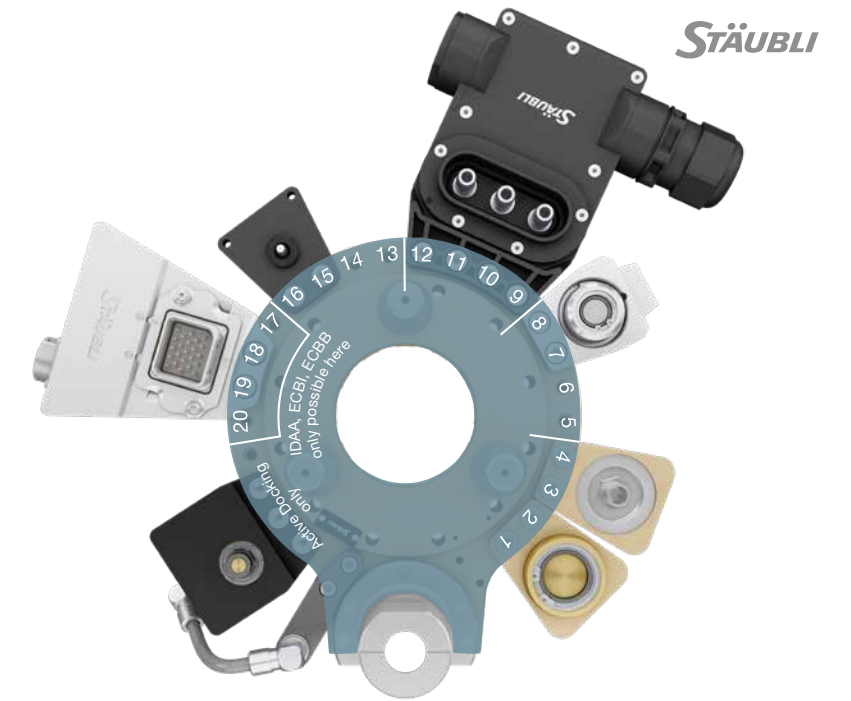
ON PAGE 20

2 Place the required **transfer modules** in mounting holes 1 to 20 by entering the module code. Only IDAA, ECBI and ECBB are possible in holes 17 to 20.

MODULE OVERVIEW ON PAGE 44

M P S 6 3 1 R D - W T W M - 0 0 W W - W P B A - 0 0 M R - E C B B

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



T

3 Select the appropriate **base unit** for your tool side. Transfer the module order codes of the **transfer modules** corresponding to the robot side.

ON PAGE 22

M P S 6 3 1 T C - W T W M - 0 0 W W - W P B A - 0 0 M R - E C B B

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

T

4 **Reduce your investment** by varying your tool sides: Remove the transfer modules that are not required on the respective tool side (replace module code with 00 or 0000).

M P S 6 3 1 T C - 0 0 W M - 0 0 W W - 0 0 0 0 - 0 0 M R - E C B B

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

MPS 631/631S base unit robot side

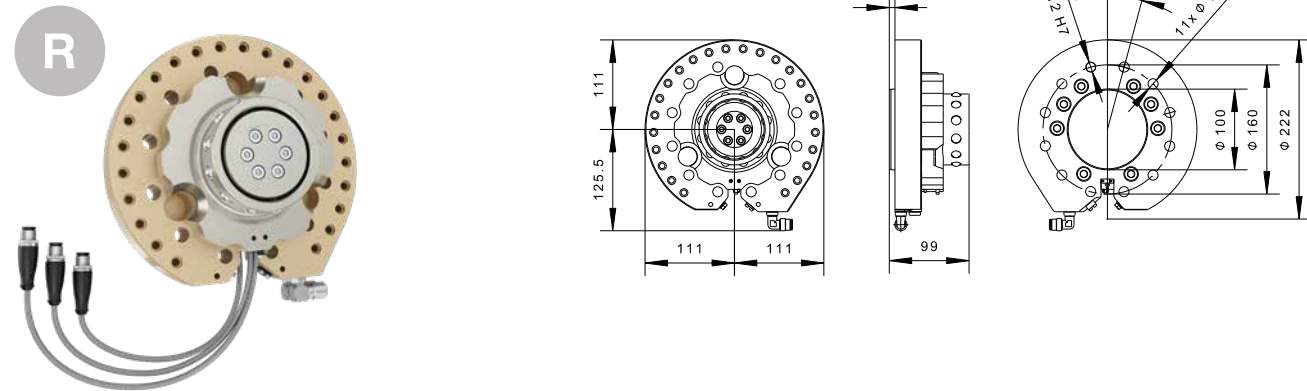


PCD Ø 160 mm

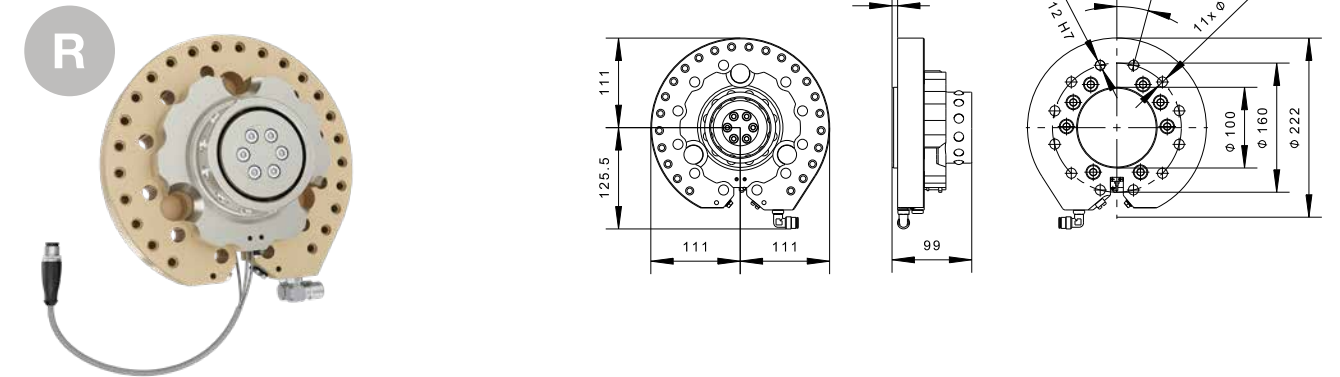


The base unit on the robot side is identical for the MPS 631 and MPS 631S. On the tool side, select the MPS 631 or MPS 631S version that is right for you.

MPS 631RA/RE

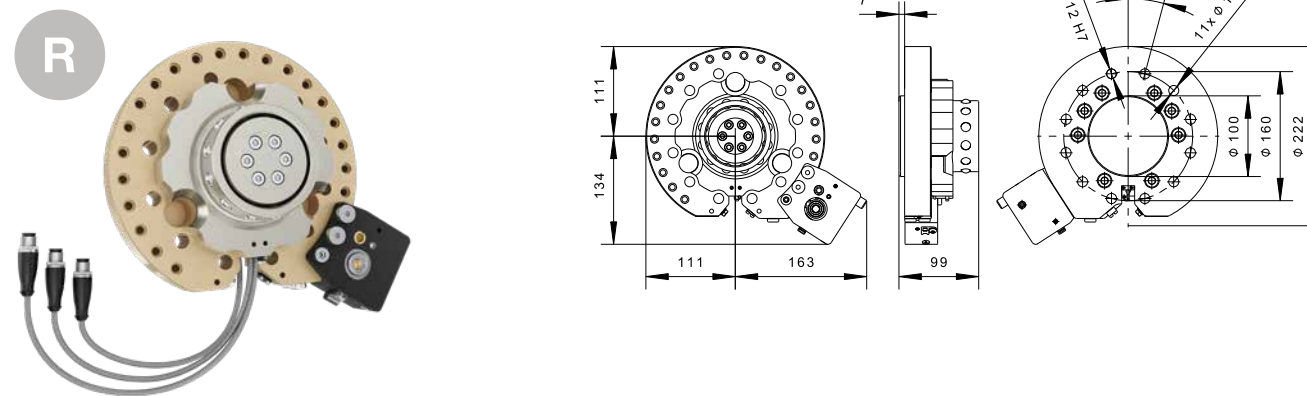


MPS 631RC/RG

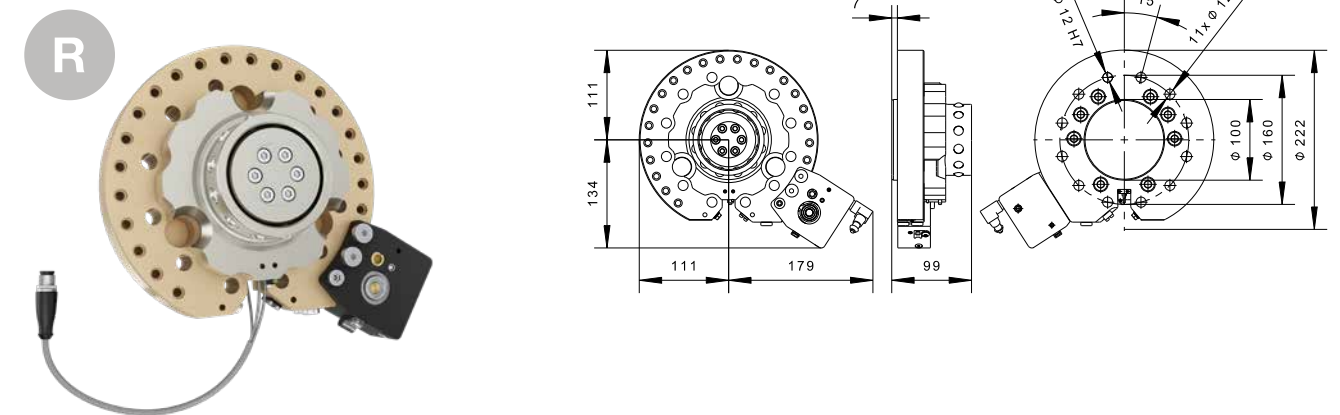


The cable for the Active Docking safety module is included.

MPS 631RB/RF



MPS 631RD/RH



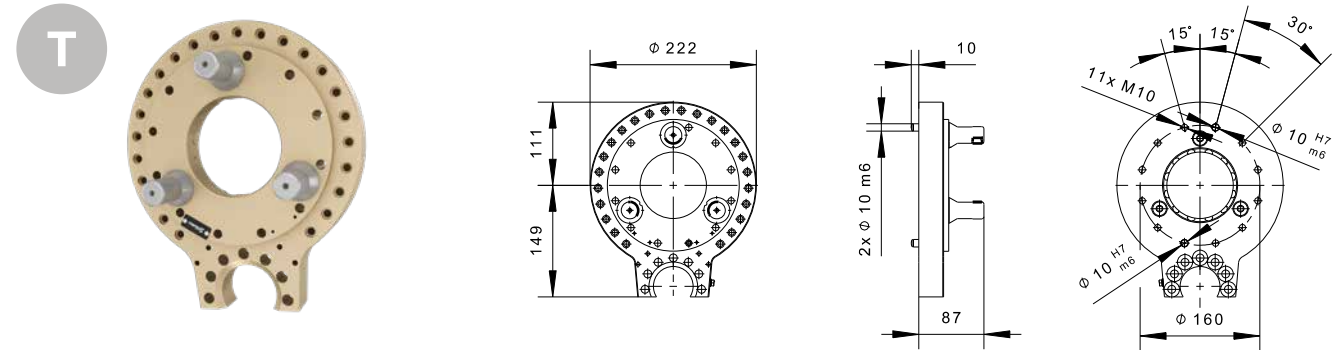
	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81558375	Ø 160 mm	3200 / 5000 Nm	3200 / 5000 Nm	630 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 3x M12	MPS631RA
	3x NPN/ 3x M12							MPS631RE	
R	K81558376	Ø 160 mm	3200 / 5000 Nm	3200 / 5000 Nm	630 kg	1x G3/8 Inner thread	Pressure switch PNP/ NPN 1x M12	3x PNP/ 3x M12	MPS631RB
	3x NPN/ 3x M12							MPS631RF	

	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81558377	Ø 160 mm	3200 / 5000 Nm	3200 / 5000 Nm	630 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 1x M12 8-pol.	MPS631RC
	3x NPN/ 1x M12 8-pol.							MPS631RG	
R	K81558378	Ø 160 mm	3200 / 5000 Nm	3200 / 5000 Nm	630 kg	1x G3/8 Inner thread	Pressure switch PNP/ NPN 1x M12	3x PNP/ 1x M12 8-pol.	MPS631RD
	3x NPN/ 1x M12 8-pol.							MPS631RH	

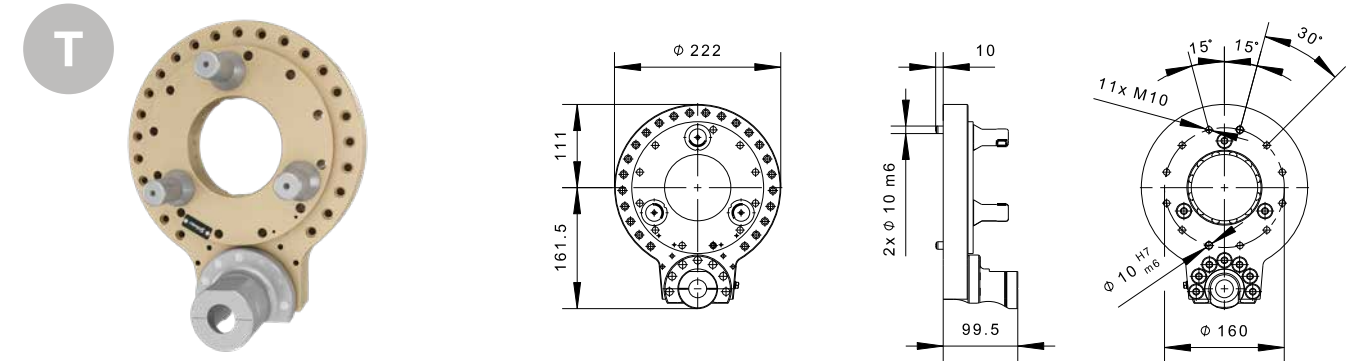
MPS 631 base unit tool side - 3200 Nm



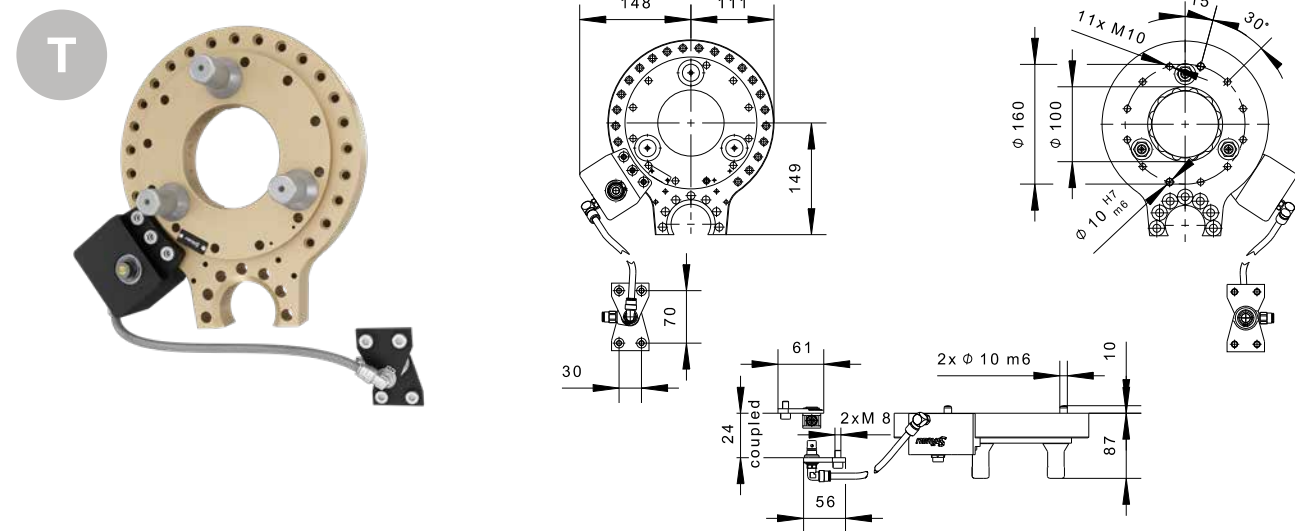
MPS 631TO



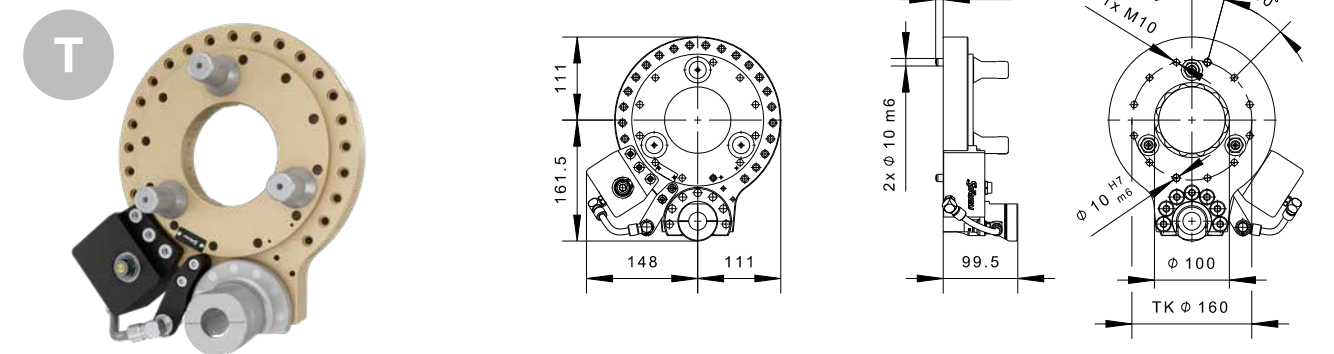
MPS 631TA



MPS 631TB



MPS 631TC

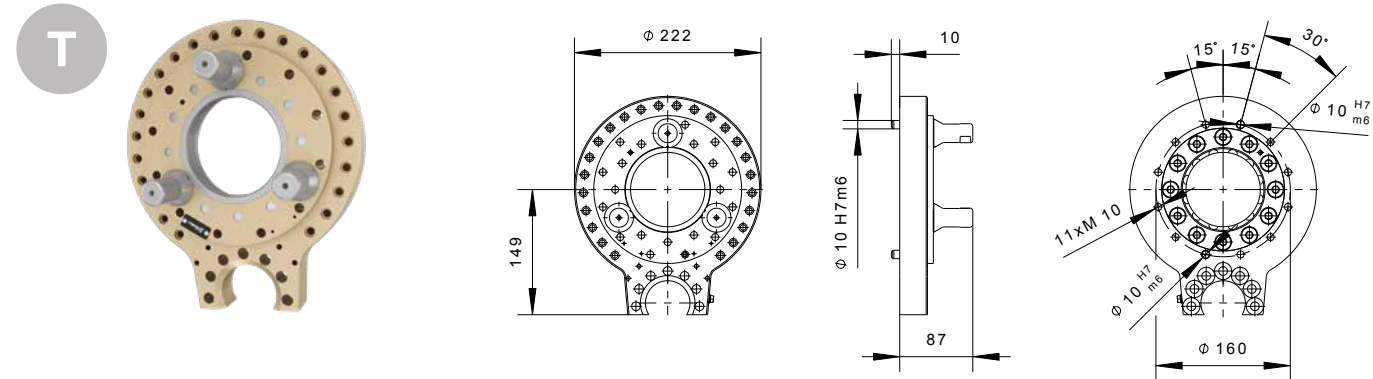


	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Docking hook	Safety module	Module order code
T	K81557705	Ø 160 mm	3200 Nm	3200 Nm	no	no	MPS631TO
T	K81557925	Ø 160 mm	3200 Nm	3200 Nm	no	yes	MPS631TB
T	K81557920	Ø 160 mm	3200 Nm	3200 Nm	yes	no	MPS631TA
T	K81557927	Ø 160 mm	3200 Nm	3200 Nm	yes	yes	MPS631TC

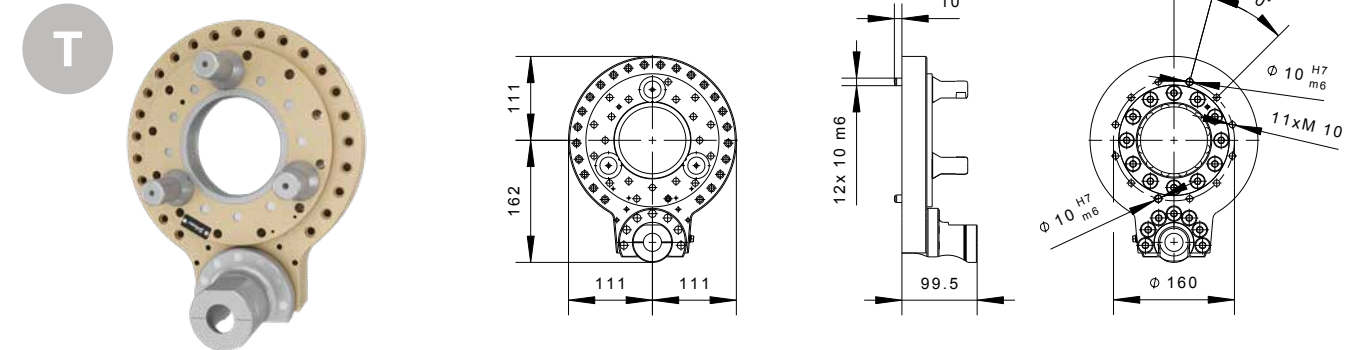
MPS 631S base unit tool side - 5000 Nm



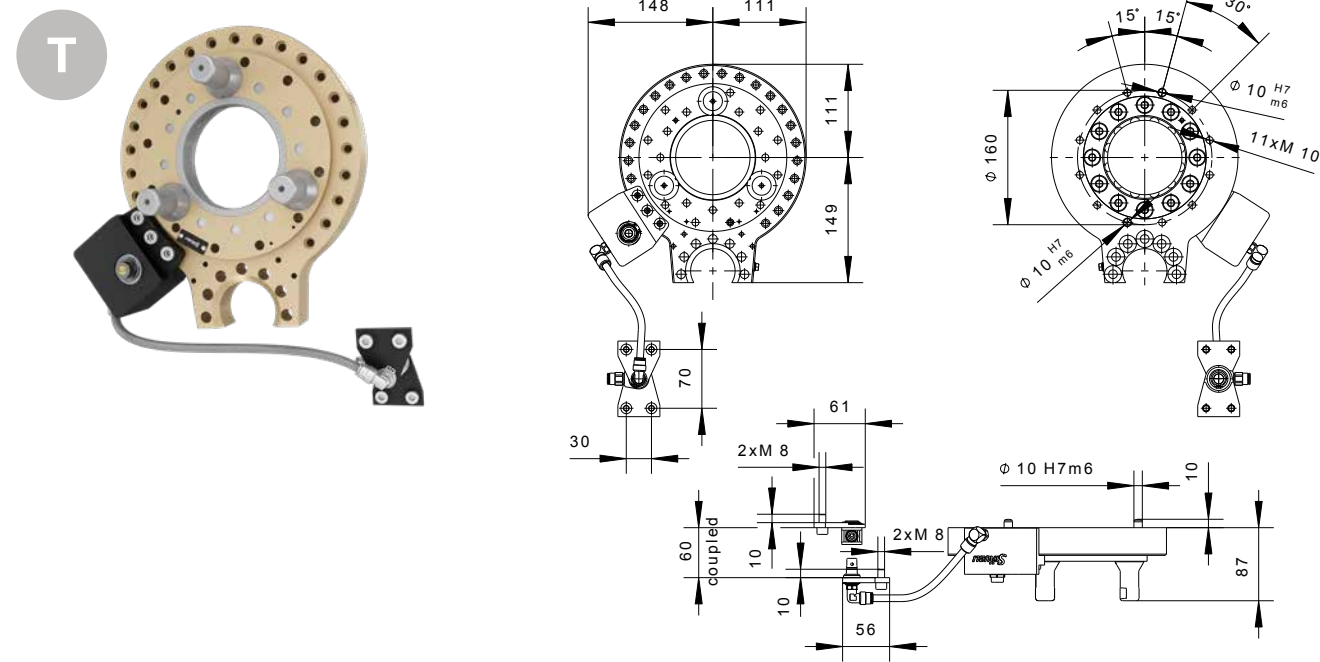
MPS 631TD



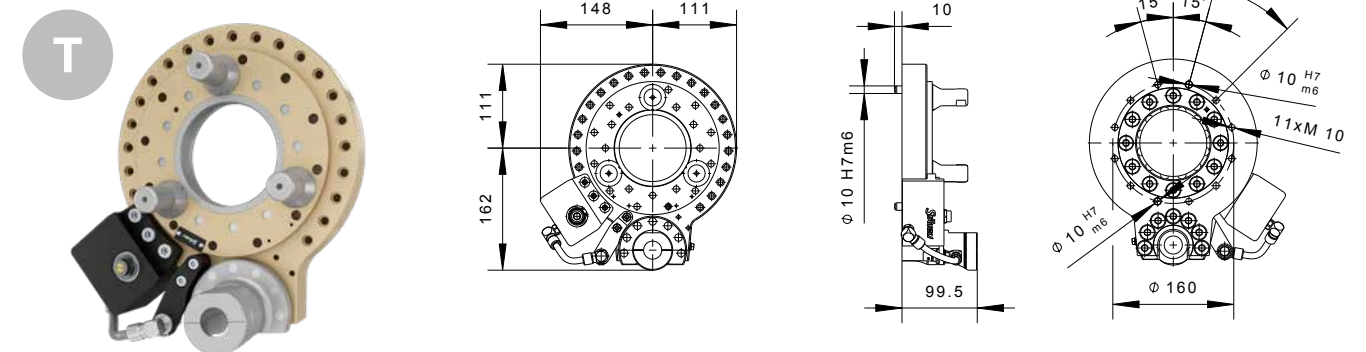
MPS 631TF



MPS 631TE



MPS 631TG



	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Docking hook	Safety module	Module order code
T	K81557921	Ø 160 mm	5000 Nm	5000 Nm	no	no	MPS631TD
T	K81557926	Ø 160 mm	5000 Nm	5000 Nm	no	yes	MPS631TE
T	K81557922	Ø 160 mm	5000 Nm	5000 Nm	yes	no	MPS631TF
T	K81557928	Ø 160 mm	5000 Nm	5000 Nm	yes	yes	MPS631TG

MPS 631/631S base unit robot side

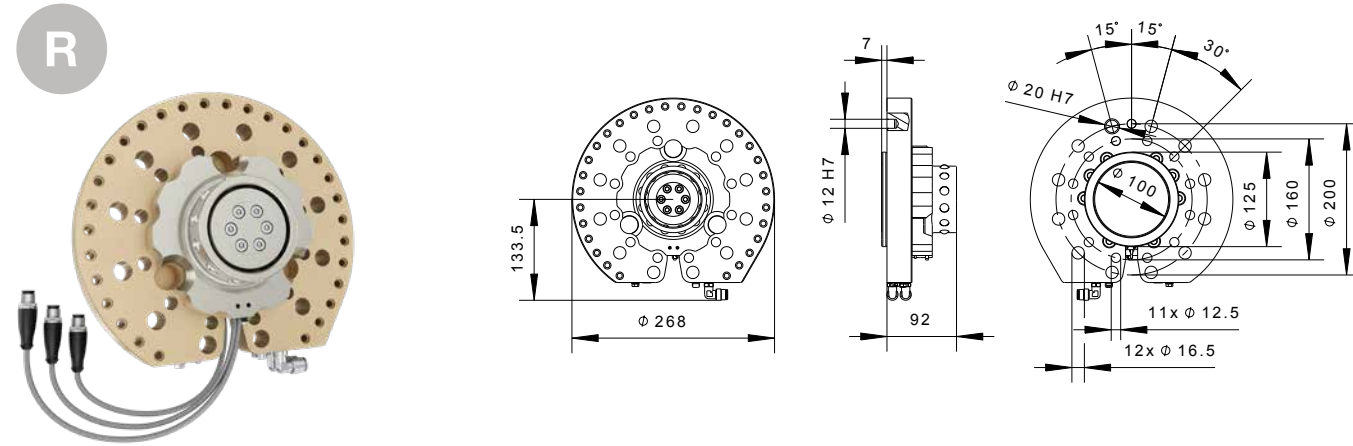


PCD Ø 160 + 200 mm

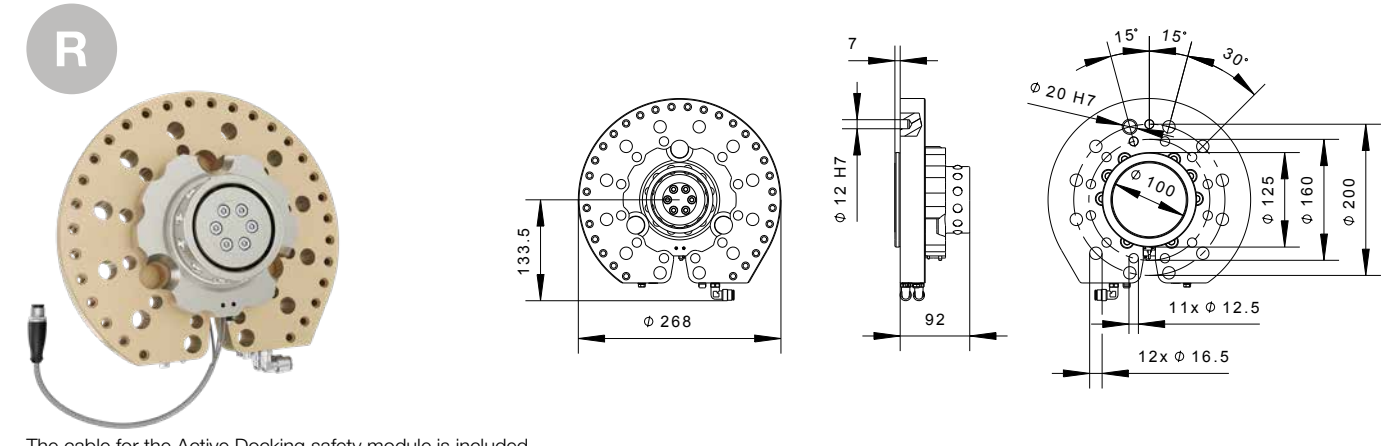


The base unit on the robot side is identical for the MPS 631 and MPS 631S. On the tool side, select the MPS 631 or MPS 631S version that is right for you.

MPS 631RI/RM

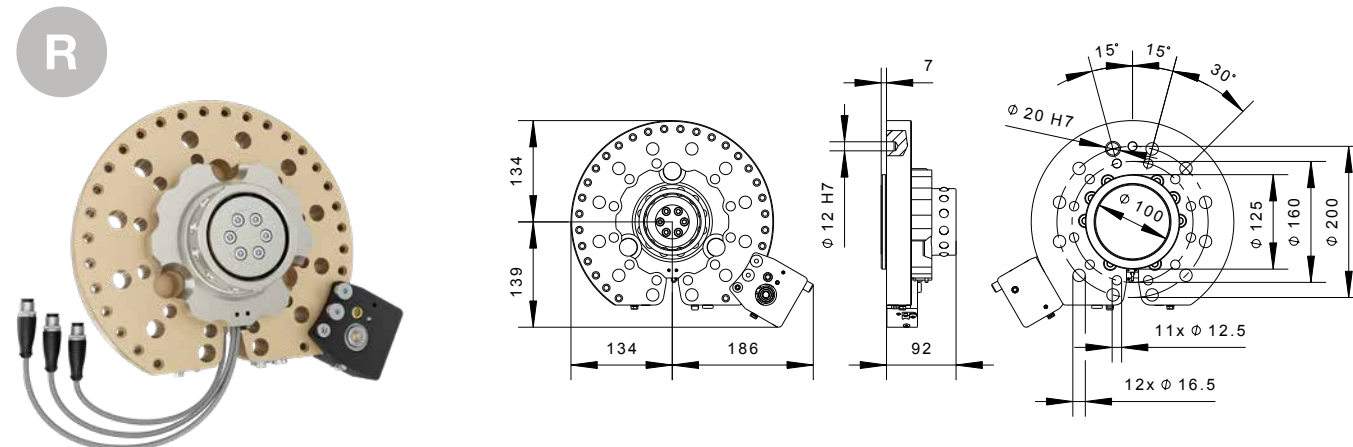


MPS 631RK/RO

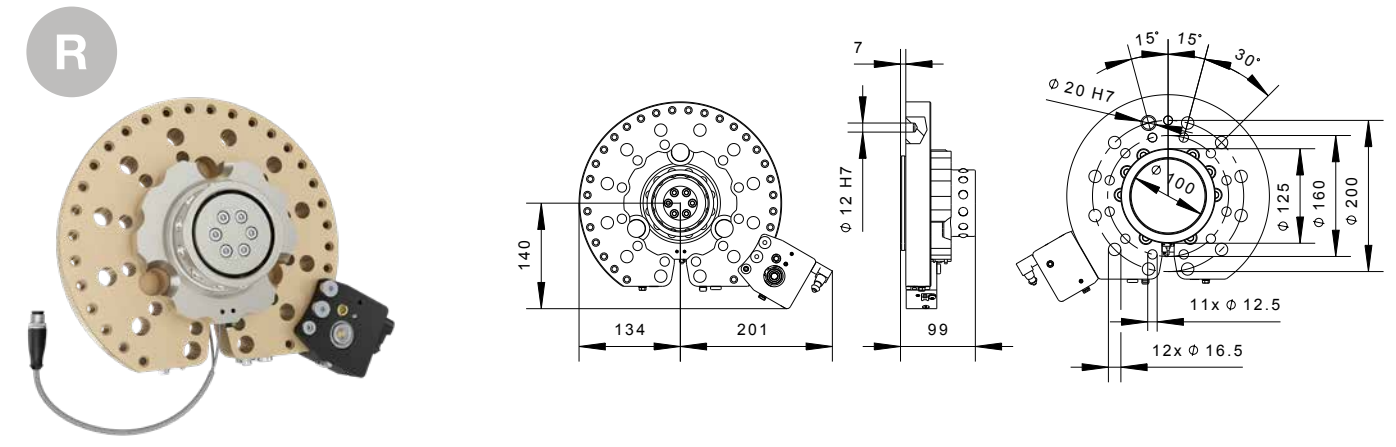


The cable for the Active Docking safety module is included.

MPS 631RJ/RN



MPS 631RL/RP



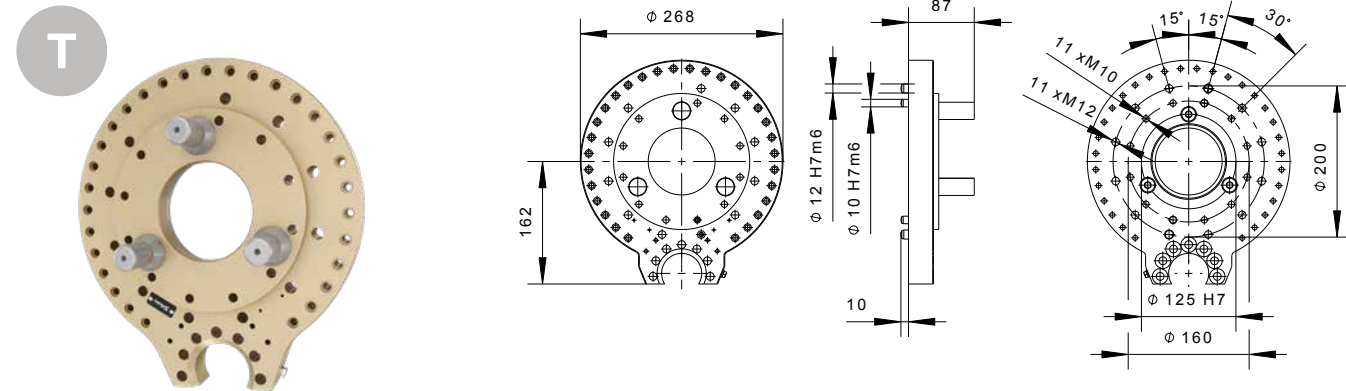
	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81558537	Ø 160 mm + 200 mm	3500/5000 Nm	3500/5000 Nm	630 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/3x M12	MPS631RI
	3x NPN/3x M12							MPS631RM	
R	K81558539	Ø 160 mm + 200 mm	3500/5000 Nm	3500/5000 Nm	630 kg	1x G3/8 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/3x M12	MPS631RJ
	3x NPN/3x M12							MPS631RN	

	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81558541	Ø 160 mm + 200 mm	3500/5000 Nm	3500/5000 Nm	630 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/1x M12 8-pol.	MPS631RK
	3x NPN/1x M12 8-pol.							MPS631RO	
R	K81558543	Ø 160 mm + 200 mm	3500/5000 Nm	3500/5000 Nm	630 kg	1x G3/8 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/1x M12 8-pol.	MPS631RL
	3x NPN/1x M12 8-pol.							MPS631RP	

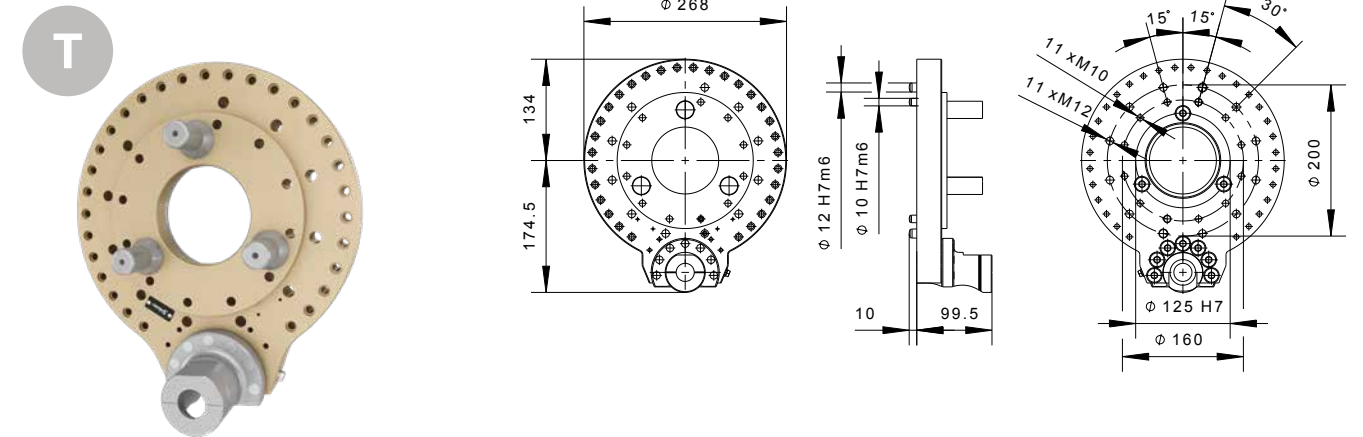
MPS 631 base unit tool side - 3200 Nm

 PCD Ø 160 + 200 mm

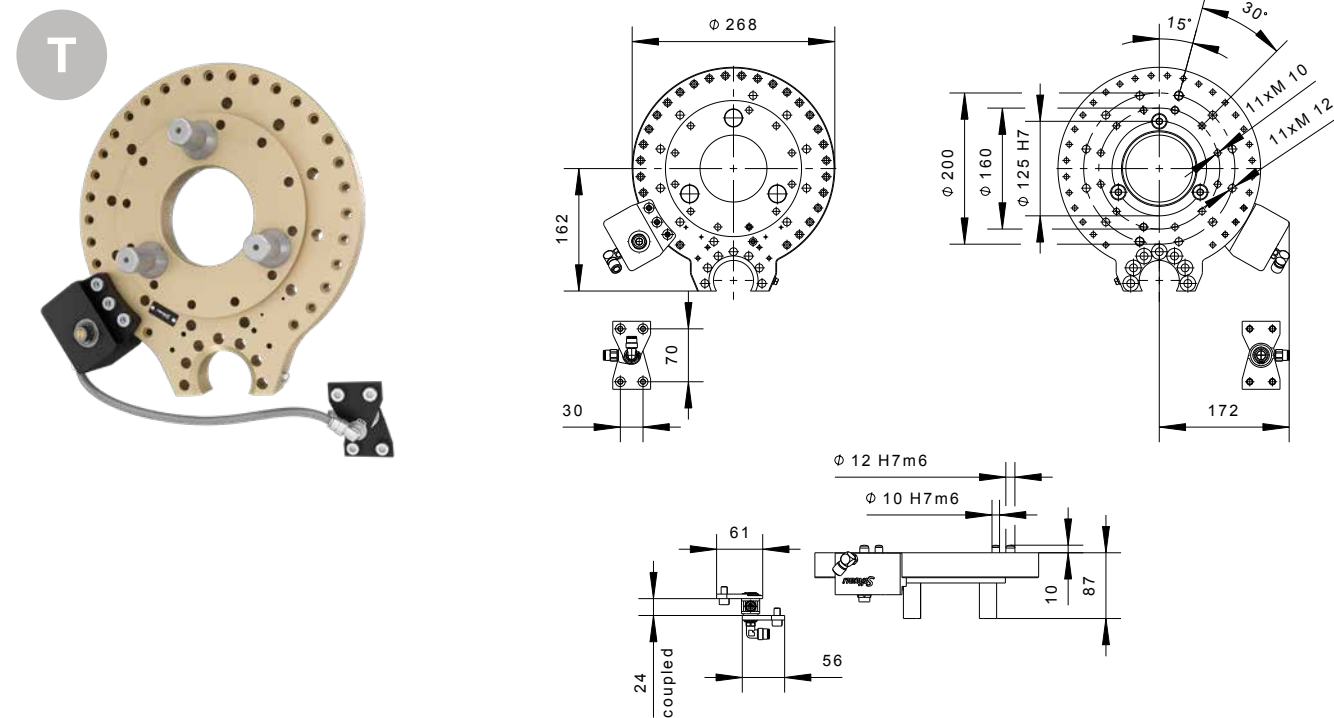
MPS 631TH



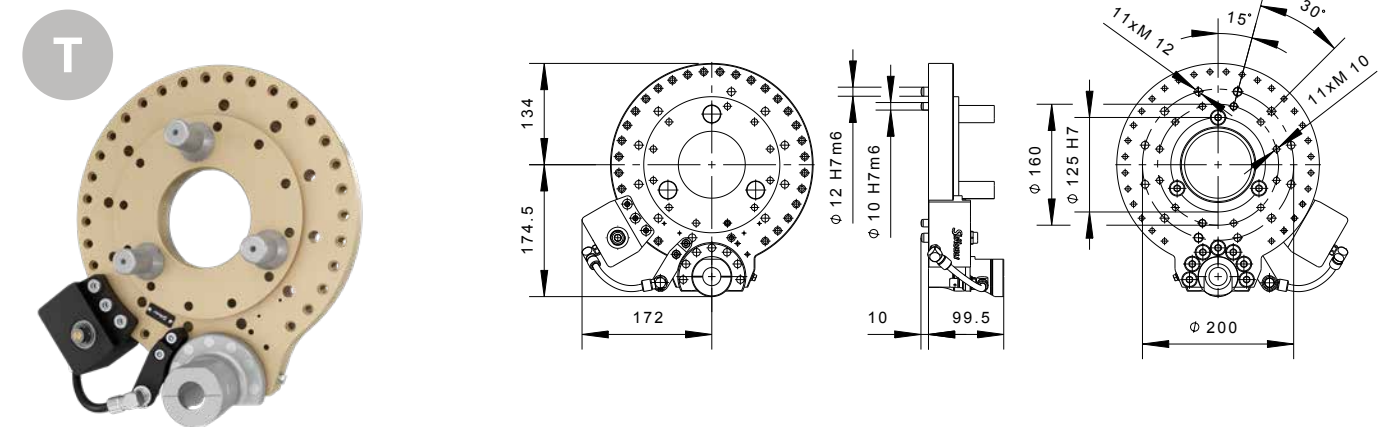
MPS 631TJ



MPS 631TI



MPS 631TK



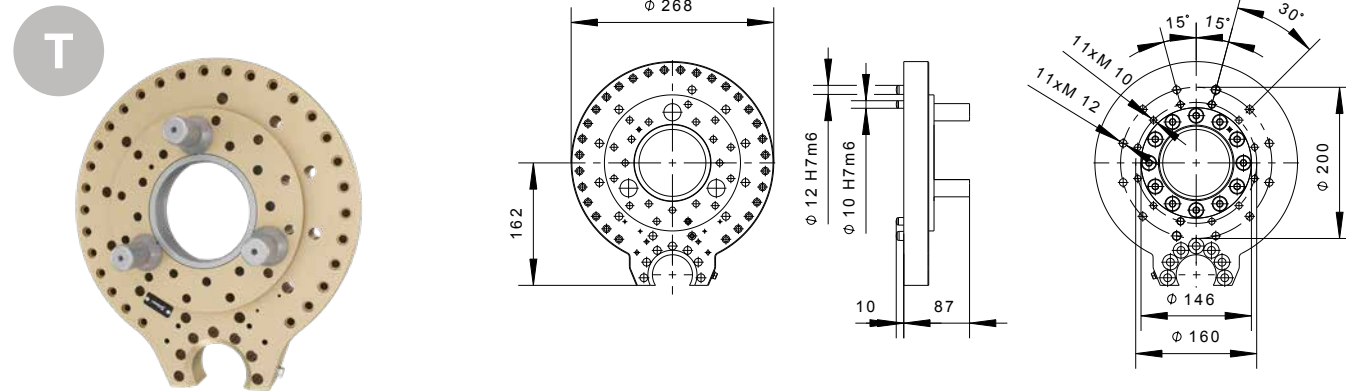
	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Docking hook	Safety module	Module order code
T	K81557917	Ø 160 mm + 200 mm	3200 Nm	3200 Nm	no	no	MPS631TH
T	K81557929	Ø 160 mm + 200 mm	3200 Nm	3200 Nm	no	yes	MPS631TI
T	K81557913	Ø 160 mm + 200 mm	3200 Nm	3200 Nm	yes	no	MPS631TJ
T	K81557931	Ø 160 mm + 200 mm	3200 Nm	3200 Nm	yes	yes	MPS631TK

MPS 631S base unit tool side - 5000 Nm

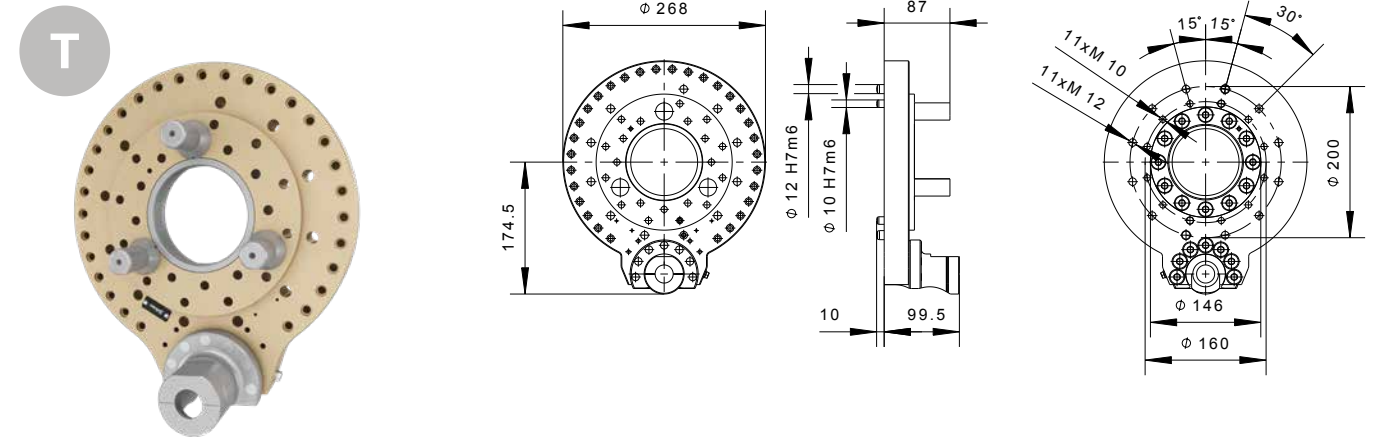


PCD Ø 160 + 200 mm

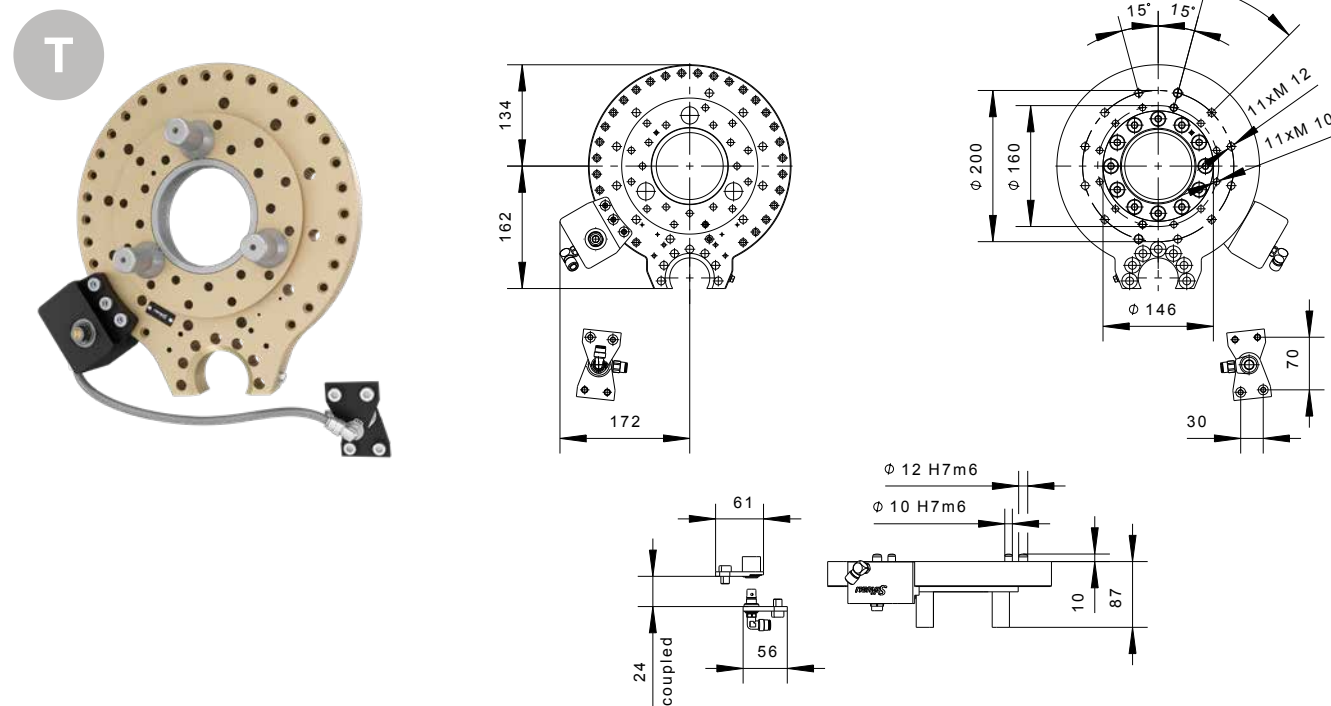
MPS 631TL



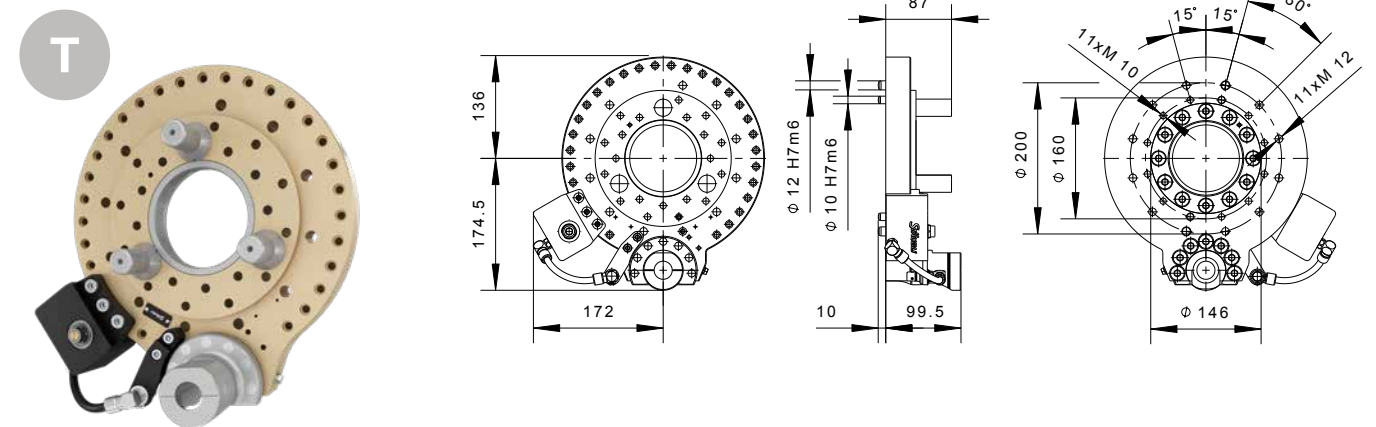
MPS 631TN



MPS 631TM



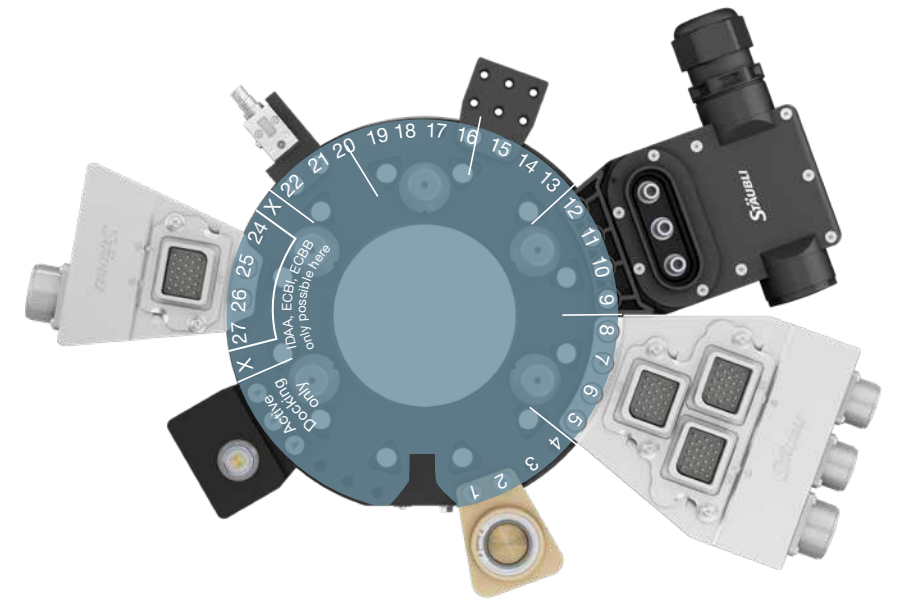
MPS 631TP



	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Docking hook	Safety module	Module order code
T	K81557918	Ø 160 mm + 200 mm	5000 Nm	5000 Nm	no	no	MPS631TL
T	K81557930	Ø 160 mm + 200 mm	5000 Nm	5000 Nm	no	yes	MPS631TM
T	K81557912	Ø 160 mm + 200 mm	5000 Nm	5000 Nm	yes	no	MPS631TN
T	K81557932	Ø 160 mm + 200 mm	5000 Nm	5000 Nm	yes	yes	MPS631TP

The configuration of MPS 1531

Take advantage of the maximum flexibility of Stäubli's modular product concept. Configure your perfect tool changing system in just a few steps.



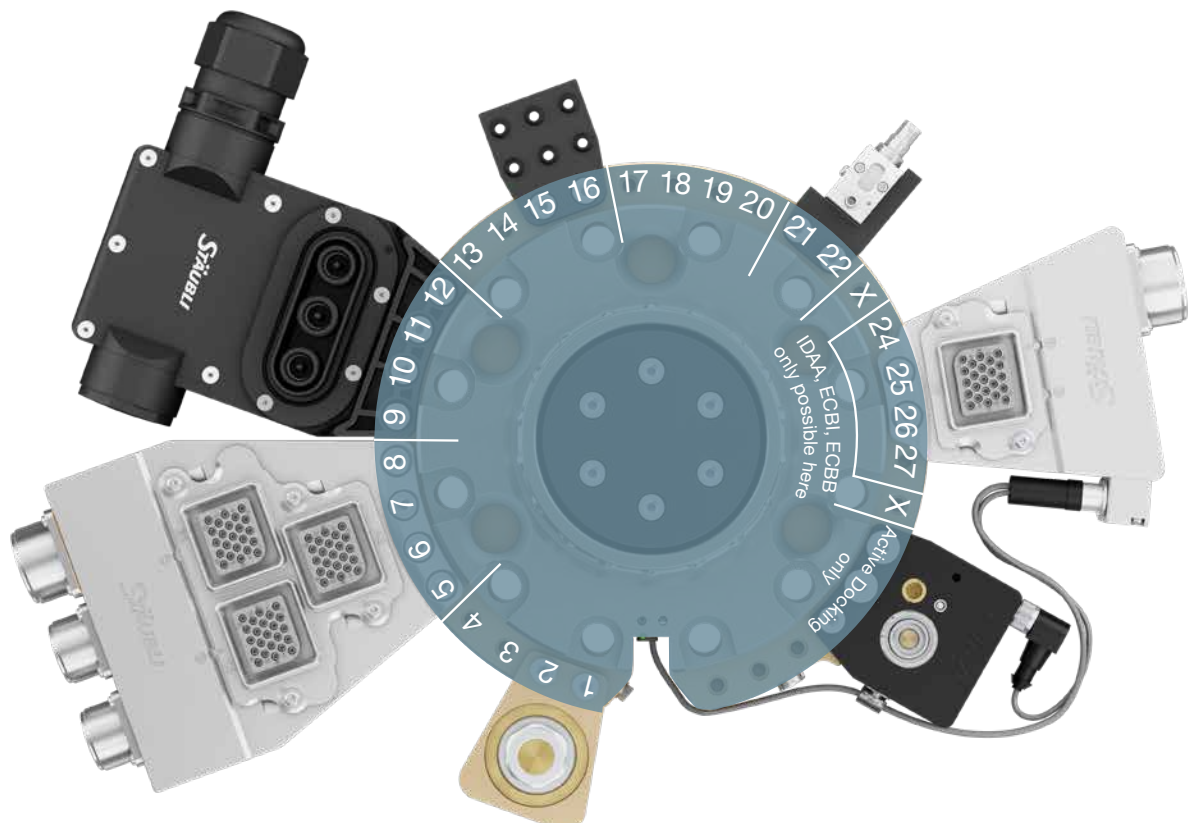
T

3 Select the appropriate **base unit** for your tool side.
Transfer the module order codes of the **transfer modules** corresponding to the robot side.

ON PAGE 36

MPS1531RD - WT00 - ECBQ - WPBA - 00P6 - 0000 - H1 ECBI

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 X 24 25 26 27



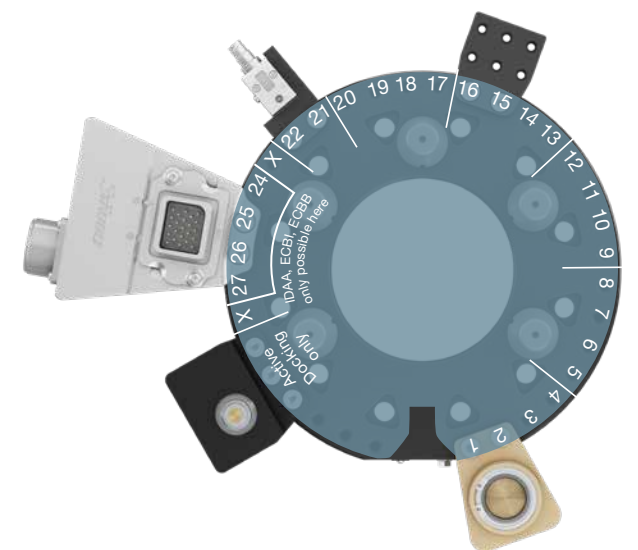
R

1 Choose your **base unit** and note the module order code. **ON PAGE 34**

2 Place the required **transfer modules** in mounting holes 1 to 27 by entering the module code. Only IDAA, ECBI and ECBB are possible in holes 24 to 27. **MODULE OVERVIEW ON PAGE 44**

MPS1531RD - WT00 - ECBQ - WPBA - 00P6 - 0000 - H1 - ECBI

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 X 24 25 26 27



T

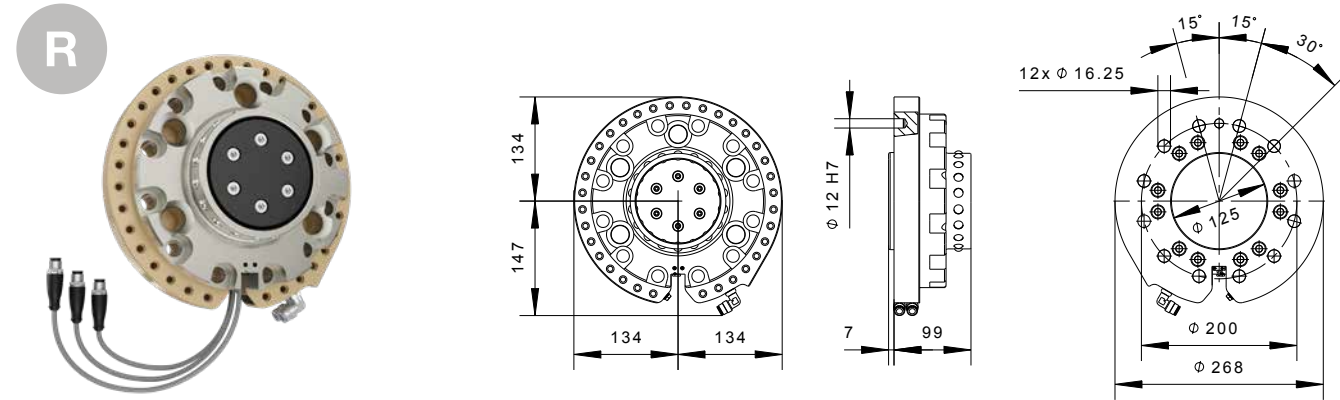
4 Reduce your investment by varying your tool sides: Remove the transfer modules that are not required on the respective tool side (replace module code with 00 or 0000).

MPS1531RD - WT00 - 0000 - 0000 - 00P6 - 0000 - H1 ECBI

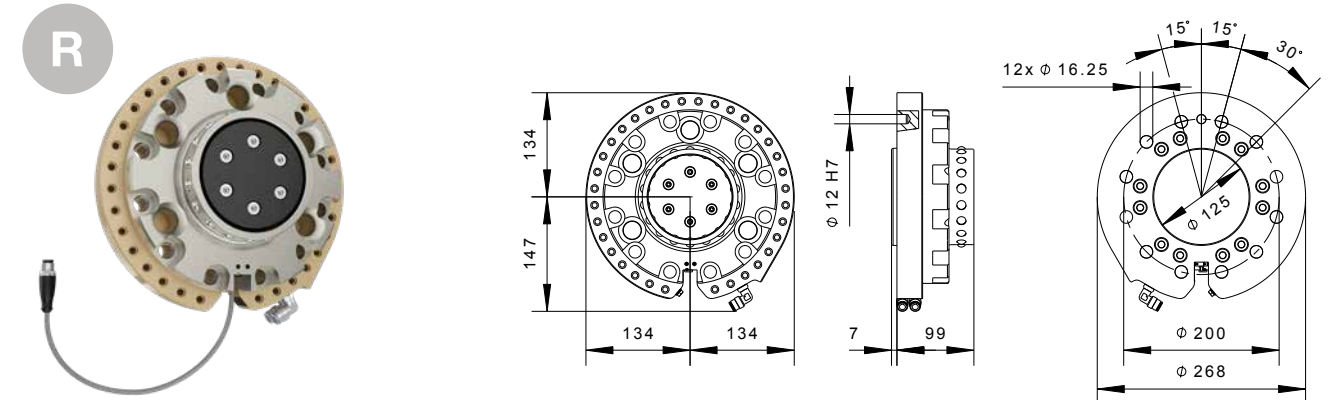
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 X 24 25 26 27

MPS 1531 base unit robot side

MPS 1531RA/RE

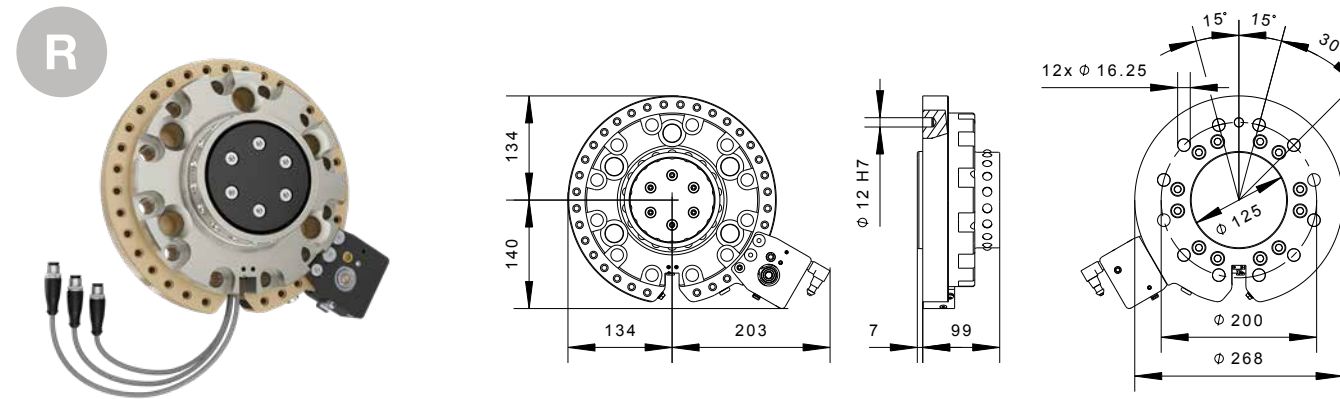


MPS 1531RC/RG

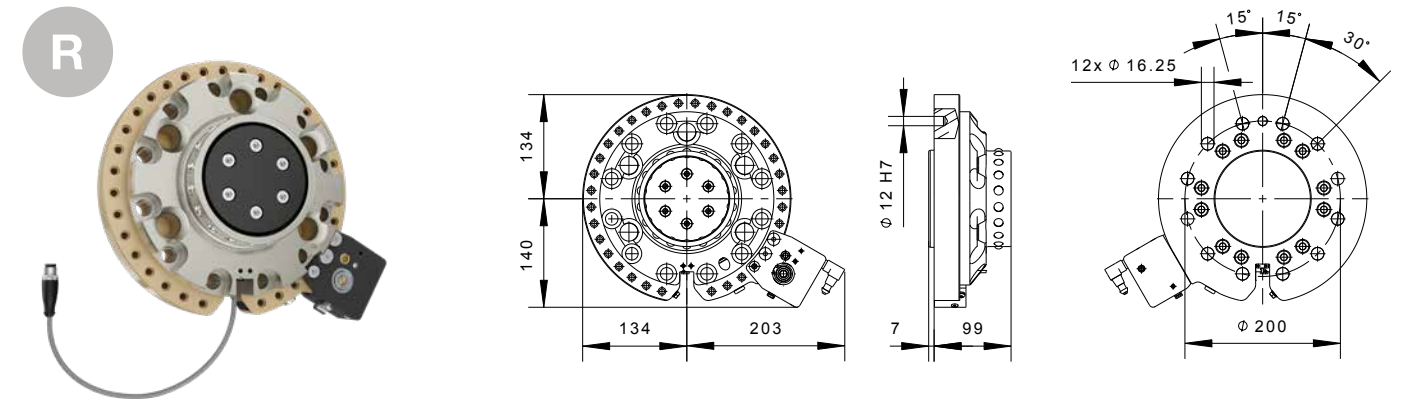


The cable for the Active Docking safety module is included.

MPS 1531RB/RF



MPS 1531RD/RH



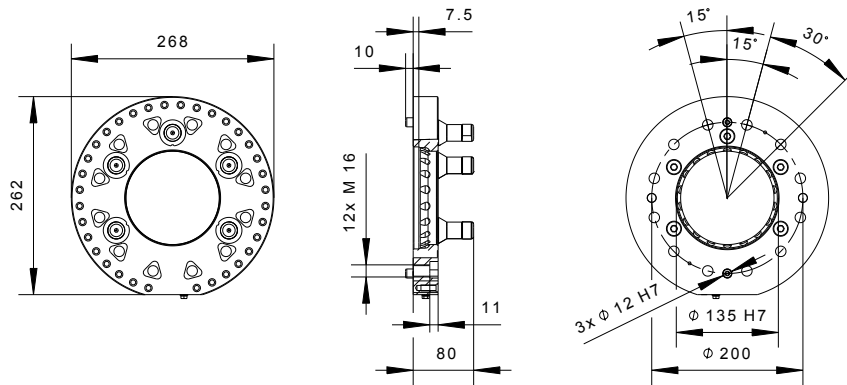
	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81557811	Ø 200 mm	15000 Nm	12500 Nm	1530 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 3x M12	MPS1531RA
	3x NPN/ 3x M12							MPS1531RE	
R	K81557813	Ø 200 mm	15000 Nm	12500 Nm	1530 kg	1x G3/8 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/ 3x M12	MPS1531RB
	3x NPN/ 3x M12							MPS1531RF	

	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81557815	Ø 200 mm	15000 Nm	12500 Nm	1530 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 3x M12	MPS1531RC
	3x NPN/ 3x M12							MPS1531RG	
R	K81557817	Ø 200 mm	15000 Nm	12500 Nm	1530 kg	1x G3/8 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/ 3x M12	MPS1531RD
	3x NPN/ 3x M12							MPS1531RH	

MPS 1531 base unit tool side

MPS 1531TO

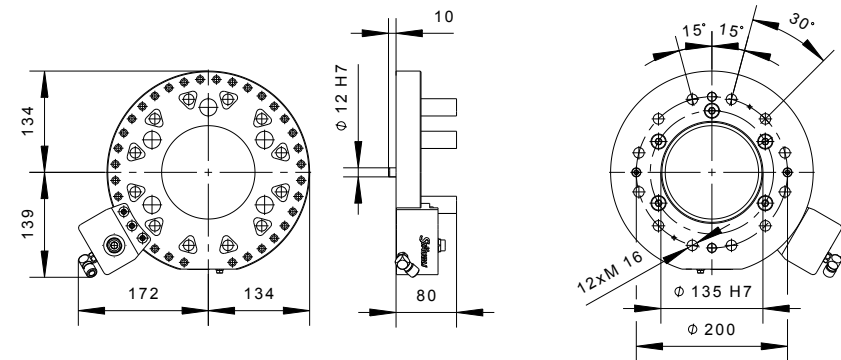
T



	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Safety module	Module order code
T	K81557819	Ø 200 mm	15000 Nm	12500 Nm	no	MPS1531TO
T	K81557820	Ø 200 mm	15000 Nm	12500 Nm	yes	MPS1531TB

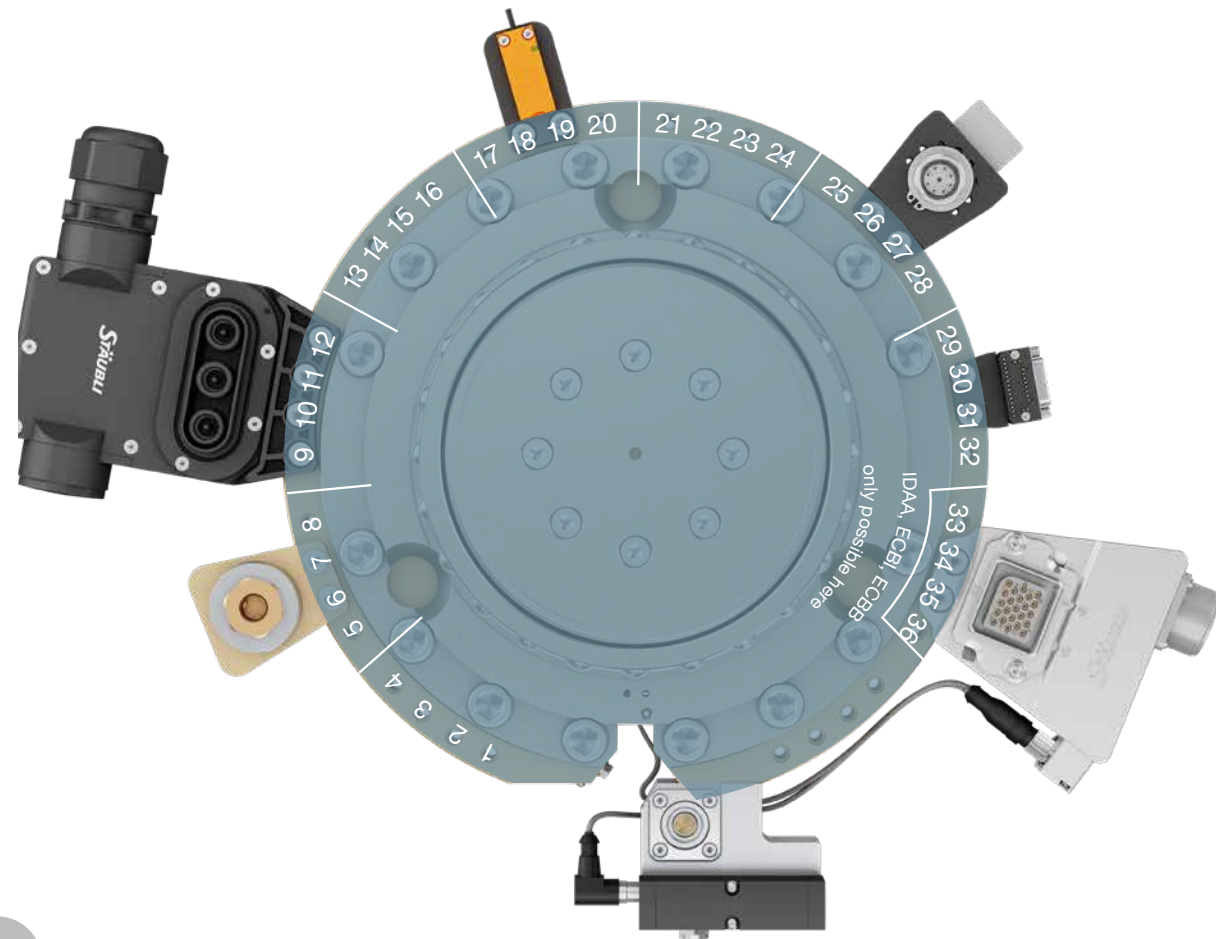
MPS 1531TB

T



The configuration of MPS 2531

Take advantage of the maximum flexibility of Stäubli's modular product concept. Configure your perfect tool changing system in just a few steps.



R

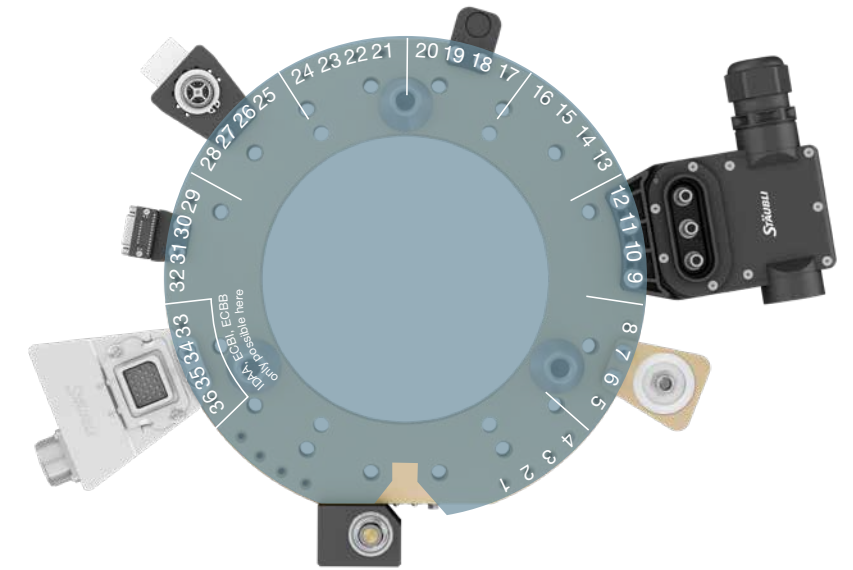
1 Choose your **base unit** and note the module order code.

ON PAGE 40

2 Place the required **transfer modules** in mounting holes 1 to 36 by entering the module code. Only IDAA, ECBI and ECBB are possible in holes 33 to 36.

MODULE OVERVIEW ON PAGE 44

MPS1531RD - 0000 - 0WMO - WPBA - 0000 - IP67 - 0000 - OEGO - IP30 - ECBI
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36



T

3 Select the appropriate **base unit** for your tool side.
 Transfer the module order codes of the **transfer modules** corresponding to the robot side.

ON PAGE 42

MPS1531RD - 0000 - 0WMO - WPBA - 0000 - IP67 - 0000 - OEGO - IP30 - ECBI
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

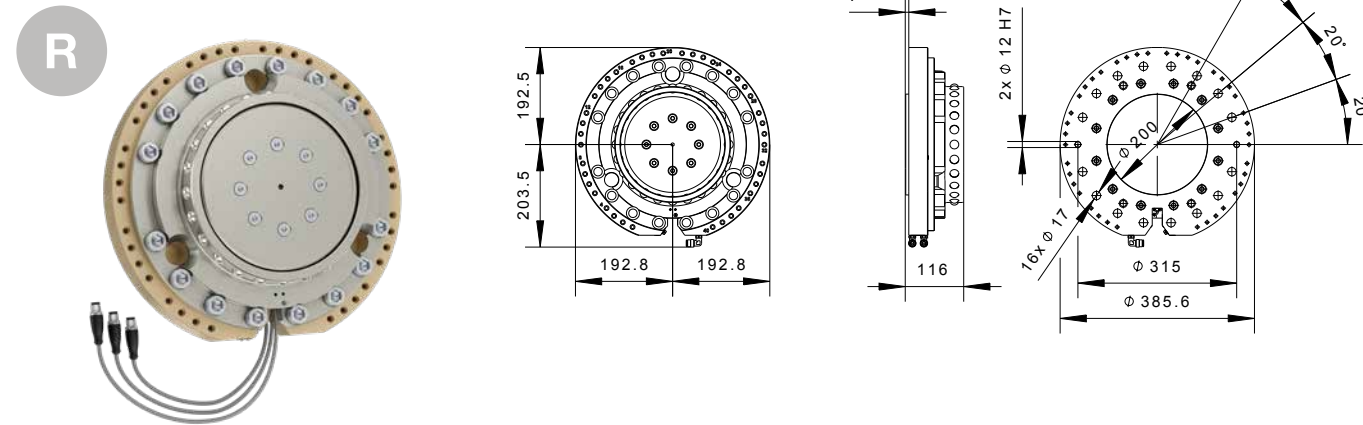
T

4 Reduce your investment by varying your tool sides: Remove the transfer modules that are not required on the respective tool side (replace module code with 00 or 0000).

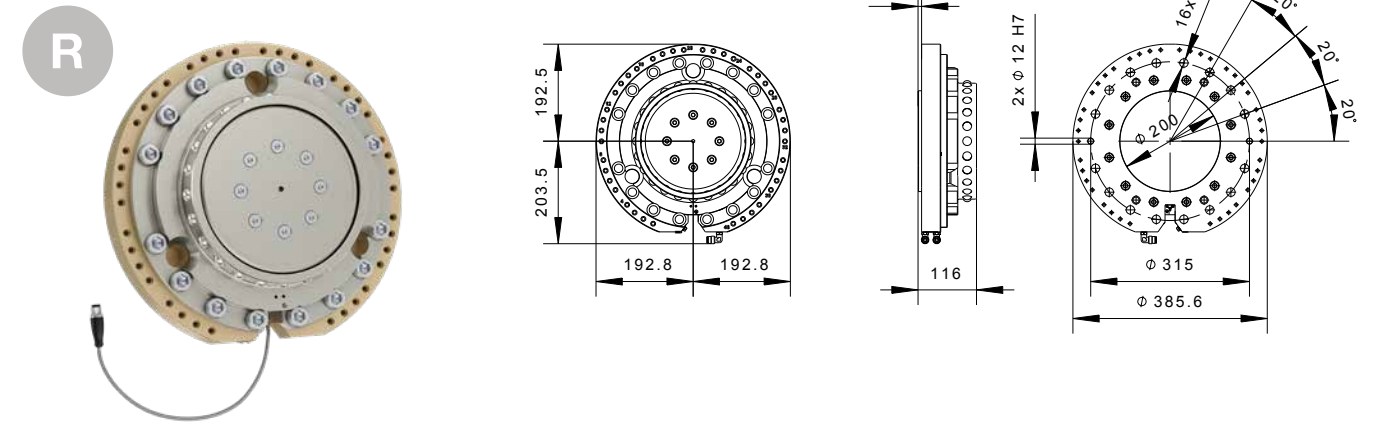
MPS1531RD - 0000 - 0000 - 0000 - 0000 - IP67 - 0000 - 0000 - IP30 - ECBI
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

MPS 2531 base unit robot side

MPS 2531RA/RE

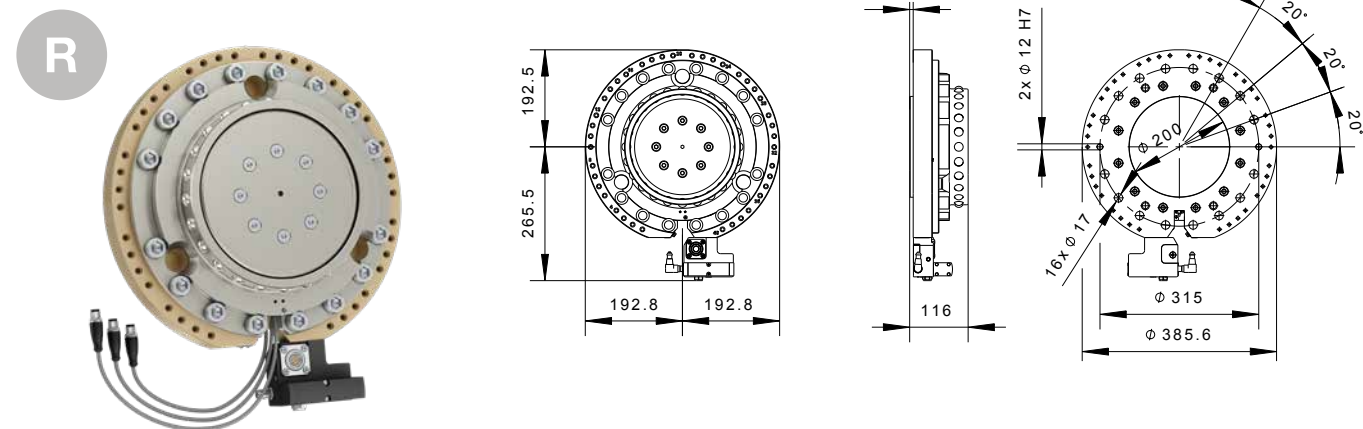


MPS 2531RC/RG

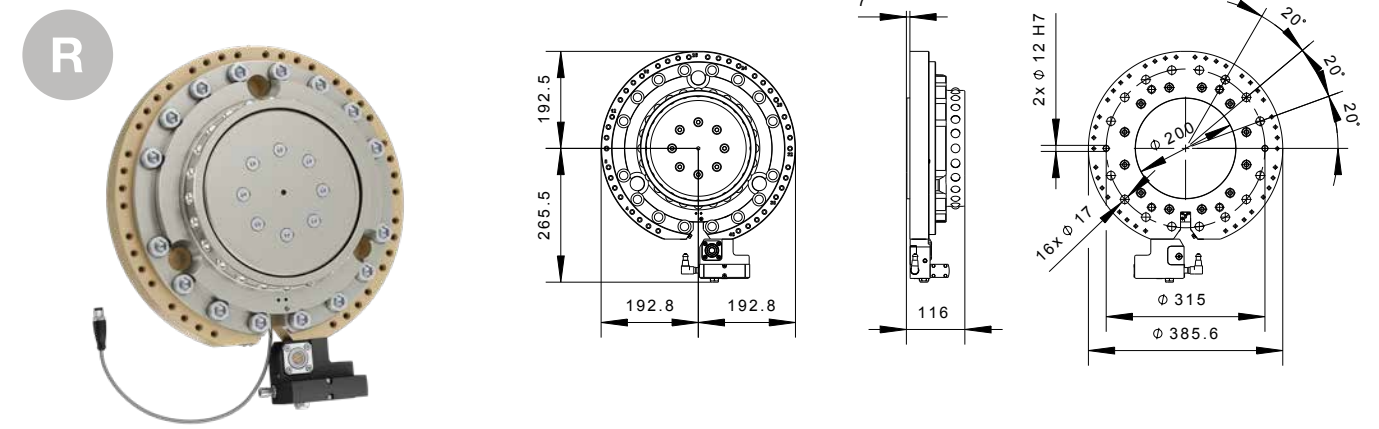


The cable for the Active Docking safety module is included.

MPS 2531RB/RF



MPS 2531RD/RH



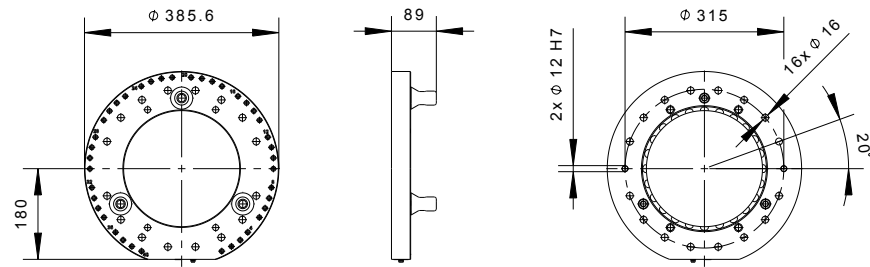
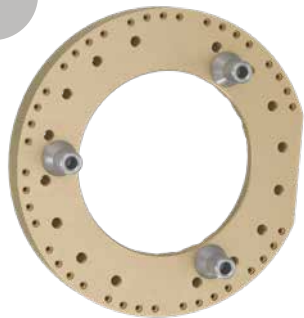
	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81557801	Ø 315 mm	44000 Nm	33000 Nm	2500 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 3x M12	MPS2531RA
	3x NPN/ 3x M12							MPS2531RE	
R	K81557803	Ø 315 mm	44000 Nm	33000 Nm	2500 kg	1x G1/2 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/ 3x M12	MPS2531RB
	3x NPN/ 3x M12							MPS1531RF	

	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Payload	Compressed air connection	Safety module	Sensors / Connections	Module order code
R	K81557805	Ø 315 mm	44000 Nm	33000 Nm	2500 kg	2x Push-lock-hose-Ø 8 mm	-	3x PNP/ 3x M12	MPS2531RC
	3x NPN/ 3x M12							MPS2531RG	
R	K81557807	Ø 315 mm	44000 Nm	33000 Nm	2500 kg	1x G1/2 Inner thread	Pressure switch PNP/NPN 1x M12	3x PNP/ 3x M12	MPS2531RD
	3x NPN/ 3x M12							MPS2531RH	

MPS 2531 base unit tool side

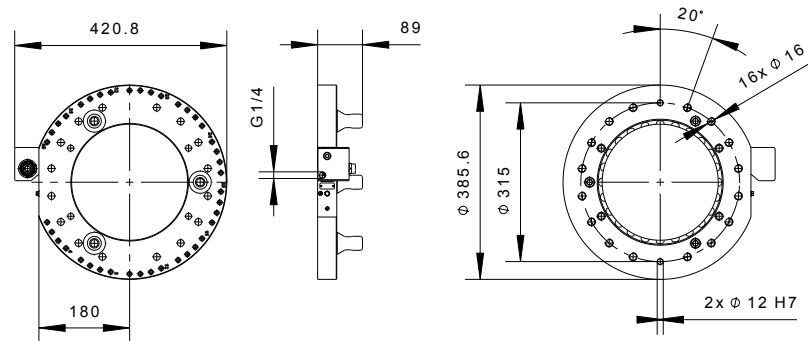
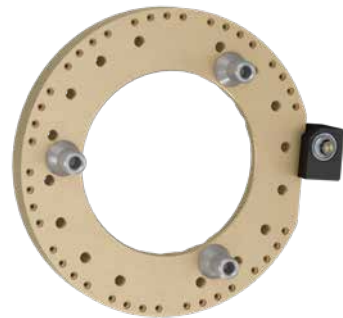
MPS 2531TO

T



MPS 2531TB

T



	Order no.	Pitch circle diameter (PCD)	Bending moment	Torsional moment	Safety module	Module order code
T	K81557680	Ø 315 mm	44000 Nm	33000 Nm	no	MPS2531TO
T	K81557809	Ø 315 mm	44000 Nm	33000 Nm	yes	MPS2531TB

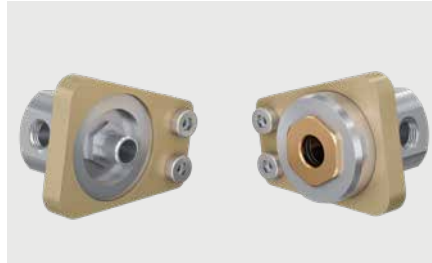
Comprehensive solutions for your applications

Pneumatics and vacuum



from page 46 onwards

Fluids and gases



from page 50 onwards

Hydraulic



from page 51 onwards

Signals, data and servo power



from page 52 onwards

Condition monitoring



from page 66 onwards

Shielding and grounding



from page 70 onwards

Welding power



from page 71 onwards

RFID and tool coding



from page 72 onwards

Ultrasonic, camera systems, Gigabit Ethernet



from page 62 onwards

Safety Performance Level d, Category 3



from page 76 onwards

Customized: material feed-through, hydraulic, optical signals



from page 80 onwards

Module comparison: pneumatics and vacuum

ESSENTIAL

FTM



- no valves on robot or tool side: free passage
- economical, simple design

MORE FROM PAGE 47

ADVANCED

RMK



- with valve on robot side: one-way shut-off
- no upstream valve required

MORE FROM PAGE 48

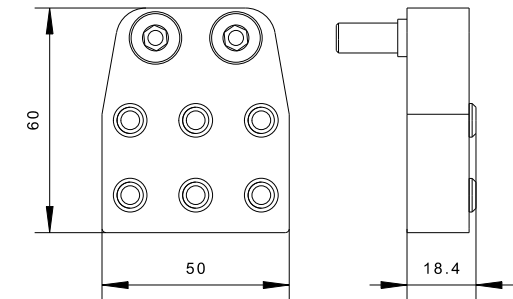
Pneumatics and vacuum FTM

ESSENTIAL

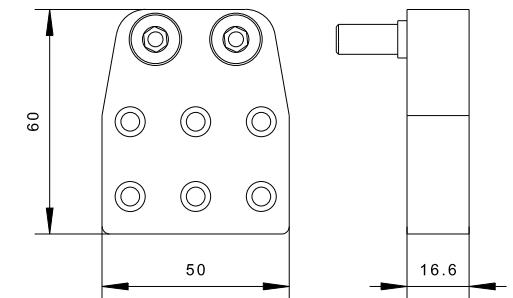
Technical description

- free passage guarantees high volume flows with low flow resistance
- suitable for the transfer of up to 90% vacuum
- economical, simple design

R

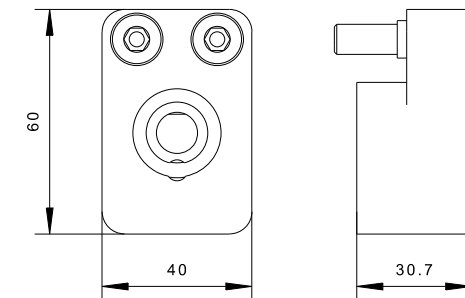


T



	Order no.	Nominal diameter	Circuits	Valve	Pressure (max.)	Flow rate (max.)	Connection	Module order code
R	K81579997	5 mm	6	Free passage	1.0 MPa	37.32 Nm ³ /h	G 1/8 Inner thread	P6
T	K81579998							

R T



	Order no.	Nominal diameter	Circuits	Valve	Pressure (max.)	Flow rate (max.)	Connection	Module order code
R	K81579996	11 mm	1	Free passage	1.0 MPa	215.02 Nm ³ /h	G 3/8 Inner thread	P1
T	K81579996							



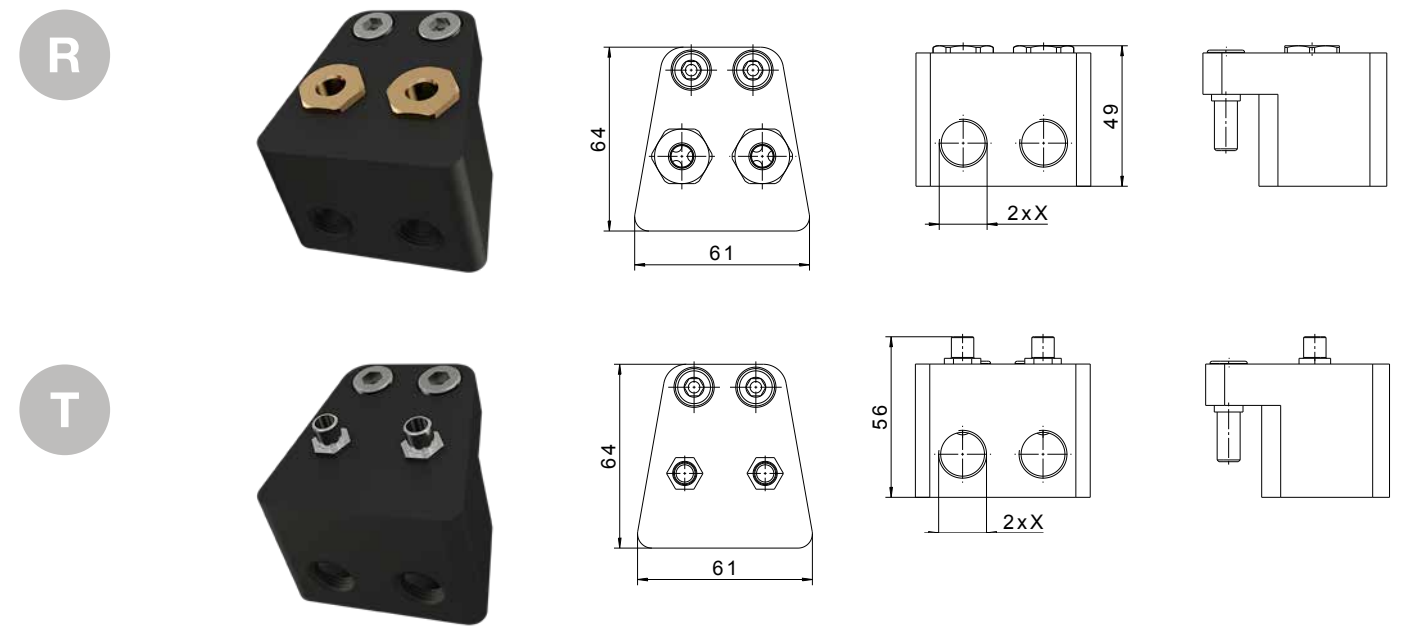
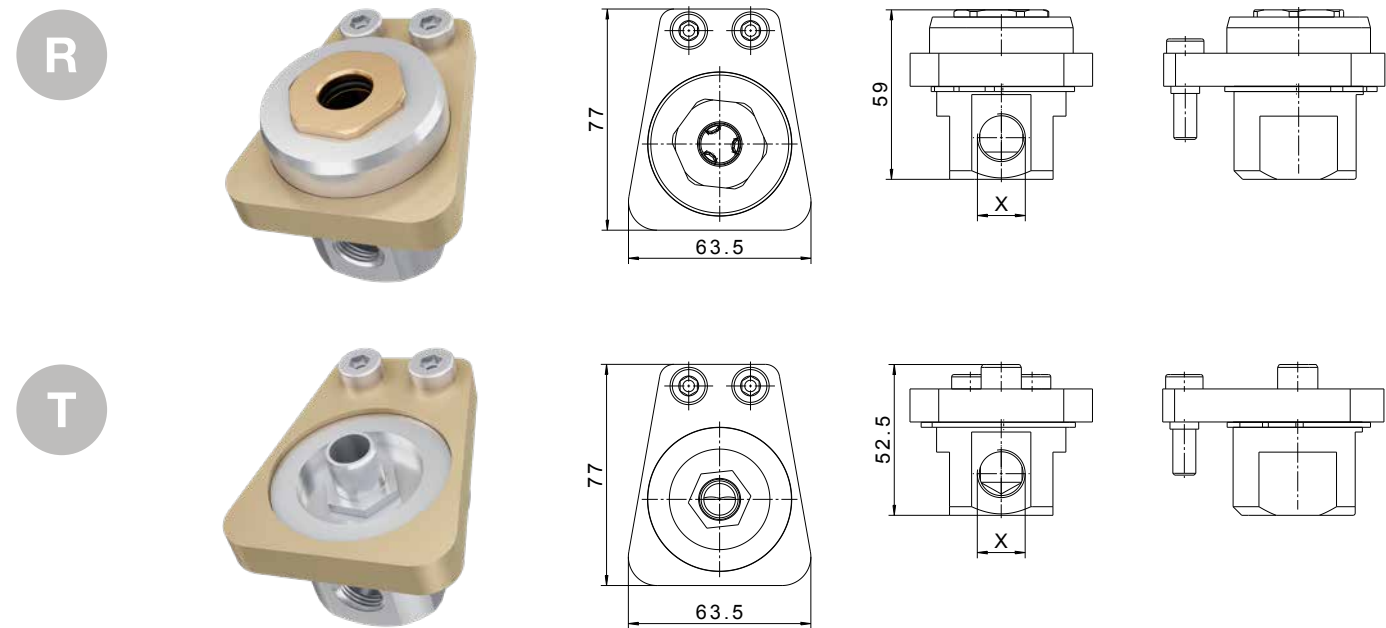
See page 13 for further differentiation of our ESSENTIAL and ADVANCED modules.

Pneumatics and vacuum RMK

Technical description

- quick and easy replacement of the couplings
- large volume flows, low flow resistance
- shut-off on one side by a valve on the robot side

ADVANCED



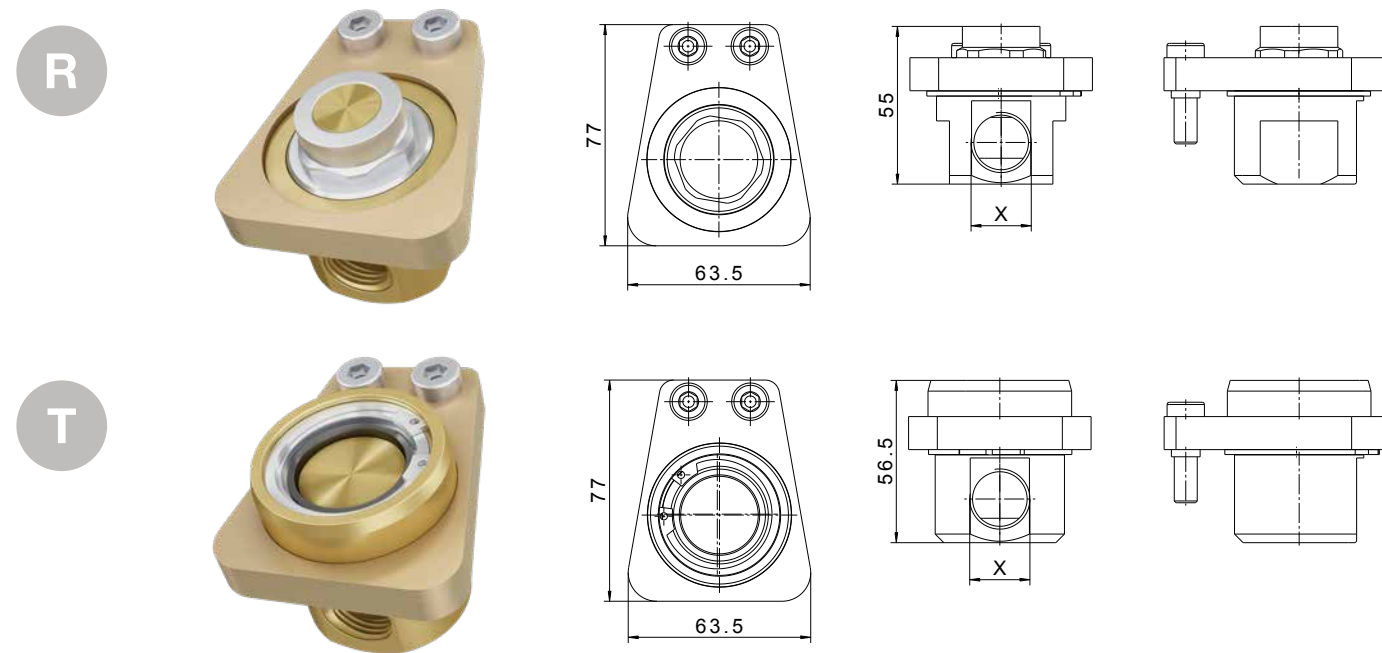
	Order no.	Nominal diameter	Circuits	Valve	Pressure (max.)	Flow rate (max.)	Connection (X)	Module order code
R	K81560784	11 mm	1	One-sided	1.0 MPa	200 Nm ³ /h	G 3/8 Inner thread	WM
T	K81560785			Free passage				
R	K81560827	11 mm	1	One-sided	1.0 MPa	200 Nm ³ /h	NPT 3/8 Inner thread	WO
T	K81560828			Free passage				
R	K81560829	11 mm	1	One-sided	1.0 MPa	200 Nm ³ /h	Rc 3/8 Inner thread	WP
T	K81560830			Free passage				

	Order no.	Nominal diameter	Circuits	Valve	Pressure (max.)	Flow rate (max.)	Connection (X)	Module order code
R	K81560786	6 mm	2	One-sided	1.0 MPa	67 Nm ³ /h	G 3/8 Inner thread	WQ
T	K81560787			Free passage				
R	K81560831	6 mm	2	One-sided	1.0 MPa	67 Nm ³ /h	NPT 3/8 Inner thread	WR
T	K81560832			Free passage				
R	K81560833	6 mm	2	One-sided	1.0 MPa	67 Nm ³ /h	Rc 3/8 Inner thread	WS
T	K81560834			Free passage				

Fluids and gases SPM

Technical description

- clean-break technology for safe, leak-free media transfer with double shut-off
- no contamination of the workplace, no ingress of air into the media circuits
- cartridge system (Quick Change Inserts) for fast and easy maintenance



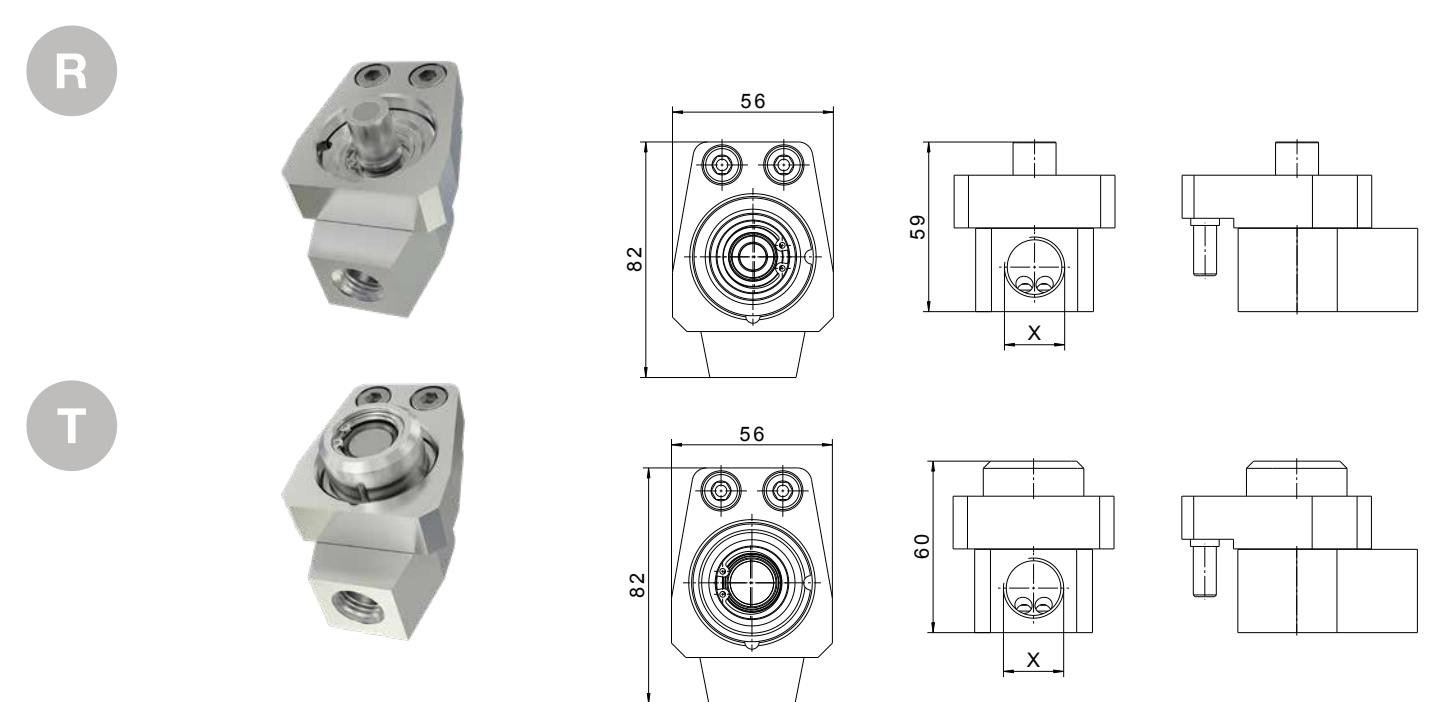
	Order no.	Nominal diameter	Circuits	Valve	Pressure (max.)	Flow rate	Connection (X)	Module order code
R	K81560780	12 mm	1	Both sides clean-break	1.6 MPa	40 l/min* 291 Nm³/h**	G 1/2 Inner thread	WT
T	K81560781							
R	K81560835	12 mm	1	Both sides clean-break	1.6 MPa	40 l/min* 291 Nm³/h**	NPT 1/2 Inner thread	WU
T	K81560836							
R	K81560837	12 mm	1	Both sides clean-break	1.6 MPa	40 l/min* 291 Nm³/h**	Rc 1/2 Inner thread	WV
T	K81560838							

* For liquids at 5 m/s, ** for gases.

Hydraulic SPC

Technical description

- clean-break technology for safe, leak-free media transfer
- no contamination of the workplace, no ingress of air into the media circuits
- cartridge system (Quick Change Inserts) for fast and easy maintenance
- large volume flows, low flow resistance



	Order no.	Nominal diameter	Circuits	Valve	Pressure* (max.)	Flow rate** (max.)	Connection (X)	Module order code
R	K81560728	8 mm	1	Both sides clean-break	25 MPa	15 l/min	G 1/2 Connecting thread	WW
T	K81560727							
R	K81560844	8 mm	1	Both sides clean-break	25 MPa	15 l/min	NPT 1/2 Connecting thread	WX
T	K81560843							
R	K81560846	8 mm	1	Both sides clean-break	25 MPa	15 l/min	Rc 1/2 Connecting thread	WY
T	K81560845							

* The simultaneously occurring maximum pressure load of the coupled tool change system does not exceed 25 MPa.

** Vmax. = 5 m/s; Cv=2.14.

Module comparison: signals, data and servo power

ESSENTIAL

D-SUB and 3 to 8 pole electrical modules



- lightweight & compact plastic housing
- pressure contact technology
- up to 100,000 mating cycles with few tool changes per day
- protection class: IP30 for clean environments

MORE FROM PAGE 53

ADVANCED

MultiDNet-R



- robust metal housing
- Floating Contact Technology with MULTILAM®
- up to 1,000,000 mating cycles per hour for frequent tool changes
- protection class: IP65 for harsh environments

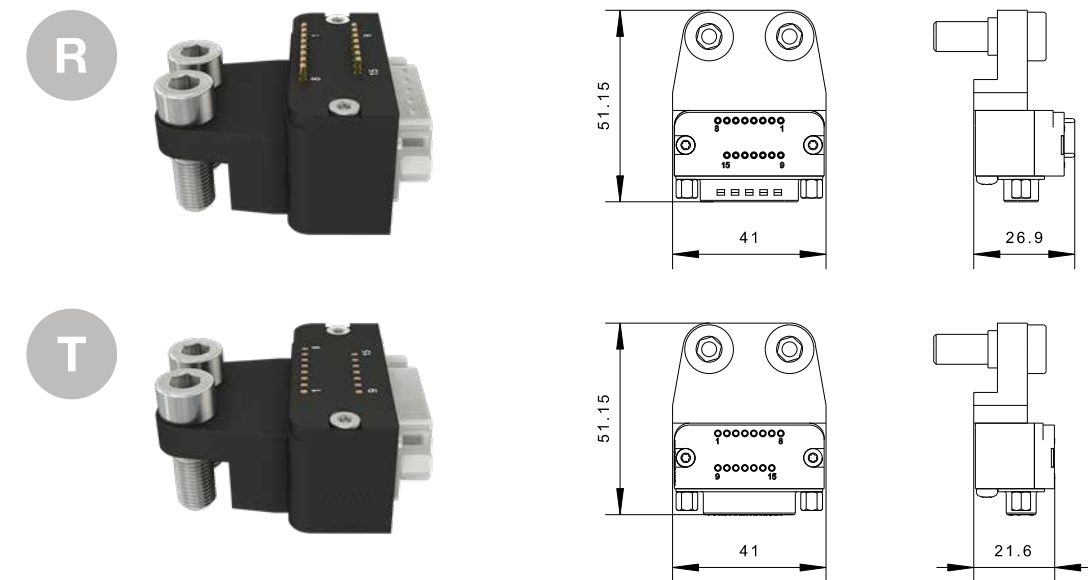
MORE FROM PAGE 55

Signals and data D-SUB

Technical description

- lightweight & compact plastic housing
- multi-pole applications up to 15 poles or 26 poles
- up to 100,000 mating cycles

ESSENTIAL



	Order no.	Pole	Connection	Coding	Voltage / Current	Protection class	Module order code
R	K81560545	15	D-SUB 15-pin	2-row	25 VAC*/ 60 VDC max. 2.6 - 5.5 A	IP30	SA
T	K81560546		D-SUB 15-socket				
R	K81560547	26	D-SUB 26-pin	3-row	25 VAC*/ 60 VDC max. 1.7 - 3.8 A	IP30	SB
T	K81560548		D-SUB 26-socket				

* max. 50 VAC touch-protected in coupled state.

Accessories for connectors

	Order no.	Type	Connection type	Suitable for
R	B27598873	Socket board D-SUB 15	Solder Cup	0SA0
T	B27598874	Pin board D-SUB 15	Solder Cup	0SA0
R	B27598871	Socket board D-SUB 26	Solder Cup	0SB0
T	B27598872	Pin board D-SUB 26	Solder Cup	0SB0

Accessories for housing

	Order no.	Type	Suitable for
	B27598876	Plastic housing D-SUB - straight cable output	0SA0/0SB0
	K81453110	Plastic housing D-SUB - 90° cable output	0SA0/0SB0



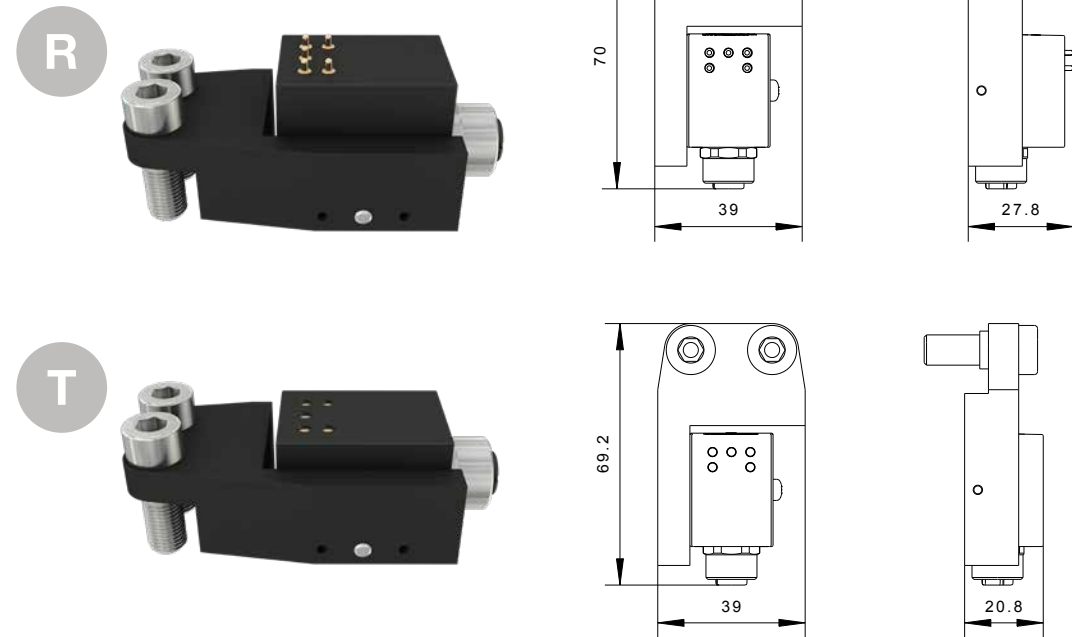
See page 13 for further differentiation of our ESSENTIAL and ADVANCED modules.

Signals and data 3 to 8 pole electrical modules

ESSENTIAL

Technical description

- Plug & Play solution
- proof printed circuit board against fail wiring
- light weight and compact design
- up to 100,000 mating cycles



	Order no.	Pole	Connection	Coding	Voltage / Current	Protection class	Description	Module order code
R	K81560539	3	M8-pin	R	25 VAC*/ 60 VDC max. 4A	IP30	-	R3
T	K81560540		M8-socket					
R	K81560537	4	M8-pin	A	25 VAC*/ 60 VDC max. 4A	IP30	-	A4
T	K81560538		M8-socket					
R	K81560531	4 + Shield	M12-socket	D	25 VAC*/ 60 VDC max. 4A	IP30	ProfiNet/ Ethernet	D4
T	K81560532		M12-socket					
R	K81560533	5	M12-pin	B	25 VAC*/ 60 VDC max. 4A	IP30	-	B5
T	K81560534		M12-socket					
R	K81560535	8	M12-pin	A	25 VAC*/ 60 VDC max. 2A	IP30	-	A8
T	K81560536		M12-socket					

* max. 50 VAC touch-protected in coupled state.

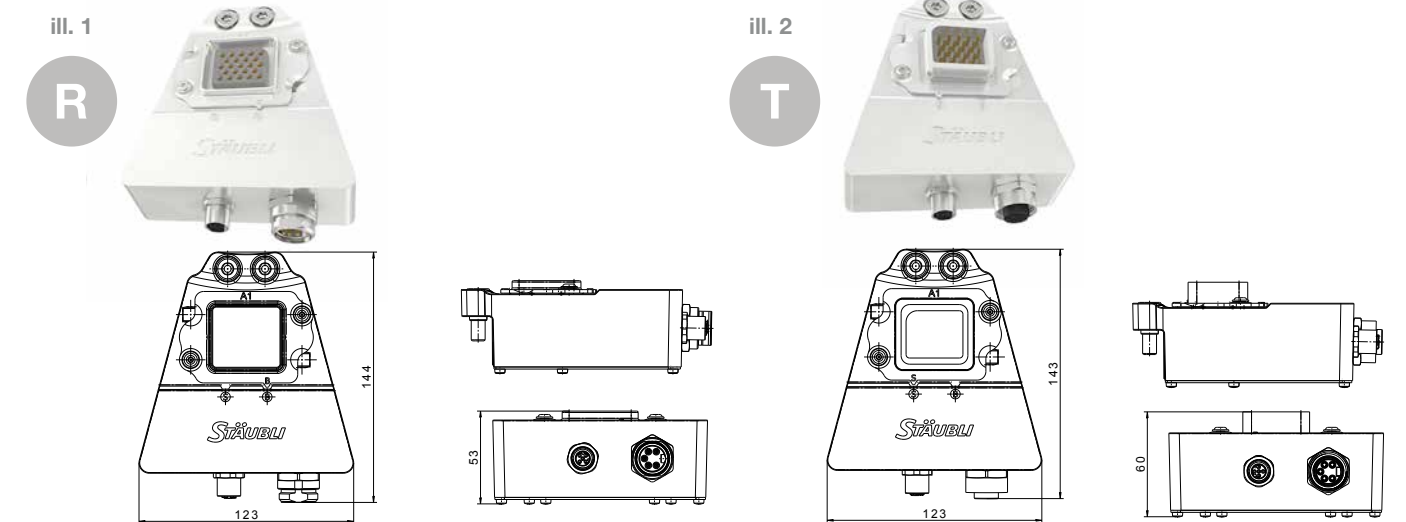
Signals, data & servo power MultiDNet-R

ADVANCED

Technical description

- Floating Contact Technology with MULTILAM®
- reliable and durable contact technology
- protection class: IP 65 (in a coupled state)
- excellent shielding technology for signals, data and power transfer
- up to 1,000,000 mating cycles
- supplied as standard with direct wiring
- available with quick-change insert on request

Signal transfer ProfiNet



	Order no.	Transfer poles	Voltage / Current (max.)	Connection	Module order code	ill.
R	K81451746	4+SH and 4+PE	250VAC/4A - 250VAC/6A	7/8" 5-pol., M12-D coded	ECBK	1
T	K81451747	4+SH and 4+PE	250VAC/4A - 250VAC/6A	7/8" 5-pol., M12-D coded		2

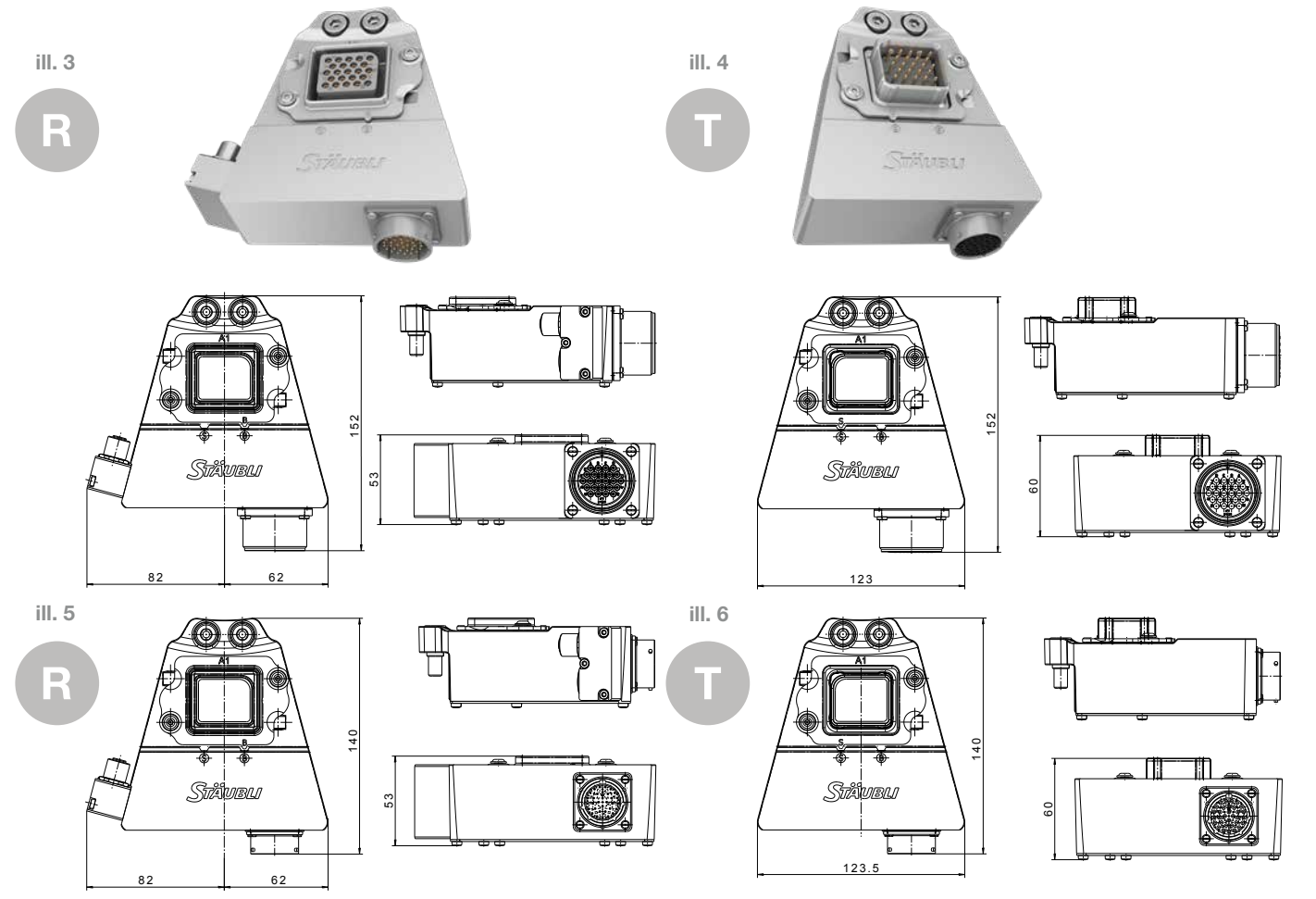
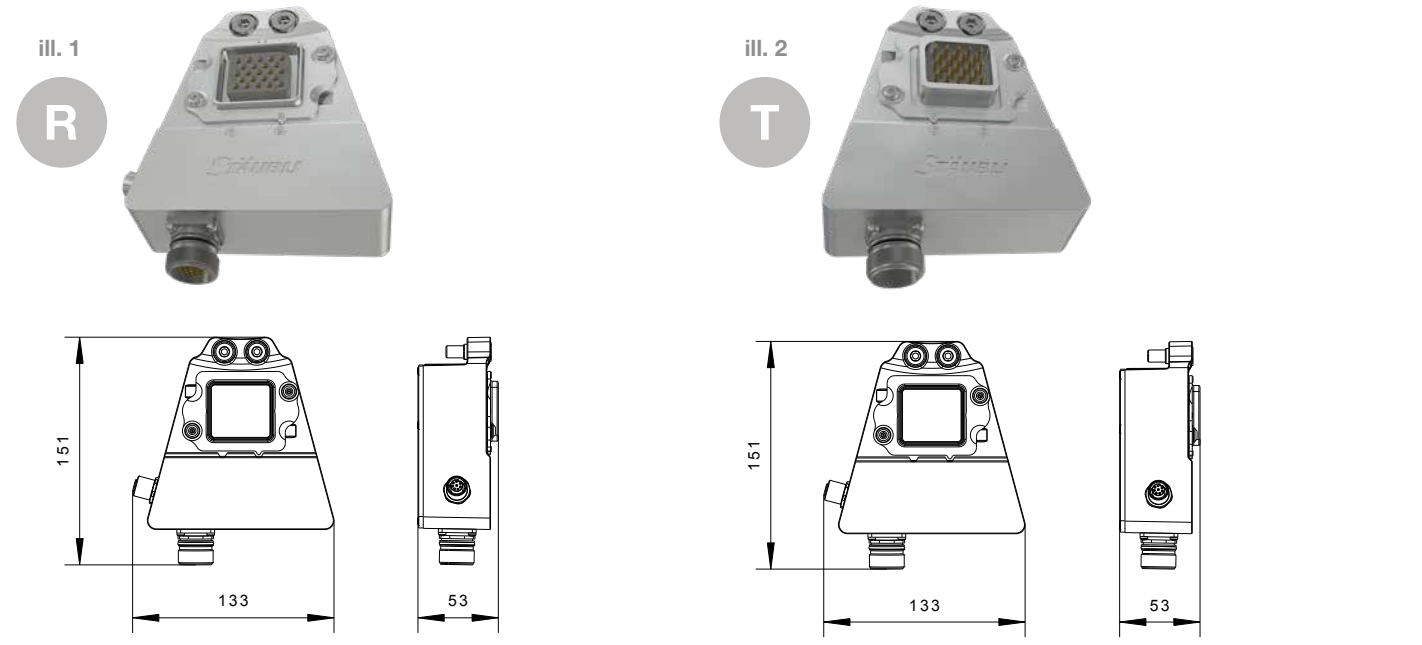
The wiring diagram can be found on page 110.

Accessories for connectors

	Order no.	Mating connector	Connection*	Connection type	Suitable for
R	B27595660	straight cable output	7/8" 5-pol.	screw terminal	ECBK
T	B27595653	straight cable output	7/8" 5-pol.		
R	B27595985	straight cable output	M12-D coded	screw terminal	ECBK
T	B27595985	straight cable output	M12-D coded		

* Depending on the connection cable used, the max. number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Signal transfer and docking signals



	Order no.	Transfer poles	Voltage / Current (max.)	Connection	Module order code	ill.
R	K81452533	13 + dock signal	63VDC/63VAC - 7A	A EG A 560 MR 93 00 0201 400	ECBL	1
T	K81452535	13	63VDC/63VAC - 7A	A EG A 561 FR 91 00 0201 400		2

The wiring diagram can be found on page 110.

	Order no.	Transfer poles	Voltage / Current (max.)	Connection*	Module order code	ill.
R	K81451299	18 + dock signal	60VDC/30VAC - 7.5A	CA3102E-24-28P	ECBI	3
T	K81451300	18	60VDC/30VAC - 7.5A	CA3102E-24-28S		4
R	K81451142	23 + dock signal	60VDC/30VAC - 7.5A	KPT2E18-32P	ECBB	5
T	K81451143	23	60VDC/30VAC - 7.5A	KPT2E18-32S		6

* ITT Cannon, Amphenol and DDK are standardised connectors and plug-compatible. The wiring diagram can be found on page 111.

Accessories for connectors

	Order no.	Mating connector	Connection*	Connection type	Suitable for
R	B27597873	straight cable output	A ST A 558 FR 92 73 0100 400	crimp barrel	ECBL
T	B27598481	straight cable output	A ST A 559 MR 93 73 0100 400		
R	B27598497	90° cable output	A SD A 558 FR 91 58 0100 400	crimp barrel	ECBL
T	B27598589	90° cable output	A SD A 559 MR 93 42 0100 000		

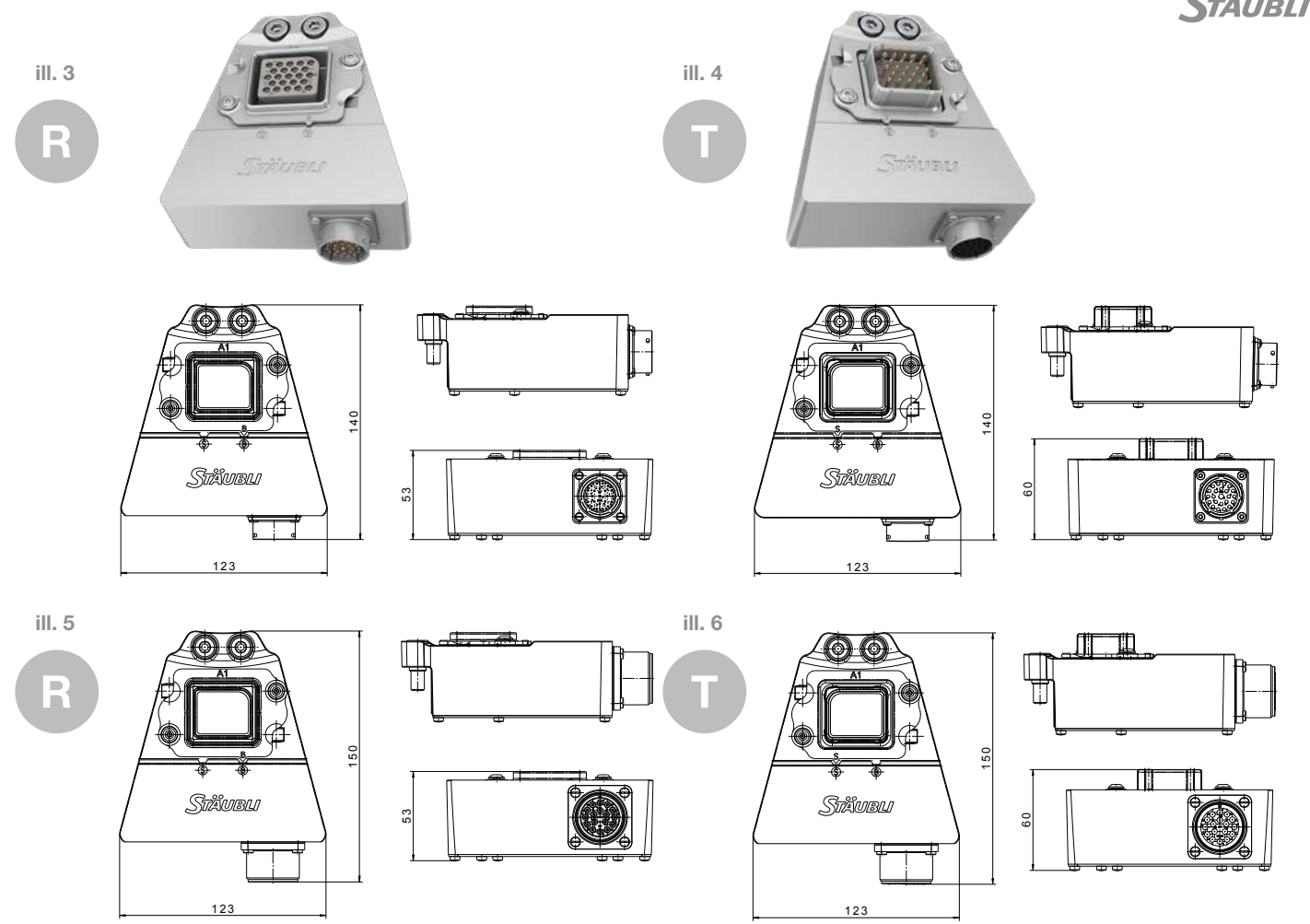
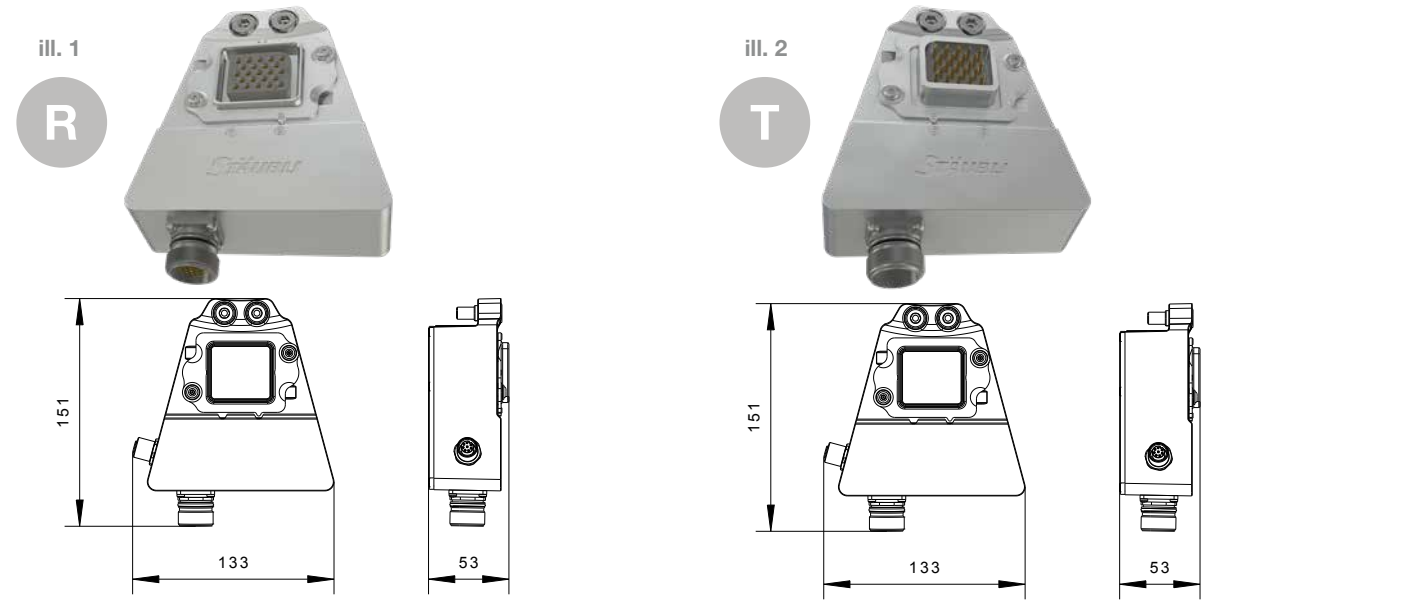
** Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Accessories for connectors

	Order no.	Mating connector	Connection**	Connection type	Suitable for
R	B27597976	straight cable output	CA3106E-24-28S	crimp barrel	ECBI
T	B27597977	straight cable output	CA3106E-24-28P		
R	B27597978	90° cable output	CA3108E-24-28S		
T	B27597979	90° cable output	CA3108E-24-28P		
R	B27597734	straight cable output	KPTC6F18-32S	crimp barrel	ECBB
T	B27597737	straight cable output	KPTC6F18-32P		
R	B27597735	90° cable output	KPTC8F18-32S		
T	B27597738	90° cable output	KPTC8F18-32P		

** Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Signal transfer



	Order no.	Transfer poles	Voltage / Current (max.)	Connection	Module order code	ill.
R	K81452534	19	63VDC/63VAC - 7A	A EG A 560 MR 93 00 0201 400	ECBM	1
T	K81452535	19	63VDC/63VAC - 7A	A EG A 561 FR 91 00 0201 400		2

The wiring diagram can be found on page 112.

	Order no.	Transfer poles	Voltage / Current (max.)	Connection*	Module order code	ill.
R	K81451303	23	60VDC/30VAC - 7.5A	KPT2E16-23P	ECBA	3
T	K81451304			KPT2E16-23S		4
R	K81451305	17	60VDC/30VAC - 7.5A	CA3102E-20-29P	ECBD	5
T	K81451306			CA3102E-20-29S		6

* ITT Cannon, Amphenol and DDK are standardised connectors and plug-compatible. The wiring diagram can be found on page 113.

Accessories for connectors

	Order no.	Mating connector	Connection*	Connection type	Suitable for
R	B27597873	straight cable output	A ST A 558 FR 92 73 0100 400	crimp barrel	ECBM
T	B27598481	straight cable output	A ST A 559 MR 93 73 0100 400		
R	B27598497	90° cable output	A SD A 558 FR 91 58 0100 400	crimp barrel	ECBM
T	B27598589	90° cable output	A SD A 559 MR 93 42 0100 000		

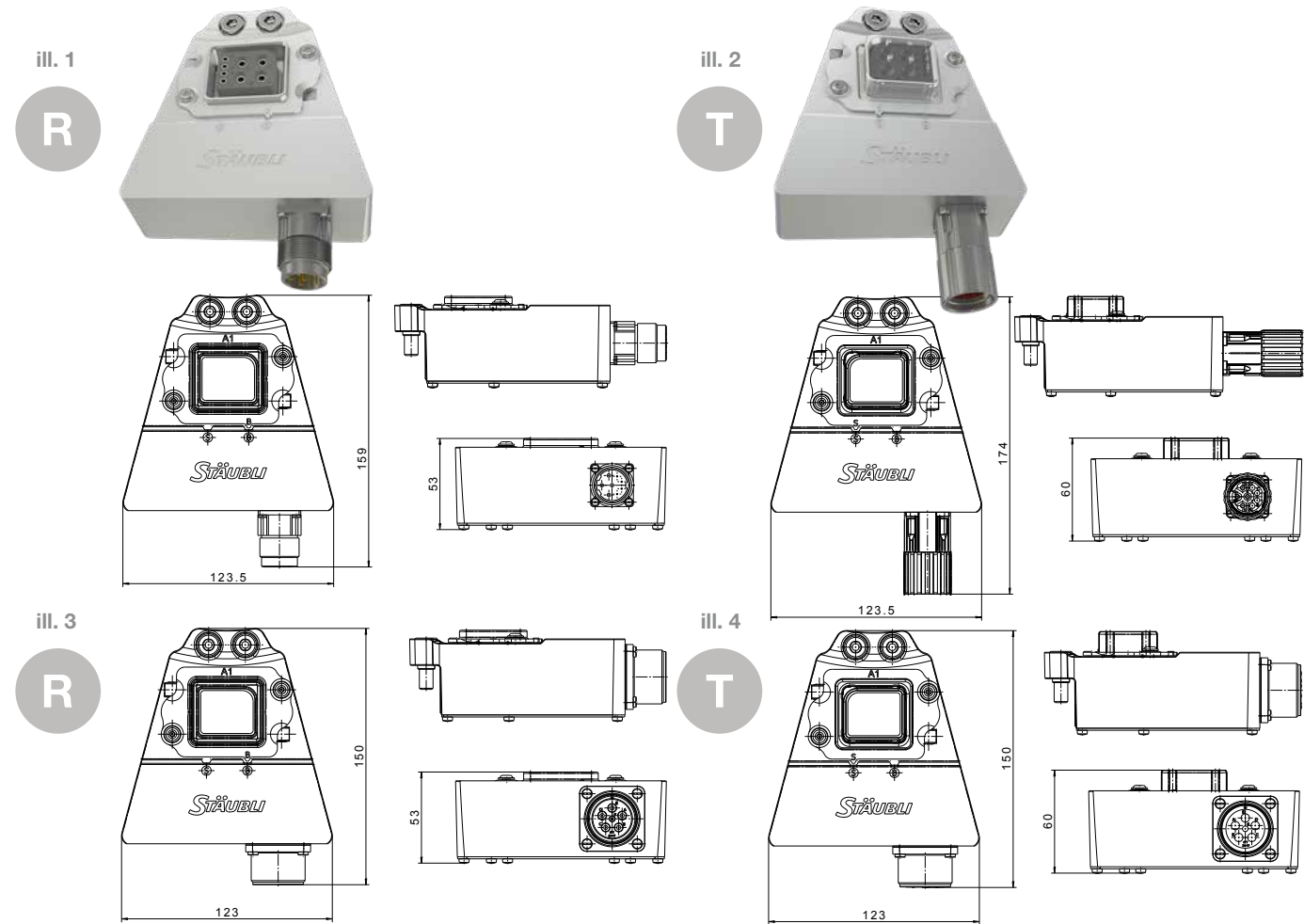
* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Accessories for connectors

	Order no.	Mating connector	Connection**	Connection type	Suitable for
R	B27597727	straight cable output	KPTC6F16-23S	crimp barrel	ECBA
T	B27597731	straight cable output	KPTC6F16-23P		
R	B27597728	90° cable output	KPTC8F16-23S		
T	B27597732	90° cable output	KPTC8F16-23P		
R	B27597972	straight cable output	CA3106E-20-29S	crimp barrel	ECBD
T	B27597973	straight cable output	CA3106E-20-29P		
R	B27597974	90° cable output	CA3108E-20-29S		
T	B27597975	90° cable output	CA3108E-20-29P		

** Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Servo power transfer



	Order no.	Transfer poles	Voltage / Current (max.)	Connection*	Module order code	ill.
R	K81451144	3+PE	630VAC/VDC - 30A	B EG A 120 MR 11 00 0200 400	ECBC	1
T	K81451145	4	250VAC/VDC - 7A	B DF A 108 FR 05 00 0150 000		
R	K81451301	3+PE	400VAC/VDC - 22A	CA3102E-20-17P	ECBF	3
T	K81451302	4	250VAC/VDC - 7A	CA3102E-20-17S		

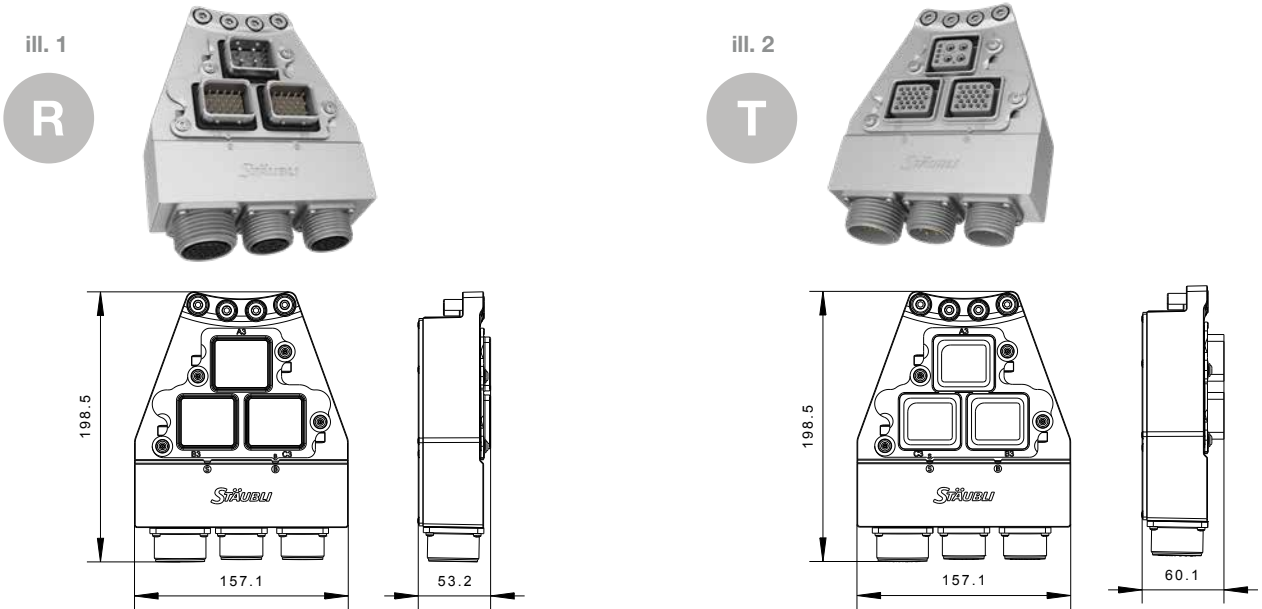
* ITT Cannon, Amphenol and DDK are standardised connectors and plug-compatible. The wiring diagram can be found on page 114.

Accessories for connectors

	Order no.	Mating connector	Connection**	Connection type	Suitable for
R	B27597360	straight cable output	B ST A 078 FR 05 42 0235 400	crimp barrel	ECBC
T	B27597414	straight cable output	B KU A 199 MR 38 42 0200 000		
R	B27597980	straight cable output	CA3106E-20-17S	crimp barrel	ECBF
T	B27597981	straight cable output	CA3106E-20-17P		
R	B27597982	90° cable output	CA3108E-20-17S		
T	B27597983	90° cable output	CA3108E-20-17P		

** Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Signal and servo power transfer



	Order no.	Connection no.	Transfer poles	Voltage / Current (max.)	Connection*	Module order code	ill.
R	K81452936	1	3+PE+2	3+PE = 400VAC/ VDC - 22A 2 = 250VAC/VDC - 7A	CA3102E-20-17P	ECBQ	1
		2	23	60VDC/30VAC - 7,5A	CA3102E-24-28P		
		3	17	60VDC/30VAC - 7,5A	CA3102E-20-29P		
T	K81452937	1	3+PE+2	3+PE = 400VAC/ VDCa - 22A 2 = 250VAC/VDC - 7A	CA3102E-20-17S	ECBQ	2
		2	23	60VDC/30VAC - 7,5A	CA3102E-24-28S		
		3	17	60VDC/30VAC - 7,5A	CA3102E-20-29S		

* ITT Cannon, Amphenol and DDK are standardised connectors and plug-compatible. The wiring diagram can be found on page 115.

Accessories for connectors

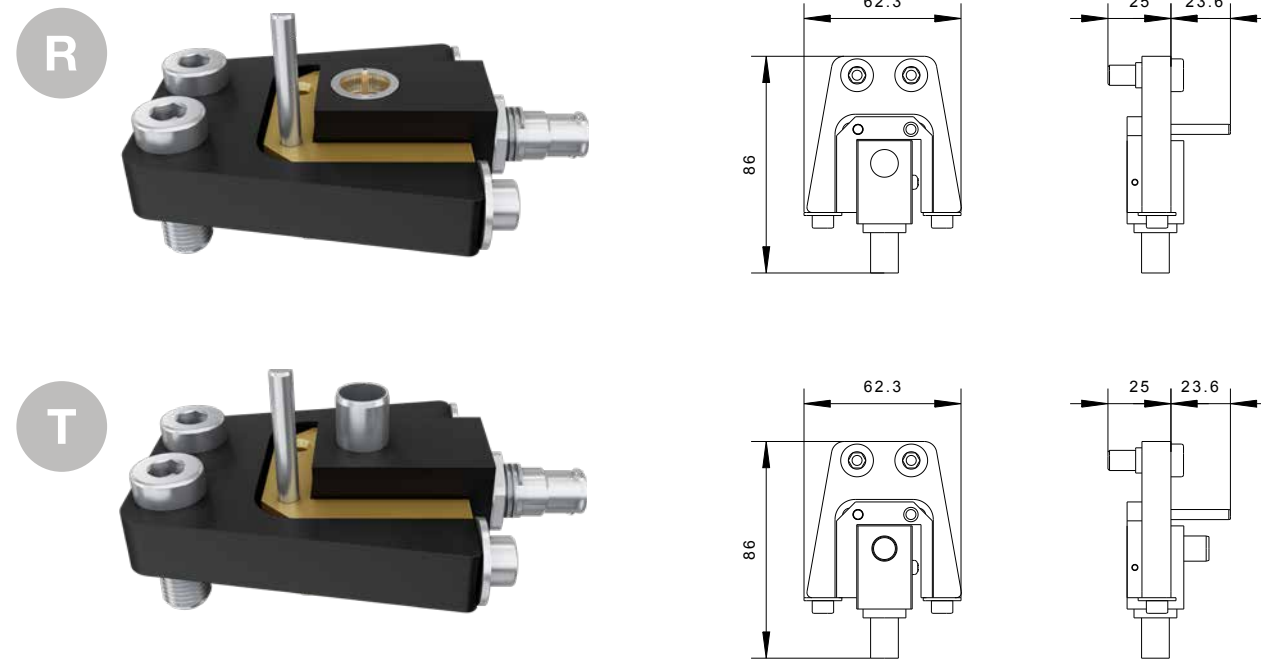
	Order no.	Connection no.	Mating connector	Connection**	Connection type	Suitable for
R	B27597980	1	gerader cable output	CA3106E-20-17S	crimp barrel	ECBQ
T	B27597981	1	gerader cable output	CA3106E-20-17P		
R	B27597982	1	90° cable output	CA3108E-20-17S	crimp barrel	ECBQ
T	B27597983	1	90° cable output	CA3108E-20-17P		
R	B27597976	2	gerader cable output	CA3106E-24-28S	crimp barrel	ECBQ
T	B27597977	2	gerader cable output	CA3106E-24-28P		
R	B27597978	2	90° cable output	CA3108E-24-28S	crimp barrel	ECBQ
T	B27597979	2	90° cable output	CA3108E-24-28P		
R	B27597972	3	gerader cable output	CA3106E-20-29S	crimp barrel	ECBQ
T	B27597973	3	gerader cable output	CA3106E-20-29P		
R	B27597974	3	90° cable output	CA3108E-20-29S		
T	B27597975	3	90° cable output	CA3108E-20-29P	crimp barrel	ECBQ

** Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

Signals and data DuraDock Vision

Technical description

- for camera applications
- lightweight plastic housing
- processing of analog image and video signals
- suitable for RG 59 standard cable
- up to 100,000 mating cycles

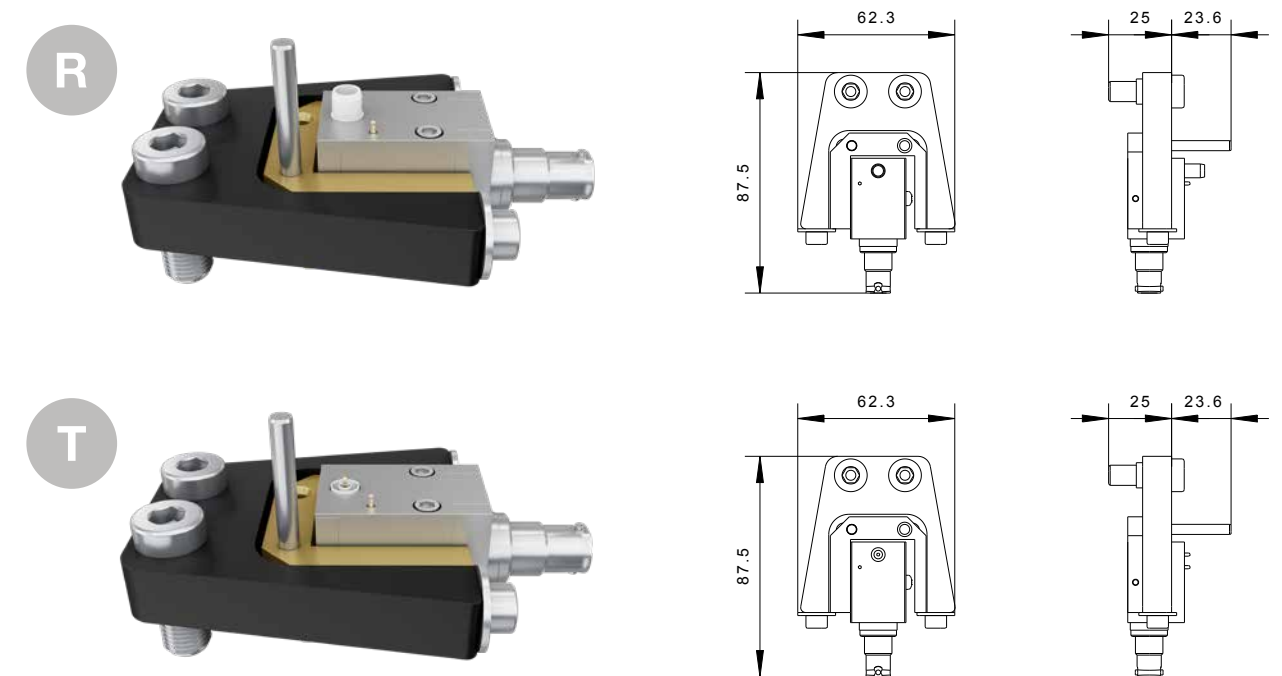


	Order no.	Pole	Connection	Frequency	Impedance	Voltage / Current	Protection class	Module order code
R	K81599963	1	BNC	up to 500 MHz	75 Ohm	24 VDC - max. 1A	IP30	B1
T	K81599964							

Signals and data DuraDock Ultra

Technical description

- for ultrasonic applications
- robust aluminium housing
- designed for the use of SHV - Safety High Voltage
- suitable for RG 58 standard cable
- up to 100,000 mating cycles



	Order no.	Pole	Connection	Voltage / Frequency	Impedance	Current	Protection class	Module order code
R	K81599965	1	SHV	1500 VDC up to 40 kHz 2000 VDC up to 30 kHz 3500 VDC*	50 Ohm	max. 10A	IP30	H1
T	K81599966							

* Up to 3500 V possible (at relative humidity 30%, ED 10% and frequency < 30 kHz).

Signals and data DuraDock Giga10

Technical description

- suitable for Gigabit Ethernet applications
- suitable for docked camera systems
- up to 1,000,000 mating cycles

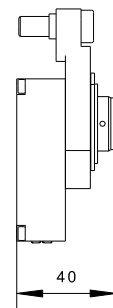
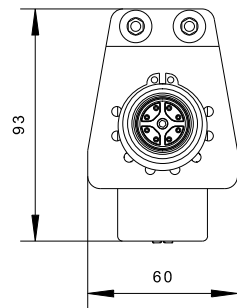
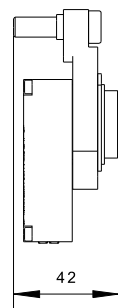
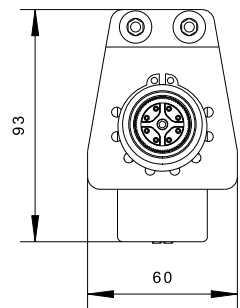
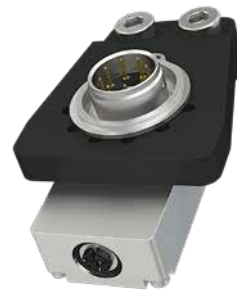


The DuraDock Giga10 transfer module is equipped with an X-coded socket on the robot and tool side, making it compliant with ProfiNet guidelines. It is ideal for use in applications with Gigabit Ethernet and docked camera systems.

R



T



	Order no.	Type	Plug connection	Suitable for	Protection class	Description	Module order code
R	K81579314	Giga10 S90-RS-M12X	M12 socket x-coded	Network cable, Ethernet, CAT6A, 8 pin (10 GBit/s)	IP65	Pre-assembled and tested connector	EG
T	K81579315	Giga10 S90-TS-M12X					

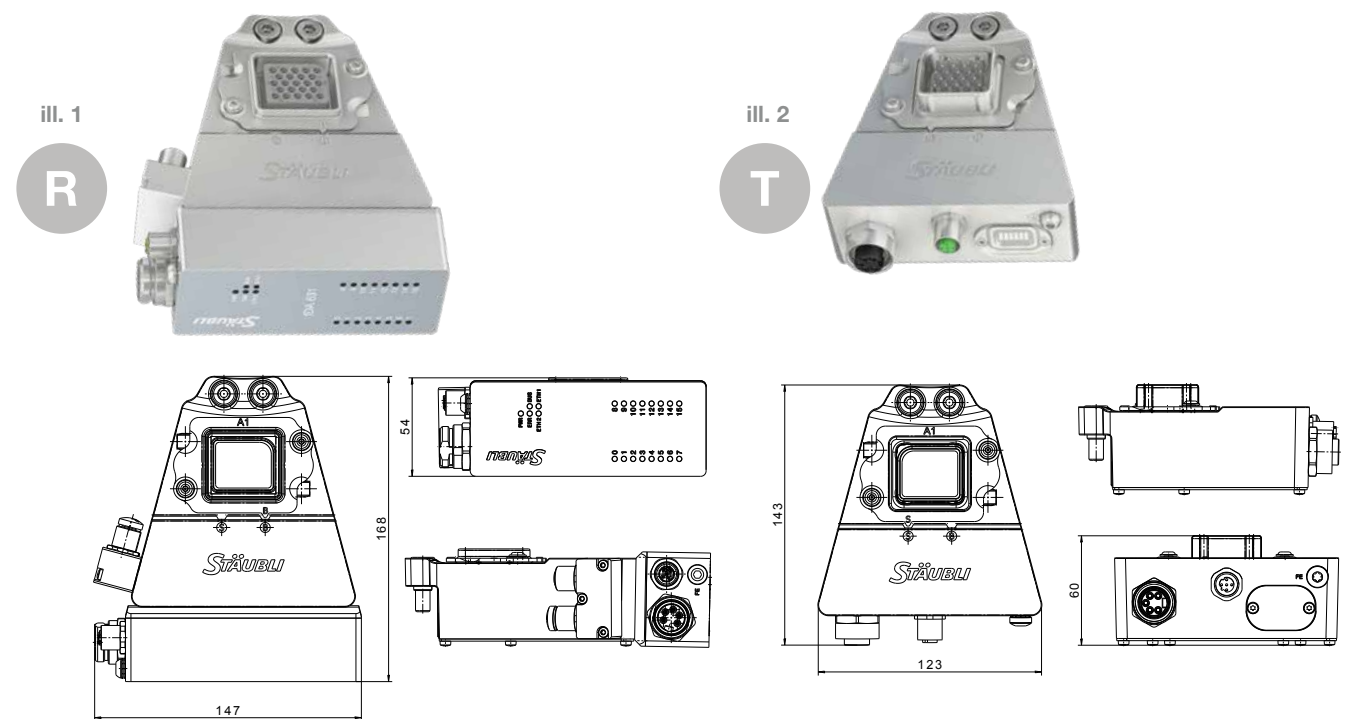
Condition monitoring integrated bus module IDA

The integrated IDA bus module is a freely programmable I/O module for network transfer housed in the MultiDNet-R electrical module. The IDA enables the space-saving and functional connection of the condition monitoring unit to the robotic tool changing system and to the next-higher control level.

Easy-to-read LED status displays and convenient web server configuration make the IDA even easier to use. An integrated current cut-off module for the 24V power supply prevents contact wear without any programming effort.

Technical description

- compact design
- compatible with Modbus TCP, Ethernet/ IP and ProfiNet
- LEDs for operating states
- configuration with a web server
- freely programmable I/O module
- integrated 6 bit tool coding



	Order no.	Description	Connection	Module order code	ill.
R	K81451532	Integrated IDA bus module for condition monitoring	7/8" 5-pol. M12-D coded	IDAA	1
T	K81451533				2

The wiring diagram can be found on page 109.
The IDAB module can only be used in conjunction with the basic units of the robot side MPS 631RC and MPS 631RD.

Accessories for connectors

	Order no.	Mating connector	Connection	Connection type	Suitable for
R	B27595660	straight cable output	7/8" 5-pol.	Screw terminal	IDAA
T	B27595653	straight cable output	7/8" 5-pol.		
R	B27595985	straight cable output	M12-D coded	Screw terminal	IDAA
T	B27595985	straight cable output	M12-D coded		

Electrical and mechanical data

Versorgung	
Supply voltage	24 V DC
Permissible range	18 to 30 V DC
Power supply connection technology	Power supply connection 7/8 5-pole
Potential separation	Galvanic separation of the voltage groups V1- and AUX2, Dielectric strength up to 500 V DC

System data	
Fieldbus transfer rate	10 Mbps/ 100 Mbps
Fieldbus connection technology	Connection data M12-D coded
Automatic protocol recognition	Web server standard: 192.168.1.254
Service interface	ident. connection data M12-D coded

Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Function codes supported	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	8
Input register start address	0 (0x0000 hex)
Output register start address	2048 (0x0800 hex)

Ethernet/IP	
Addressing	in accordance with Ethernet/ IP™ specification
Quick Connect (QC)	< 500 ms
Device Level Ring (DLR)	supported
Number of TCP connections	3
Number of CIP connections	10
Input Assembly Instance	103
Output Assembly Instance	104
Configuration Assembly Instance	106

PROFINET	
Addressing	DCP
Conformance class	B (RT)
Mini Cycle Time	1 ms
Fast Start-Up (FSU)	< 250 ms
Diagnostics	in accordance with PROFINET alarm handling
Topology recognition	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported

General data

Standard/ directive conformity	
Electromagnetic compatibility	per EN 61131-2

General information	
Dimensions (W x L)	46 x 115 mm
Operating temperature	-40 ... +45 °C
Storage temperature	-40 ... +85 °C
Halogen-free	yes

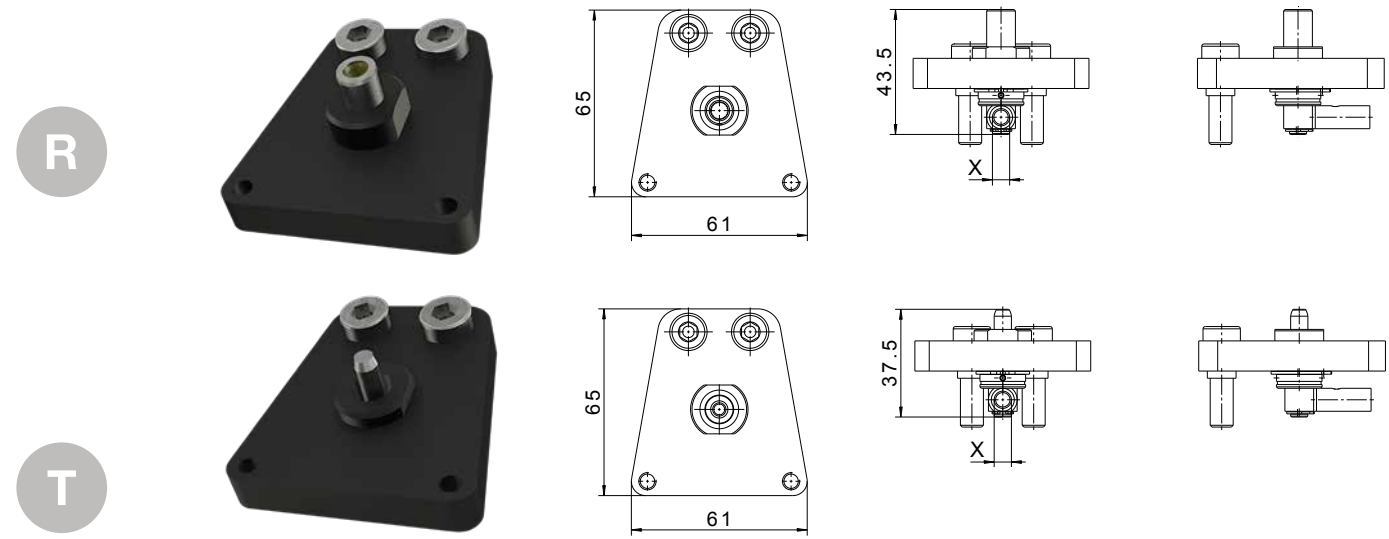
Shielding and grounding Ground Pin

Technical description

- Floating Contact Technology with MULTILAM®
- low weight
- particularly demanding shielding requirements
- particularly suitable for modern bus modules such as ProfiNet and Ethernet IP
- up to 500,000 mating cycles



The integrated grounding point complies with the standard for all common standard applications (see pages 6-7).

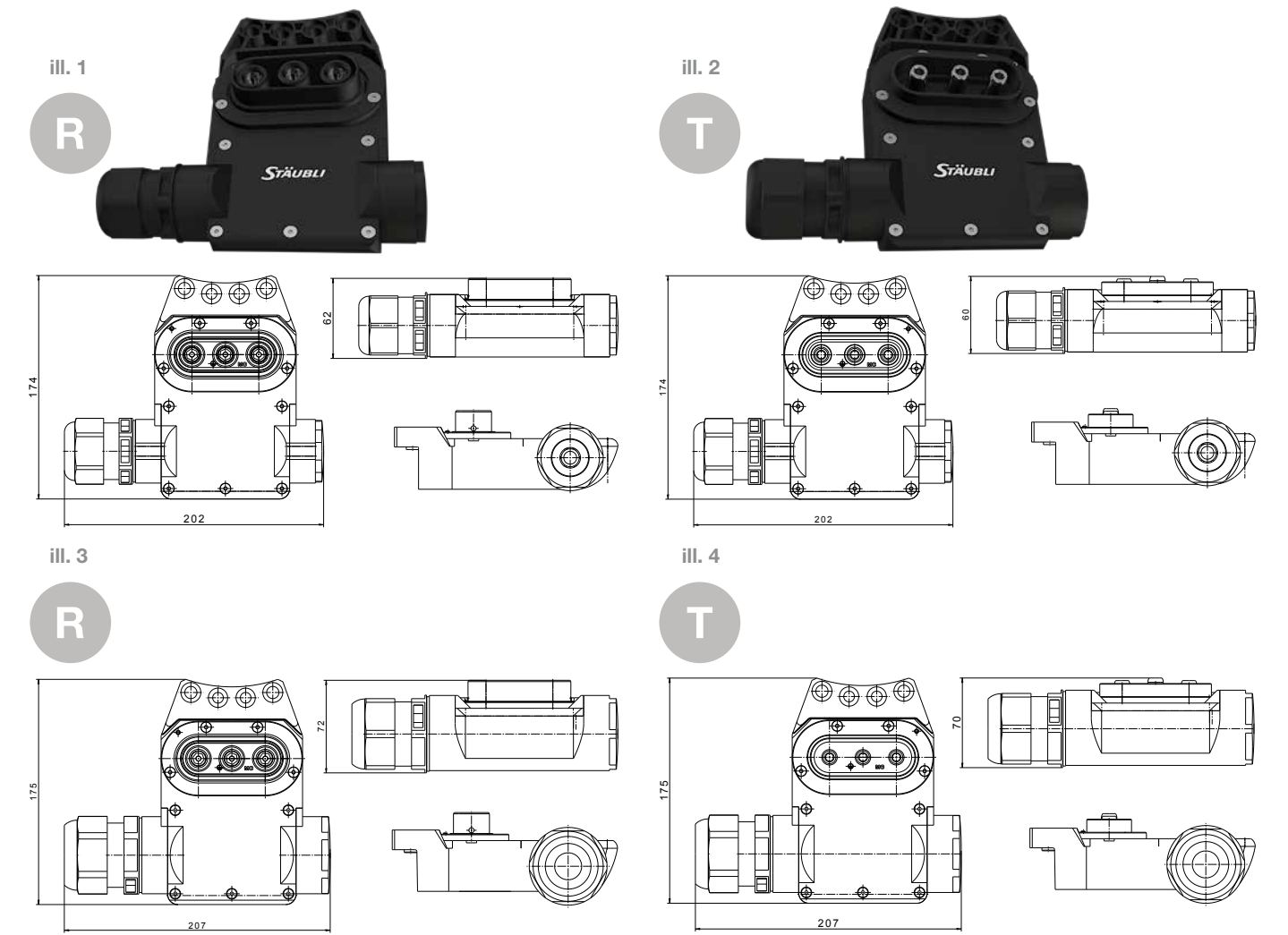


	Order no.	Transfer poles	Voltage / Current	Cable cross-section	Connection (X)	Module order code
R	K81560792	1	55VAC/75A	10 mm ²	crimp barrel	MR
T	K81560793					

Welding power WPC

Technical description

- Floating Contact Technology with MULTILAM®
- suitable for high frequency transfer of up to 10 kHz with HF cables
- protection class: IP 65 (in a coupled state)
- up to 1,000,000 mating cycles



	Order no.	Transfer poles	Voltage / Current	Cable cross-section	Screw	Clamping range	Module order code	ill.
R	K81560853	2+PE	1000VAC 135A/150A	25 mm ² /35 mm ²	M40x 1.5	19-28 mm	WPBA	1
T	K81560854							2
R	K81560855	2+PE	1000VAC 135A/150A/200A	25 mm ² /35 mm ² /50 mm ²	M50x 1.5	21-35 mm	WPBB	3
T	K81560856							4

Module comparison: tool coding

ESSENTIAL

Inductive module

- mechanical/electrical coding
- max. 16 coding options

MORE FROM PAGE 73

ADVANCED

RFID module

- IO-Link bus system for encoding
- unlimited encoding options

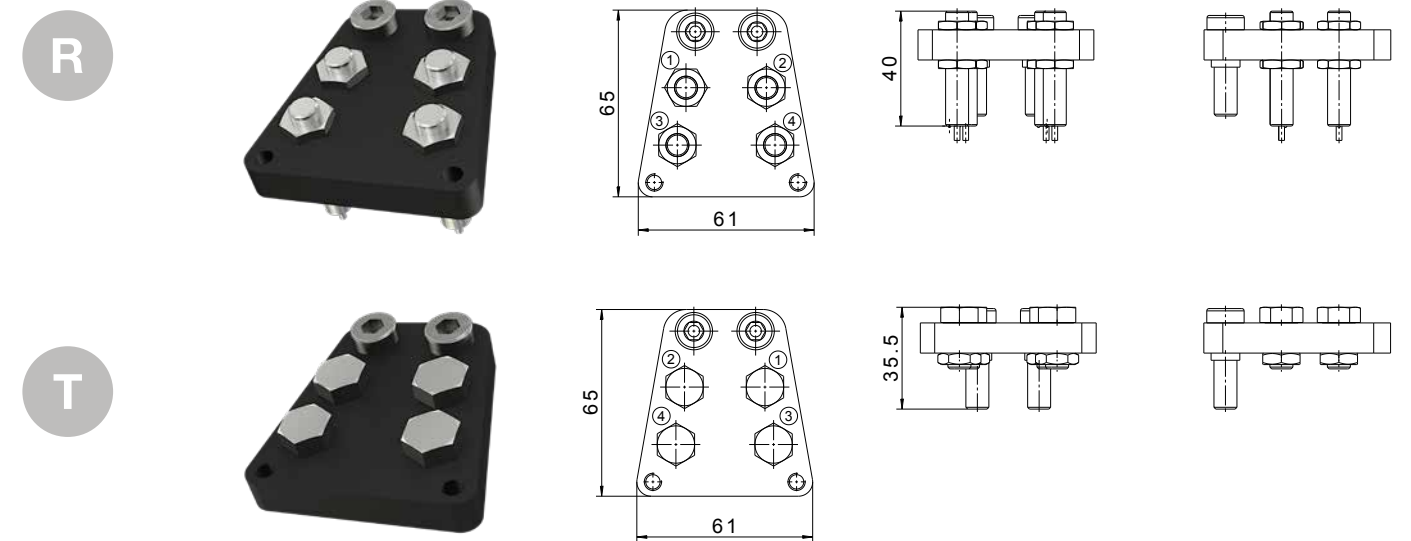
MORE FROM PAGE 74

Tool coding Inductive module

Technical description

- individual coding of tool sides
- four inductive proximity switches on the robot side
- mechanical adjustment of the coding with an adjusting screw on the tool side

ESSENTIAL



	Order no.	Sensors / Connections	Module order code
R	K81560790	PNP/ 4x M12 3-pin - cable length 0.4 m	MS
T	K81560791	Mechanical opposing side	
R	K81565905	NPN/ 4x M12 3-pin - cable length 0.4 m	MT
T	K81560791	Mechanical opposing side	



See page 13 for further differentiation of our ESSENTIAL and ADVANCED modules.

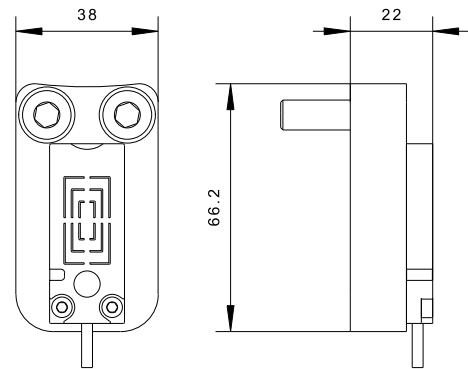
Tool coding and data processing RFID module

ADVANCED

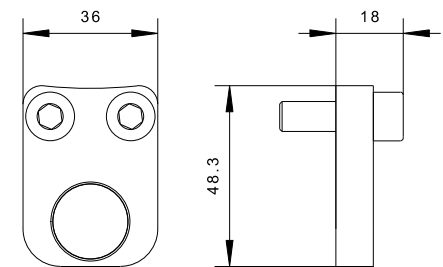
Technical description

- detecting from objects
- IO-Link communication
- unlimited read and write cycles

R



T



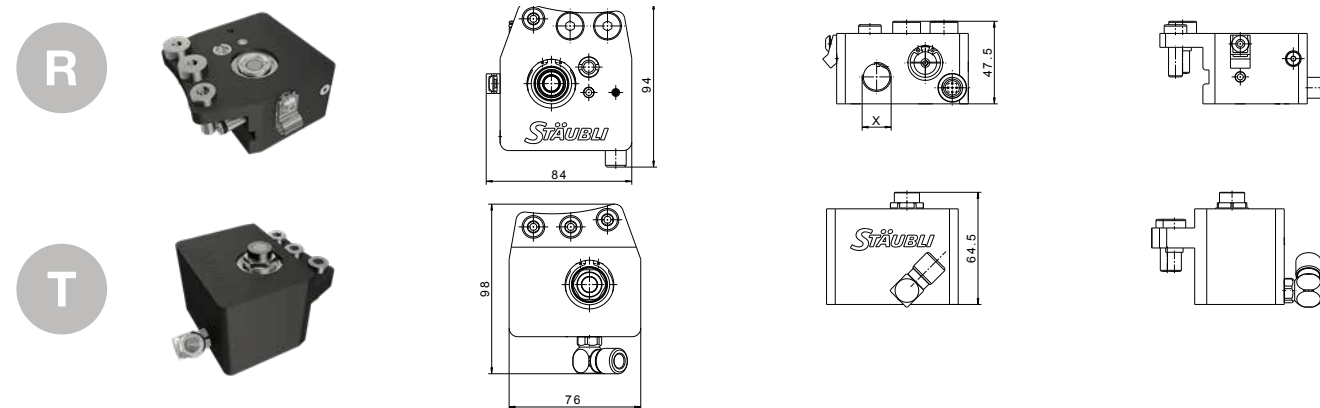
	Order no.	Pole	Connection	Coding	Operating voltage	Protection class	Description	Module order code
R	K81599953	3	M12-pin	A	19.2 ... 28.8 VDC	IP67	RFID read/ write head	RF
T	K81599954	-	-	-	-	IP68	RFID tag	

Safety Active Docking System

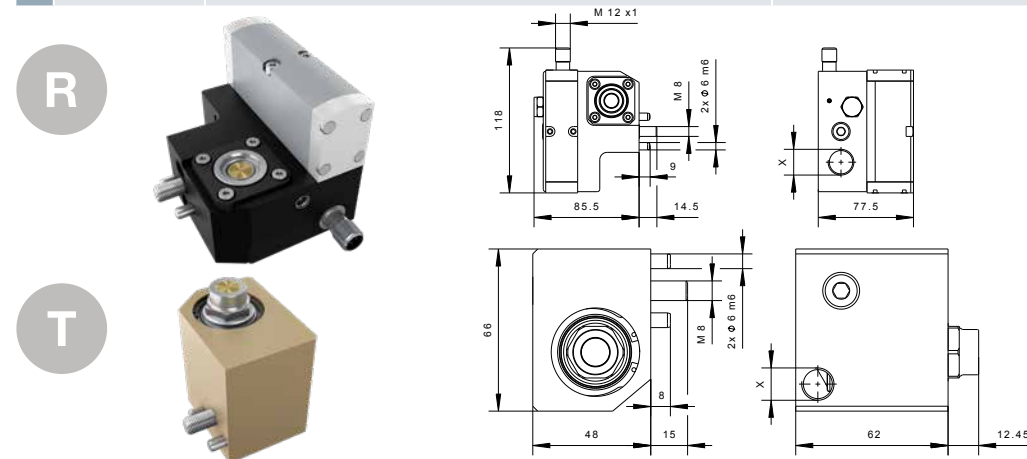
Performance Level d, Category 3

Technical description

- stand-alone system, independent of the bus system
- easy integration, lower system costs
- integrated pressure switch for locking pressure monitoring
- meets the safety requirements of Performance Level d, Category 3



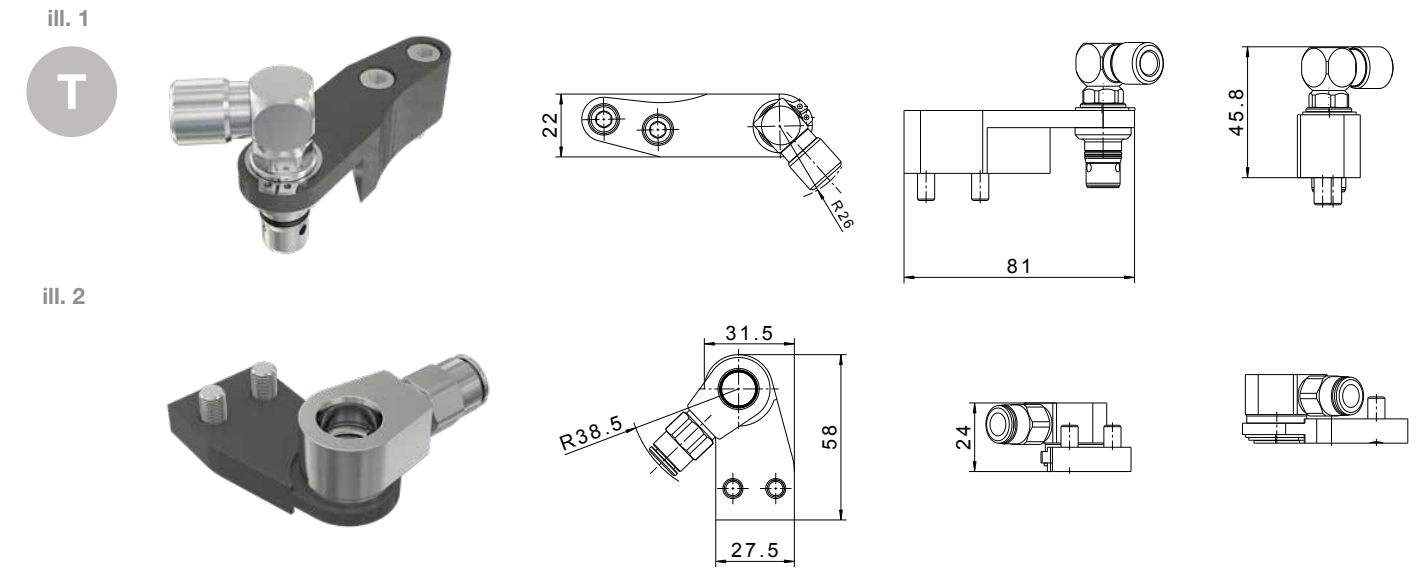
	Order no.	Sensors / Connections	Compressed air connection (X)	Base unit
R	K81565760	Pressure switch 4.5 bar/ NO	PNP/ 1x M12	MPS 631/631S/1531
R	K81565886	Pressure switch 4.5 bar/ NO	NPN/ 1x M12	MPS 631/631S/1531
T	K81565761	none	Push-lock-hose-Ø 8 mm	MPS 631/631S/1531



	Order no.	Sensors / Connections	Compressed air connection (X)	Base unit
R	K81579497	Pressure switch: yes*	PNP/ 1xM12	MPS 2531
R	K81579988	Pressure switch: yes*	NPN/ 1xM12	MPS 2531
T	K81579498	none	G1/4 Inner thread	MPS 2531

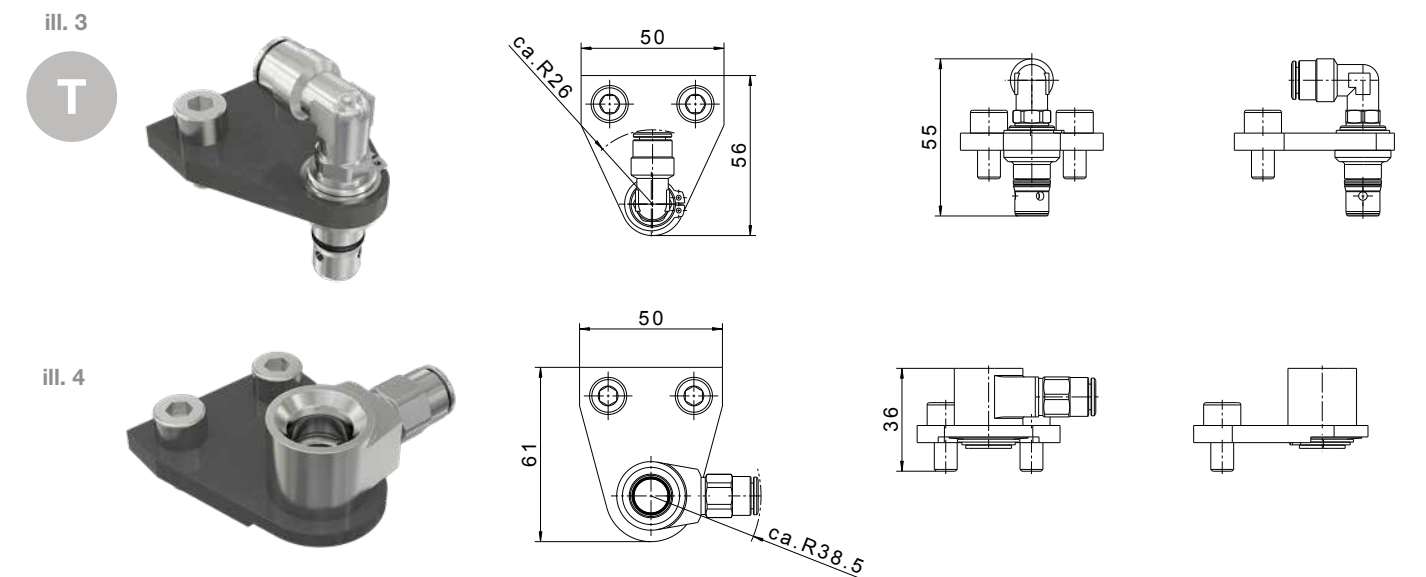
* optionally also possible without pressure switch

Transfer coupling MPS 631/631S tool stand



	Order no.	Accessories	Compressed air connection	ill.
T	K81565793	Transfer coupling for MPS 631	Push-lock-hose-Ø 8 mm	1
	K81565659	Transfer coupling tool stand for MPS 631		2

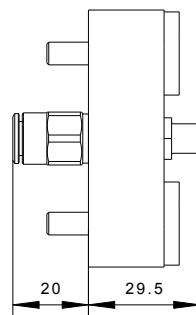
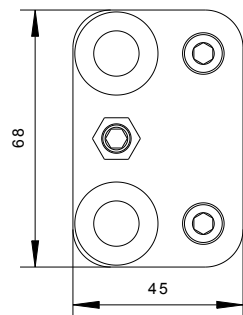
Transfer coupling external tool stand MPS 631/631S/1531



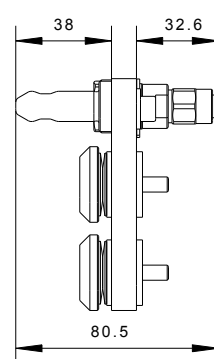
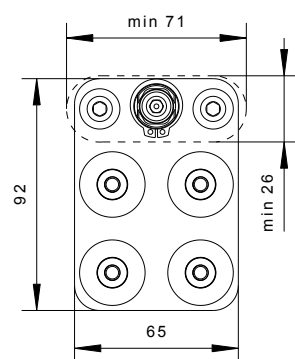
	Order no.	Accessories	Compressed air connection	ill.
T	K81564871	Transfer coupling for installation to end user tool	Push-lock-hose-Ø 8 mm	3
	K81564872	Transfer coupling for installation to external tool stand		4

Transfer coupling external tool stand MPS 2531

ill. 5



ill. 6



	Order no.	Accessories	Compressed air connection	ill.
T	K85625750	Transfer coupling for installation to end user tool	Push-lock-hose-Ø 8 mm	5
	K85625725	Transfer coupling for installation to external tool stand		6

Customized modules for special requirements

Signal and servo power transmission, light wave transmission, material feed-through and hydraulics for high-pressure applications: Stäubli offers individually designed customized modules for these specialist and application-specific requirements.

Transfer module MTM for material feed-through

Technical description

- possible transmission materials: screws, threaded bolts and rivets
- individual designs corresponding to the manufacturer-specific transfer inserts



Transfer module HVA 09 for hydraulic

Technical description

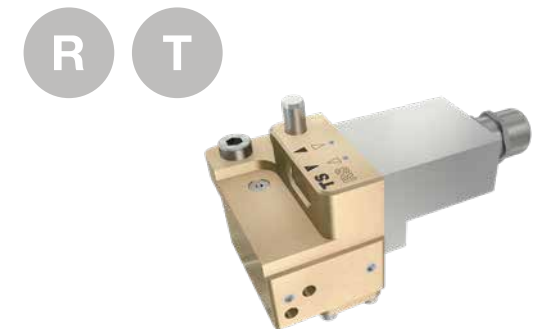
- coupling modules in clean-break design
- no contamination of the workplace, no ingress of air into the media circuit
- quick-change system for simple and fast replacement of the couplings during a service
- force decoupling of the hoses
- low height
- large volume flow rates, low flow resistance
- max. pressure 25 MPa, max. flow rate 114.5 l/min



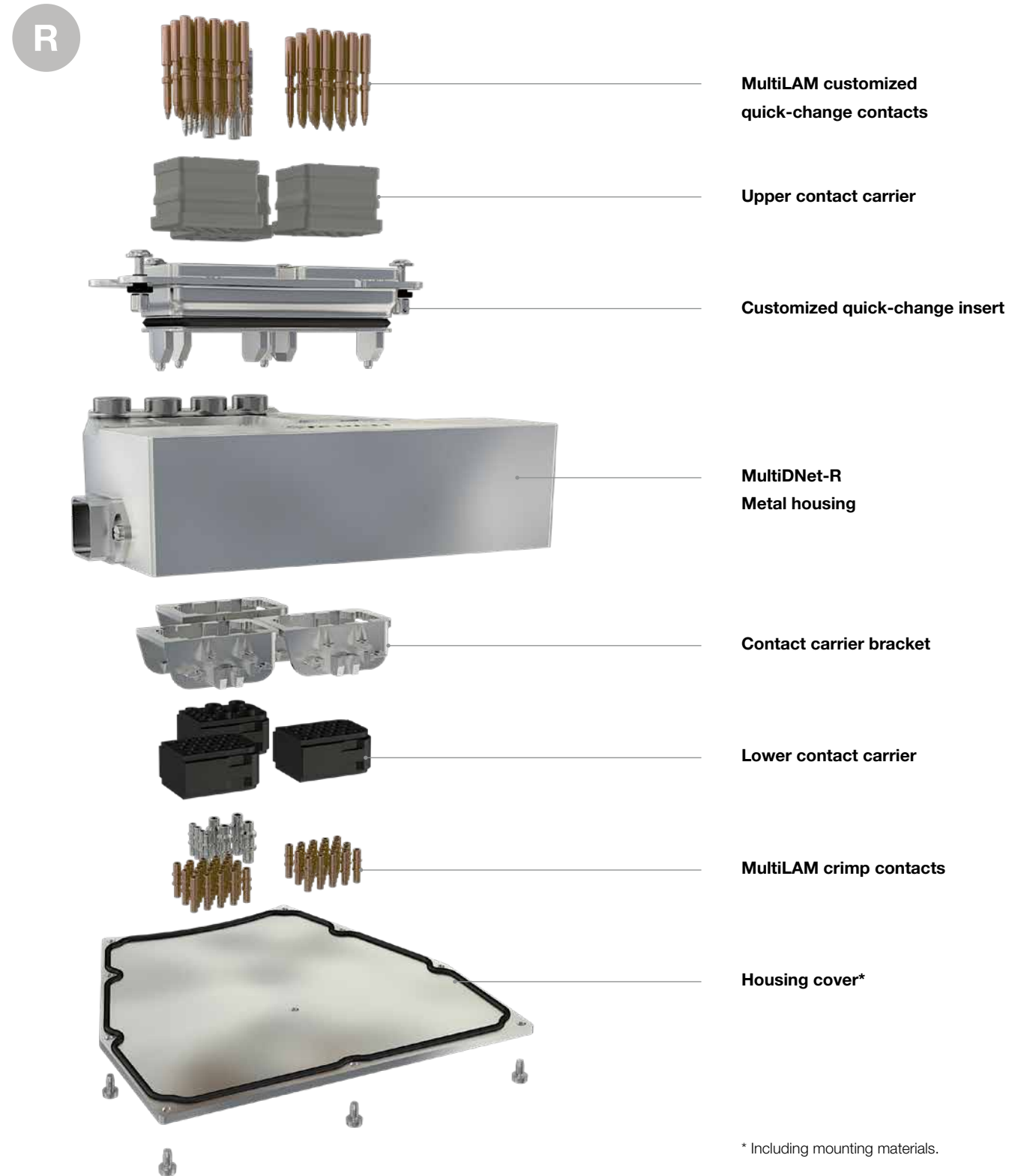
Transfer module LWL for optical signals

Technical description

- signal transmission using lens technology
- unaffected by misalignment and axial deviation
- automatic lens cover
- wires protected by the robust coupling housing
- identical parts for both base units
- extremely low attenuation factor
- cable type: duplex 1000 µm, polymer fiber cable 980/1000



Simple contact replacement customized quick-change



* Including mounting materials.



A special product variant can be provided with welding current, data and signal transmission modules that are fitted with quick-change heads. The main advantage of this is quick and easy maintenance.

Modules with quick-change heads are ideal for process applications with many change cycles. If the contacts in the electrical plug connector bushes malfunction, it is not necessary to replace the entire module. The intelligent cartridge system makes it possible to replace just the docking contacts.

Convenient maintenance: Modules no longer have to be removed or cable connections disconnected for contact replacement. This shorter and easier maintenance procedure saves time and money, and reduces production downtime.



Our modules are supplied with direct wiring as standard.

Accessories

Robot side mounting kit



	Order no.	Pitch circle diameter (PCD)	Mounting materials	Strength class*	Locating pin	Base unit
R	K81560744	Ø 160 mm	(11x) M10x50	12.9	(1x) 10/20	MPS 631/631S
R	K81560745	Ø 160 mm	(11x) M12x45	12.9	(1x) 12/24	MPS 631/631S
R	K81560746	Ø 200 mm	(11x) M12x50	12.9	(1x) 12/20	MPS 631/631S
R	K81599967	Ø 200 mm	(12x) M12x55	12.9	(1x) 12/20	MPS 631/631S
R	K81599968	Ø 200 mm	(11x) M16x55	12.9	(1x) 12/20	MPS 631/631S
R	K81560747	Ø 200 mm	(12x) M16x55	12.9	(1x) 12/24	MPS 631/631S
R	K81560997	Ø 200 mm	(12x) M12x70	12.9	(1x) 12/20	MPS 1531
R	K81574348	Ø 200 mm	(12x) M16x70	12.9	(1x) 12/20	MPS 1531
R	K81574233	Ø 315 mm	(16x) M16x70	12.9	(2x) 12/32	MPS 2531

* The specifications of the robot manufacturers must be observed. If the specifications are different, use the corresponding strength classes.

Emergency release



Order no.	Description	Base unit
K81558229	Tool for emergency release	MPS 631/631S
K81558346	Tool for emergency release	MPS 1531
K81558756	Tool for emergency release	MPS 2531

Teaching aid

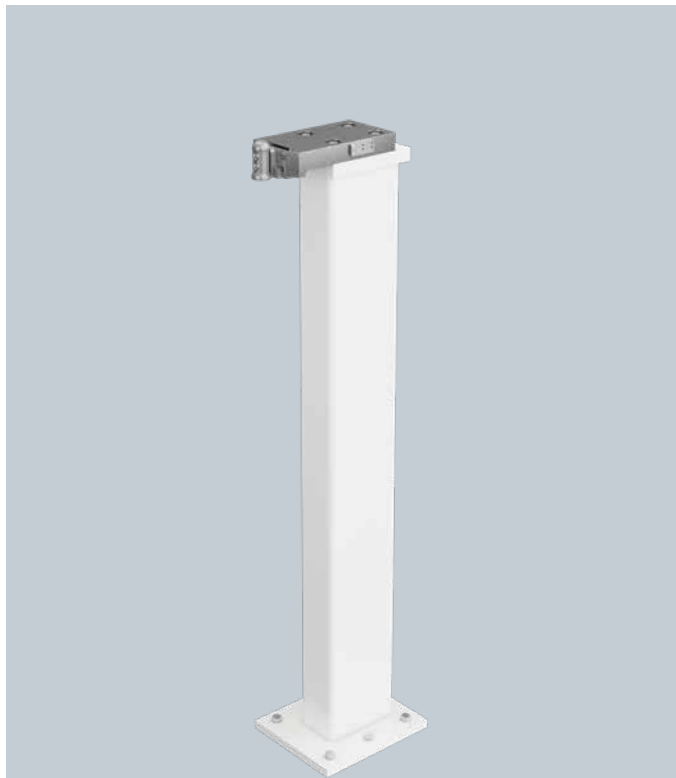


Order no.	Description	Base unit
K81557693		MPS 631/631S
K81559829	Storage case including teaching aid for the robotic tool changing system	MPS 1531
K81559830		MPS 2531

MPS 631/631S Single tool stand – system comparison

ESSENTIAL

Single tool stand



- meets the minimum requirements for a tool stand system
- modular design, upgradeable to the ADVANCED version
- supplied as standard with a status-monitoring sensor
- available with or without the Active Docking Module

MORE FROM PAGE 87

ADVANCED

Single tool stand with accessories



- increased functional protection thanks to a protective cover
- bus module connection and Active Docking included as standard
- height-adjustable support roller for the tool
- customized paint finishes and colors available on request

MORE FROM PAGE 90

MPS 631/631S Single tool stand

Technical description

- **Flexibility:** with the individual system components, you can configure your own customized tool stand solutions.
- **Optimally matched:** the complete systems are already perfectly dimensioned and calculated for the respective tool weights.
- **Performance Level d, Category 3:** the optional Active Docking System with its self-contained compressed-air circuit ensures that tool locking and unlocking can only take place at the tool stand.
- **Longevity:** the floating bearing of the docking pin keeps the tool securely in the vertical storage position and minimizes the load on the components.



Contact us for individual solutions or custom designs.

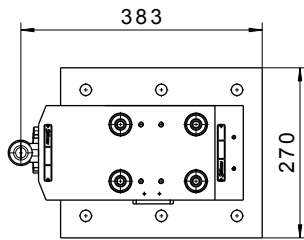
Tool stand base	Positioning plate	Tool stand upper part	Protective cover	Sensors / Connections	Tool support	Electrical distribution box	Order no.	ill.
H = 1400 mm	without	without Active Docking	without	1x PNP/ 1x M12	without	without	MPS631DA-0000-UP09-0000-0000-0000-0000	1
				1x NPN/ 1x M12			MPS631DA-0000-UP11-0000-0000-0000-0000	
H = 1400 mm	with	with Active Docking	without	1x PNP/ 1x M12	without	with	MPS631DA-OP02-UP10-0000-0000-0000-DB01	2
				1x NPN/ 1x M12			MPS631DA-OP02-UP12-0000-0000-0000-DB01	

Technical data for all individual components can be found from page page 88 onwards.

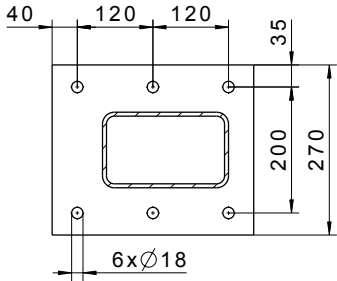
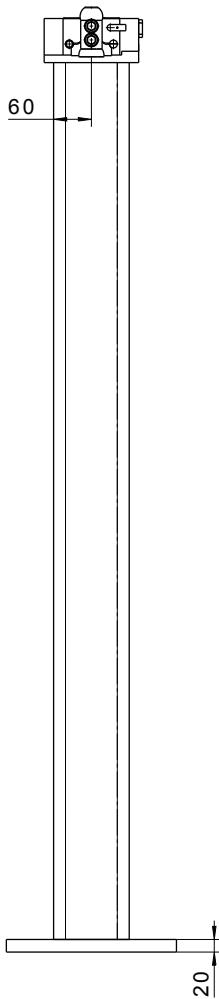
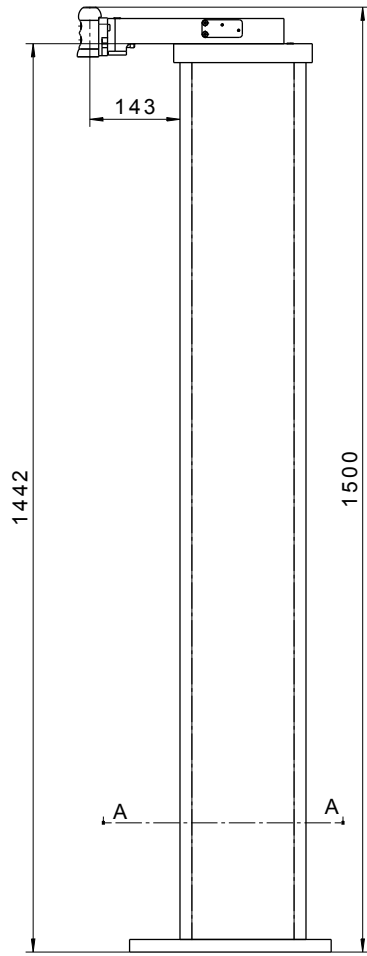
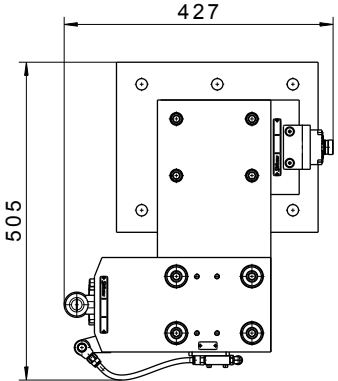


See page 13 for further differentiation of our ESSENTIAL and ADVANCED modules.

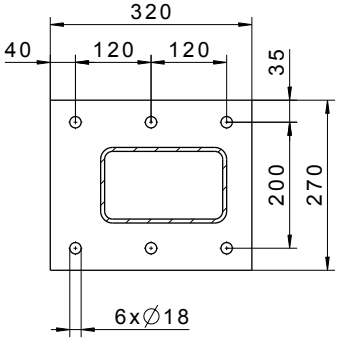
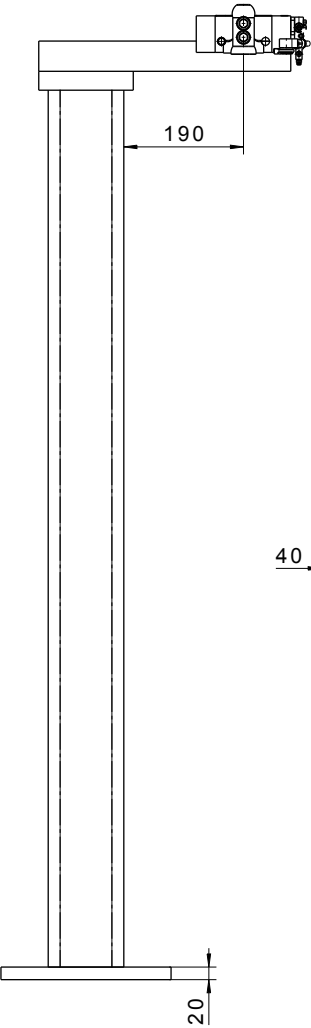
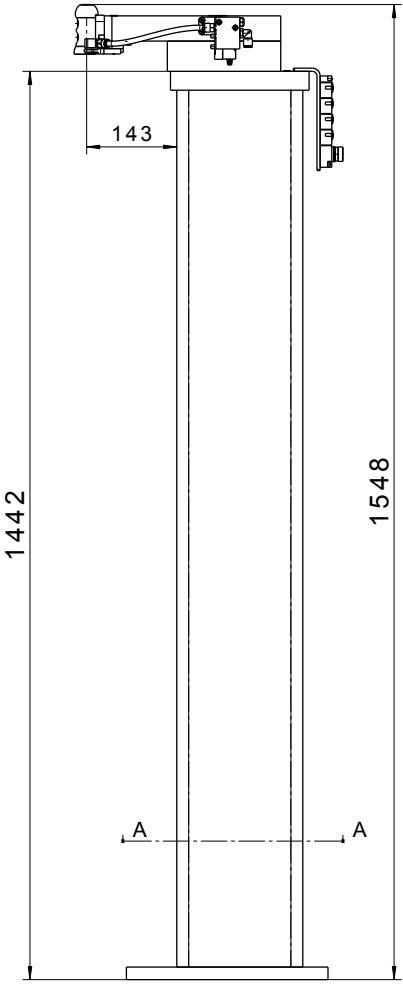
ill. 1



ill. 2



view A-A

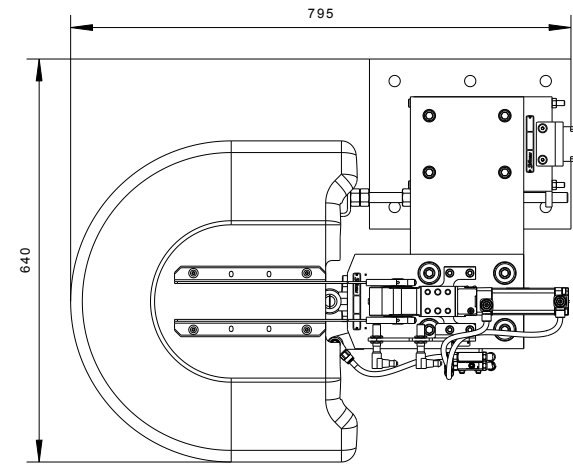


view A-A

MPS 631/631S Single tool stand with accessories

Technical description

- **Optimally matched:** the complete systems are already perfectly dimensioned and calculated for the respective tool weights.
- **Performance Level d, Category 3:** the optional Active Docking System with its self-contained compressed-air circuit ensures that tool locking and unlocking can only take place at the tool stand.
- **Longevity:** the floating bearing of the docking pin keeps the tool securely in the vertical storage position and minimizes the load on the components.
- **Functional protection:** A protective cover prevents particles from entering the couplings and plug connections of the transfer modules.
- **Height-adjustable support roller** for the tool
- **Customized paint finishes** and colors available on request



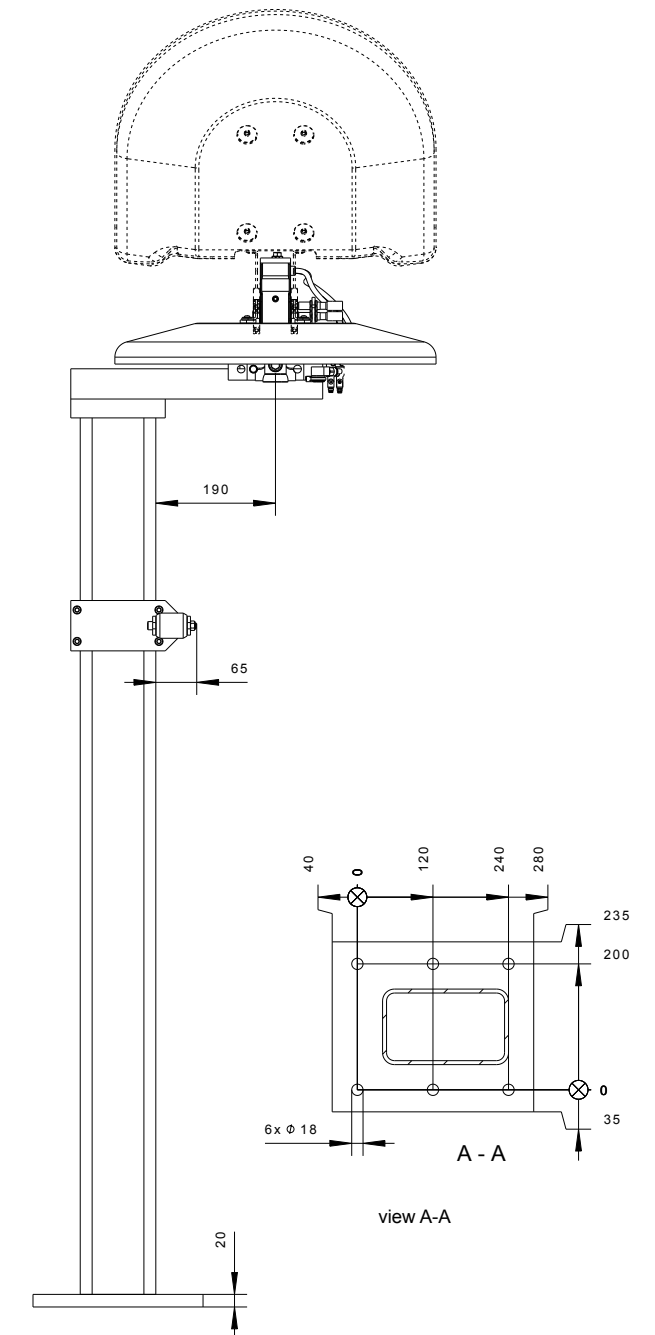
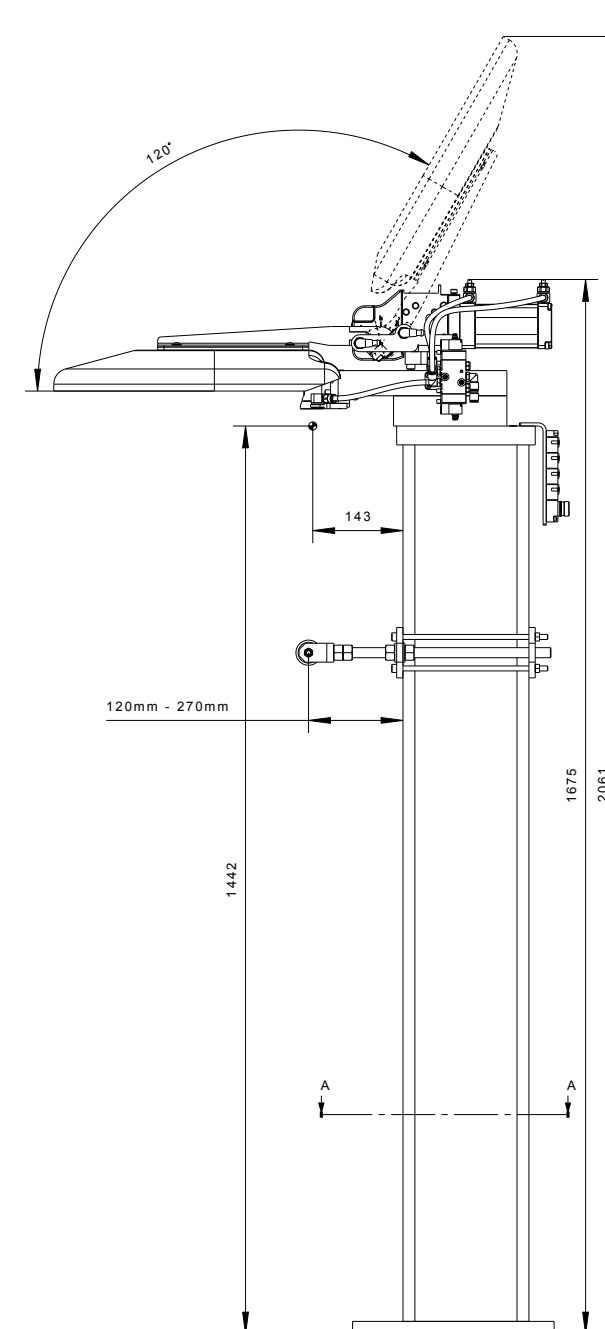
ill. 1

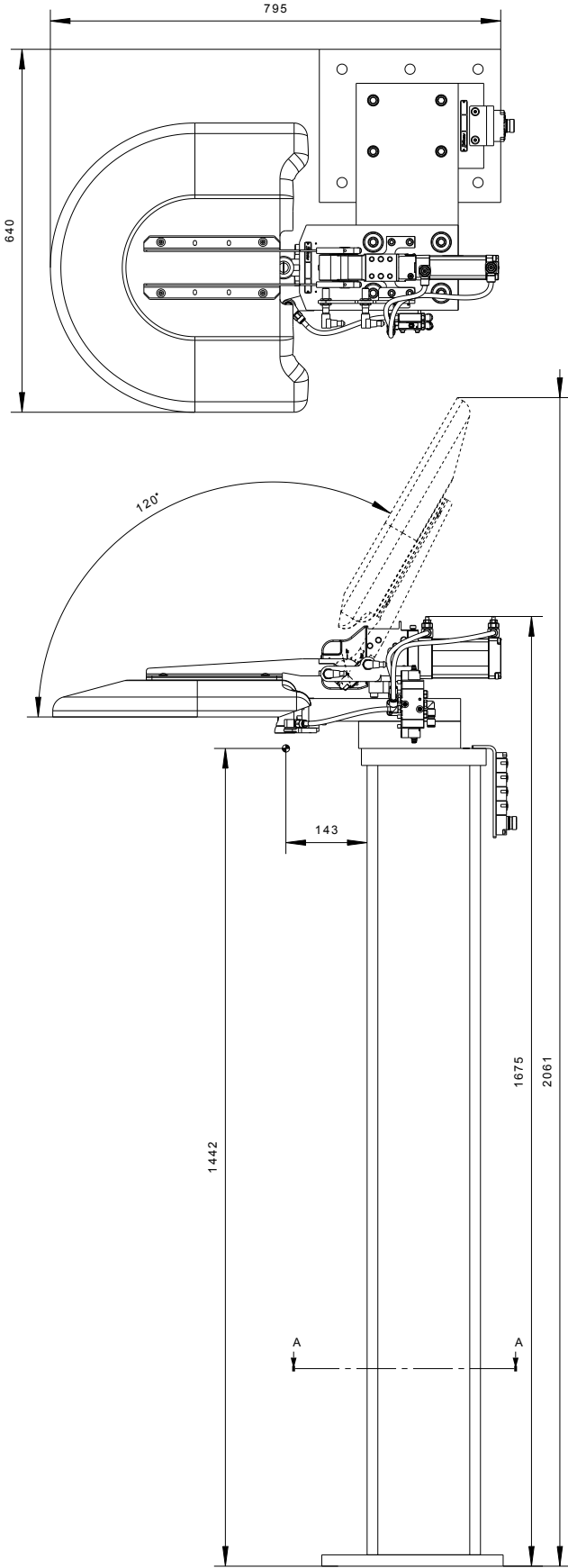


Contact us for individual solutions or custom designs.

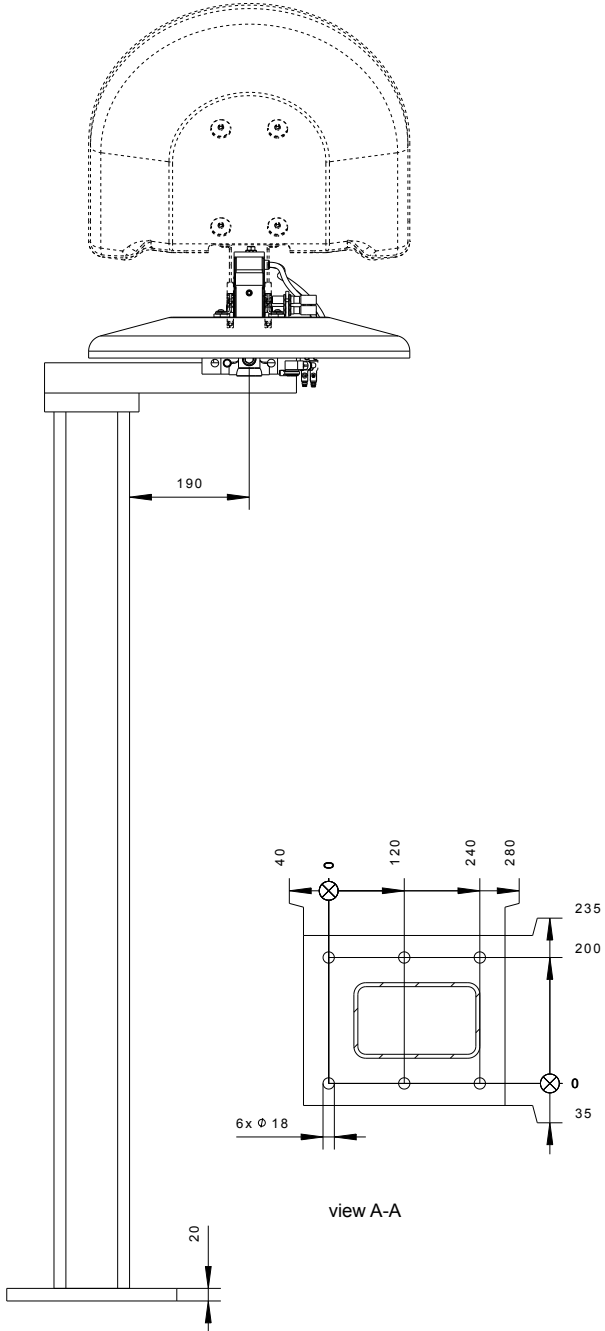
Tool stand base	Positioning plate	Tool stand upper part	Protective cover	Sensors / Connections	Tool support	Electrical distribution box	Order no.	ill.
H = 1400 mm	with	without Active Docking	with	3x PNP/ 3x M12	without	without	MPS631DA-OP02-UP09-PC05-0000-0000-0000	1
				3x NPN/ 3x M12			MPS631DA-OP02-UP11-PC07-0000-0000-0000	
H = 1400 mm	with	with Active Docking	with	3x PNP/ 3x M12	with	with	MPS631DA-OP02-UP10-PC06-0000-TS01-DB01	2
				3x NPN/ 3x M12			MPS631DA-OP02-UP12-PC08-0000-TS01-DB01	

Technical data for all individual components can be found from pagepage 91 onwards.



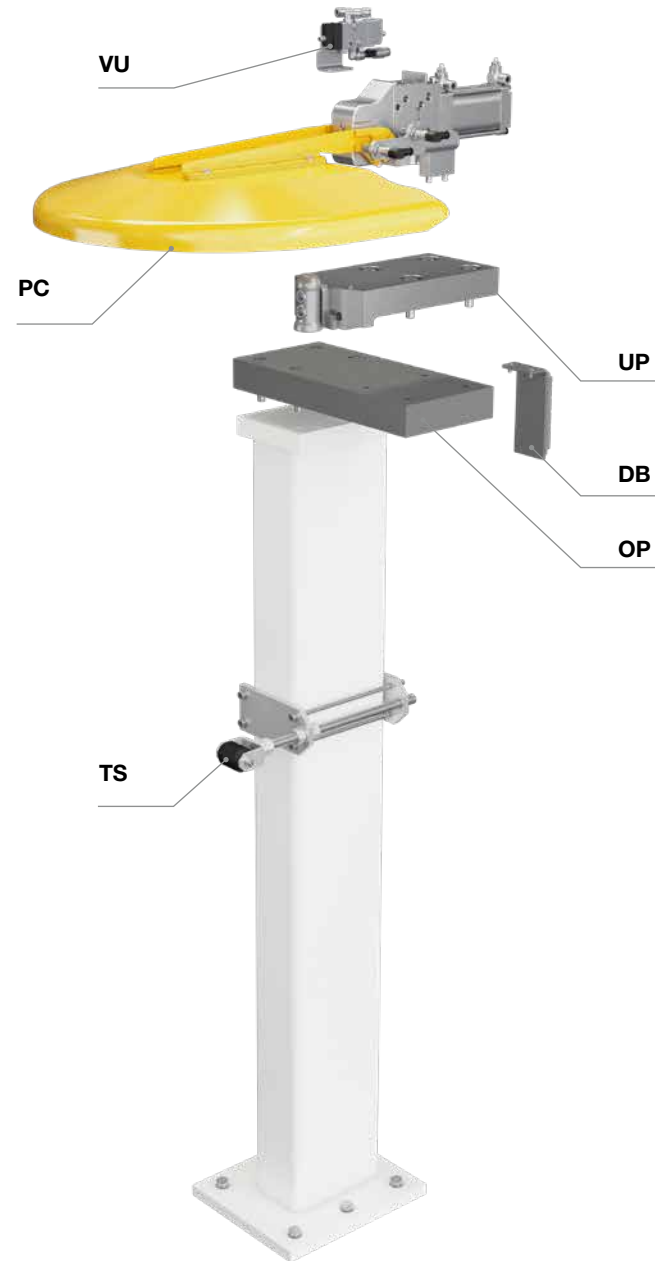


ill. 2



MPS 631/631S tool stand Configuration guide

Take advantage of Staubli's modular product concept for maximum design freedom. Configure your perfect tool stand in just a few steps.



Select your **tool stand** and make a note of the module code.

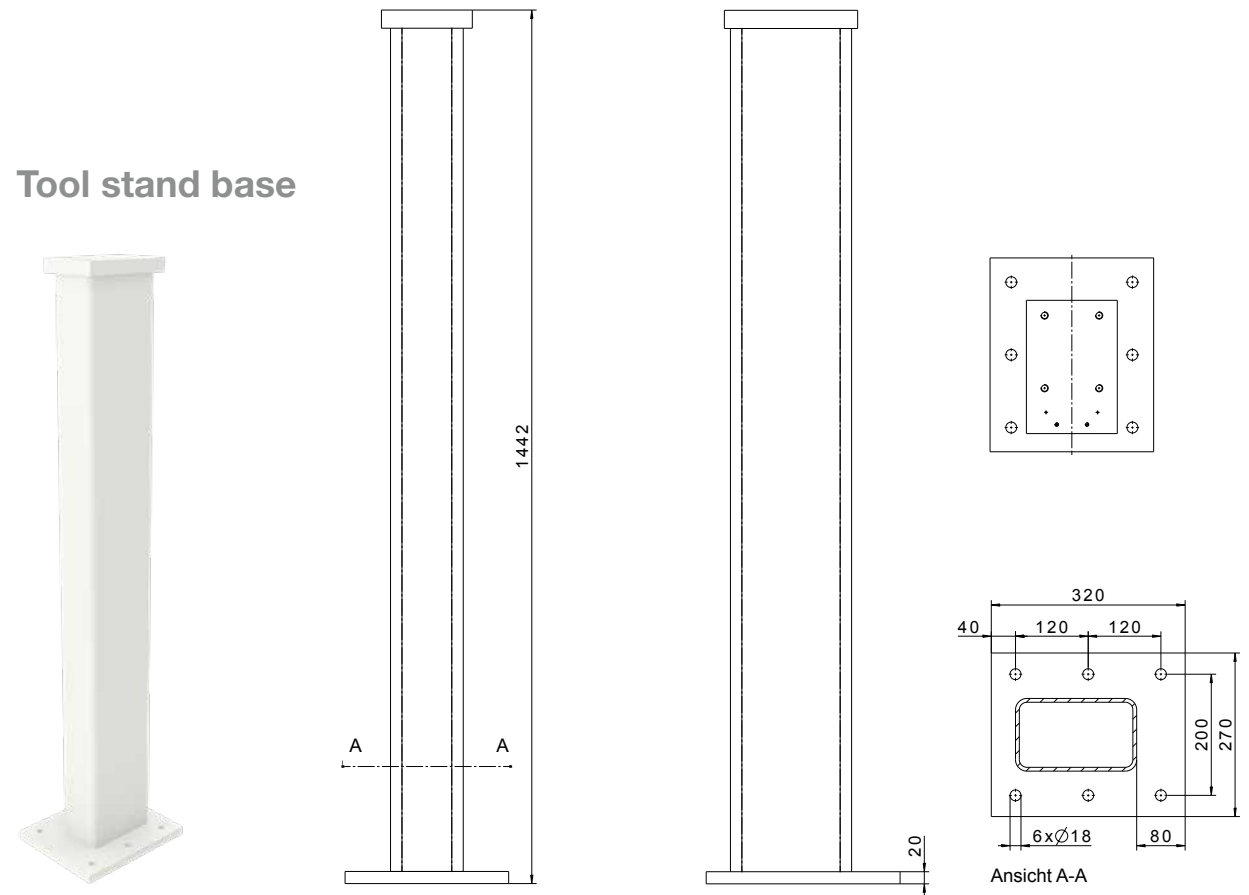
Select your **module order code** (from page 95 onwards).

- OP** - Positioning plate
- UP** - Tool stand upper part
- VU** - Valve unit
- PC** - Protective cover
- TS** - Tool support
- DB** - Electrical junction box

Options that are not required are replaced in the code with 0000.

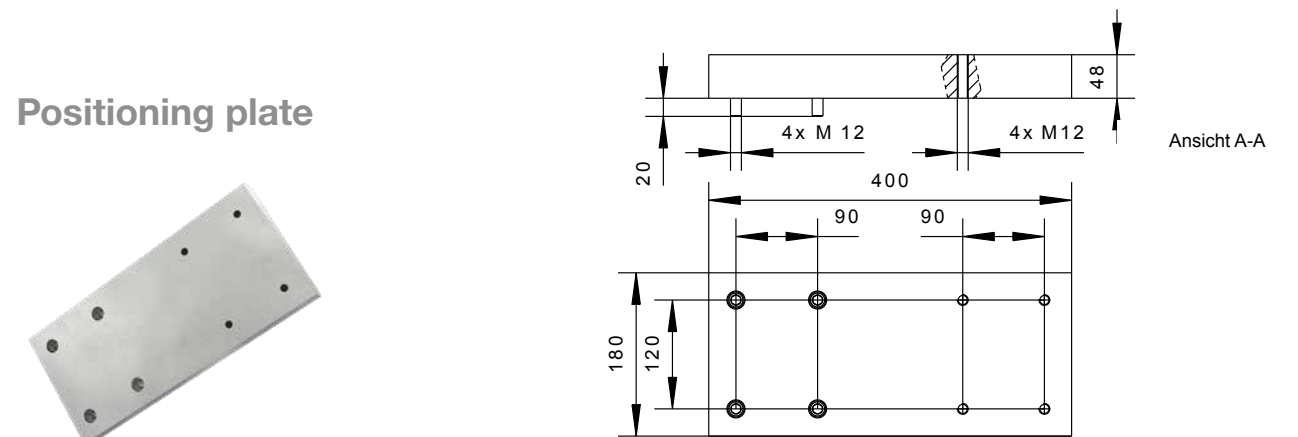
M P S 6 3 1 D A - O P 0 2 - U P 0 9 - P C 0 5 - V U 0 1 - T S 0 1 - D B 0 1

Tool stand base



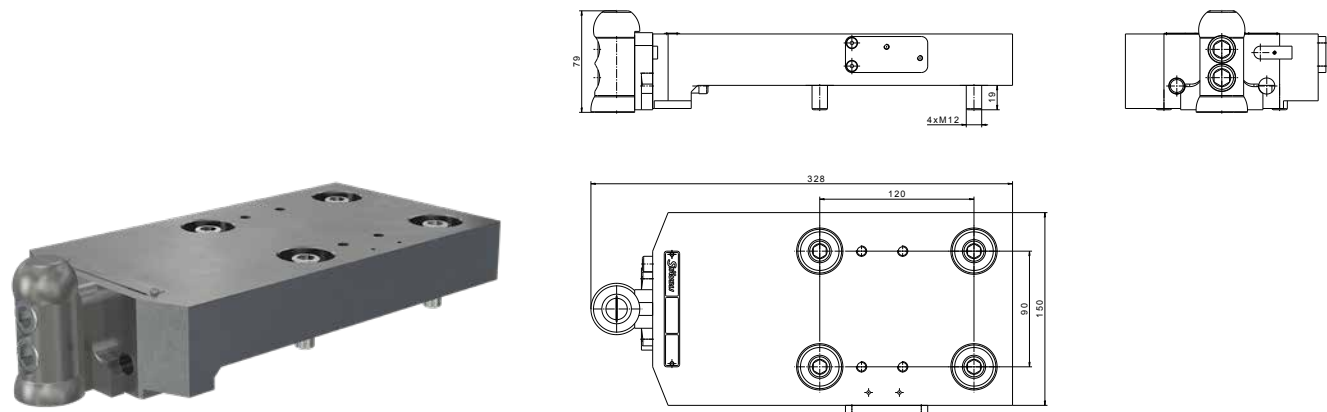
Order no.	Description	Module order code
K81904355	Tool stand base H = 1400 mm, RAL 9003	MPS631DA

Positioning plate



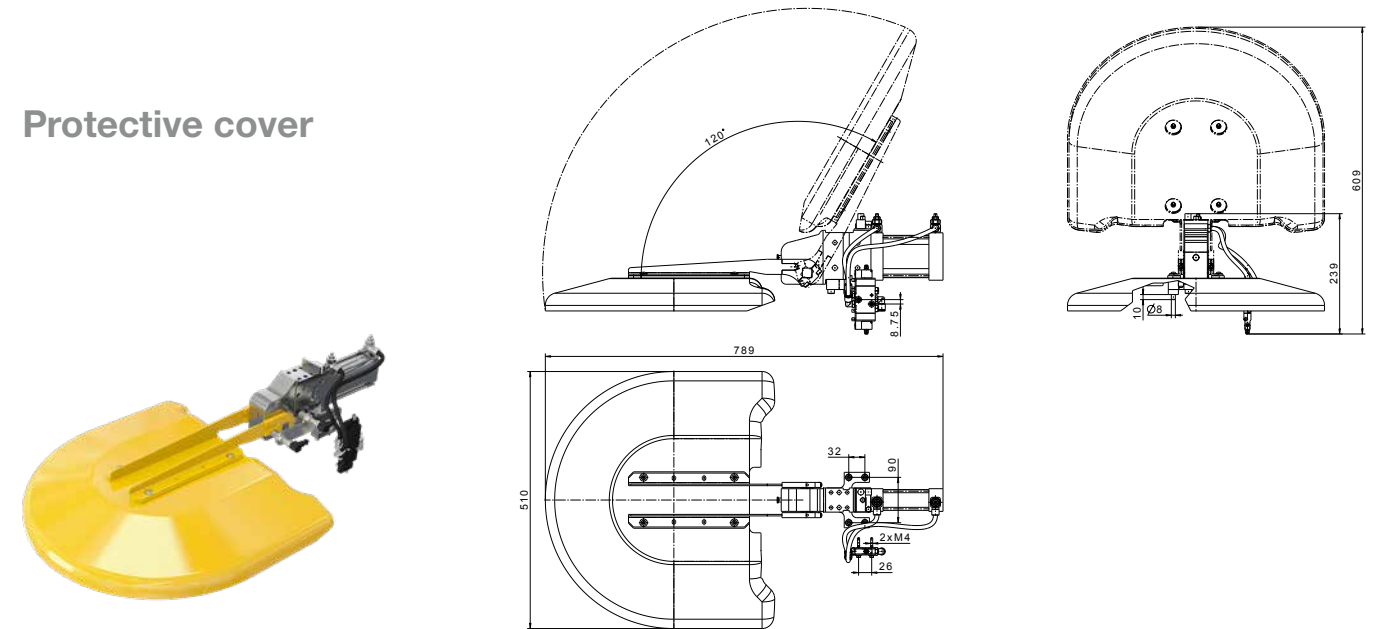
Order no.	Description	Module order code
K81558252	Positioning plate for expanding the storage options, includes mounting materials	OP02

Tool stand upper part



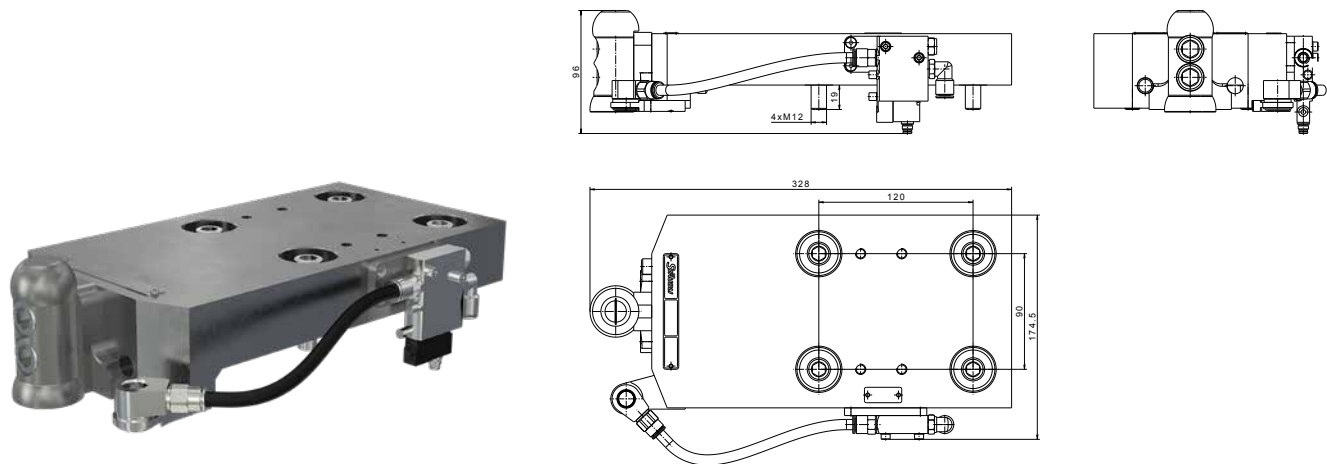
Order no.	Description	Sensors / Connections	Module order code
K86501448	Tool stand upper part, including mounting material	1x PNP/ 1x M12	UP09
K86501616		1x NPN/ 1x M12	UP11

Protective cover

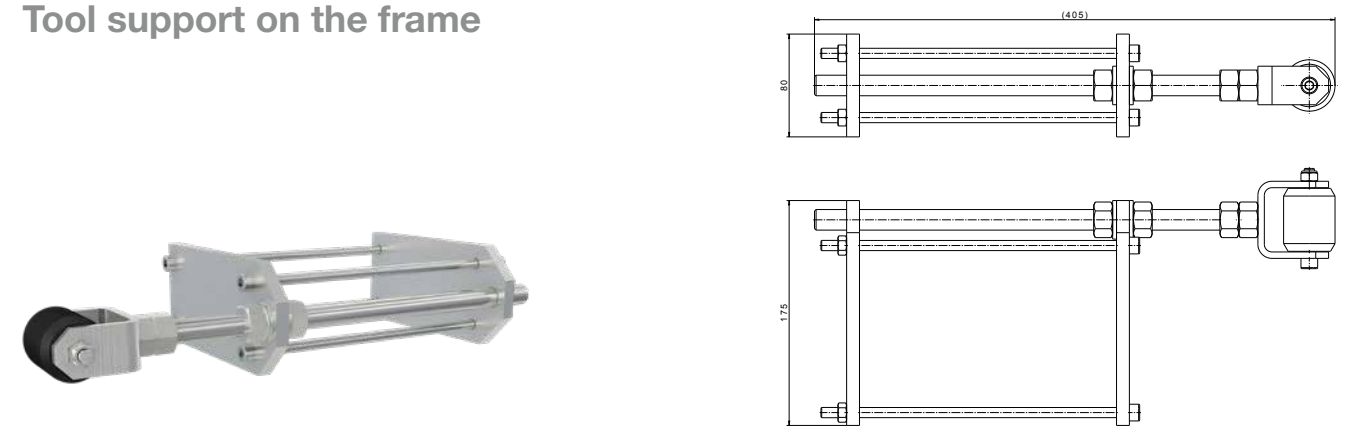


Order no.	Description	Compressed air connection	Sensors / Connections	Valve / Connections	Module order code
K81562427	Protective cover for harsh working environments; RAL 1003, including mounting materials	2x Push-lock-hose-Ø 8 mm	PNP/M12	-	PC05
K81562443			NPN/M12	-	PC07
K81562447	Protective cover for harsh working environments; RAL 1003, including mounting materials and 5/2-way valve for actuation	2x Push-lock-hose-Ø 8 mm	PNP/M12	2x M8 4-pin	PC06
K81562448			NPN/M12	2x M8 4-pin	PC08

Tool support on the frame

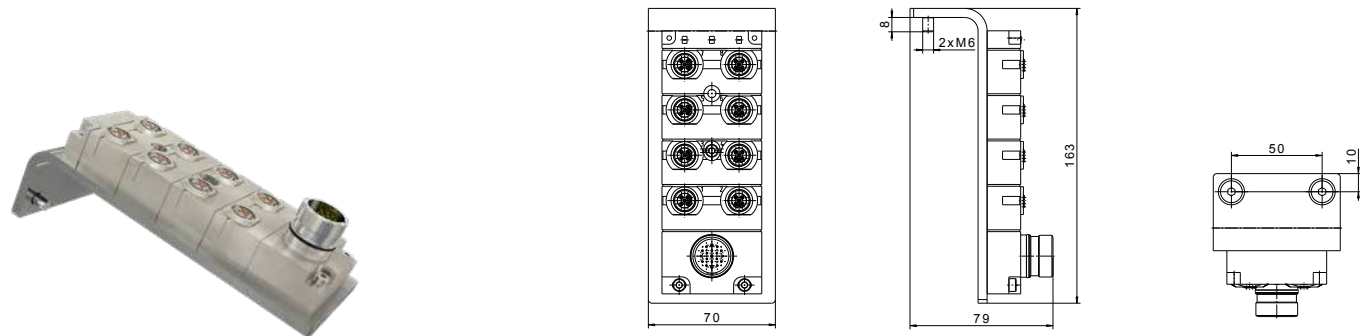


Order no.	Description	Compressed air connection	Sensors / Connections	Valve / Connections	Module order code
K86501661	Tool stand upper part with Active Docking, including mounting materials and 3/2-way valve for actuation	1x Push-lock-hose-Ø 8 mm	1x PNP/ 1x M12	1x M8 4-pin	UP10
K86501662			1x NPN/ 1x M12	1x M8 4-pin	UP12



Order no.	Description	Adjusting range	Module order code
K8555053	Adjustable support roller for supporting larger tools with clamping function on stand frame for height variation and thread and counter function for depth variation	120-270 mm	TS01

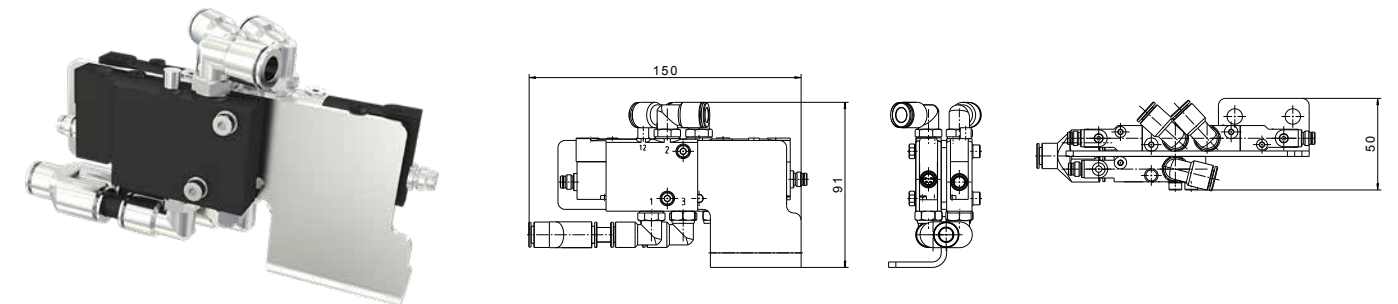
Electrical junction box



Order no.	Description	Input	Output	Module order code
K81565840	The electrical signals are bundled for integration in control and bus systems with LEDs for digital PNP signals 24V DC. Includes mounting plate for attachment to the tool stand.	8x M12 5-pin	Plug connection M23, 19-pol.	DB01

The wiring diagram can be found on page 108.

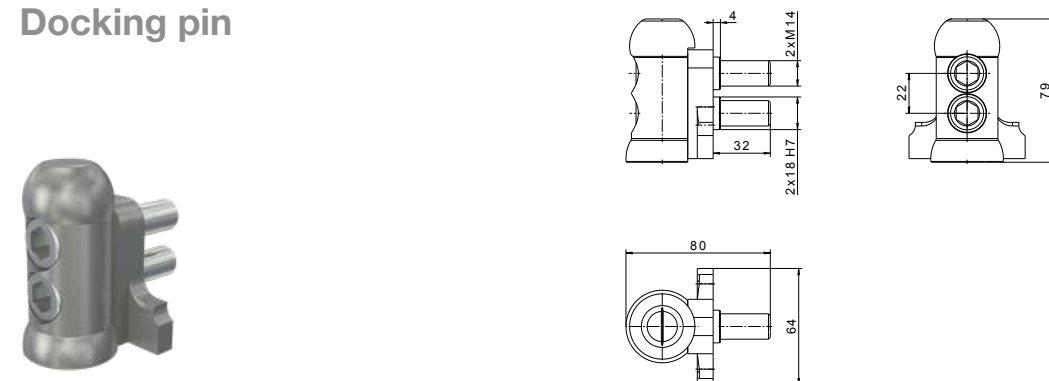
Valve unit



Order no.	Description	Electrical connection	Compressed air connection	Module order code
K81565672	Control unit for protective cover and safety module 5/2 valve for protective cover, 3/2 valve for safety module, mounting plate for attachment to the tool stand	3x M8 4-pin	4x Push-lock-hose-Ø 8 mm	VU01

The pneumatic diagram can be found on page 116.

Docking pin



Order no.	Description
K81565792	Docking pin for self-assembly, including mounting materials

MPS 631/631S Double tool stand – system comparison

ESSENTIAL

Double tool stand



- made from standard components of the basic tool stand
- for low tool weights
- no protective covers possible

MORE FROM PAGE 101

ADVANCED

Double tool stand with accessories



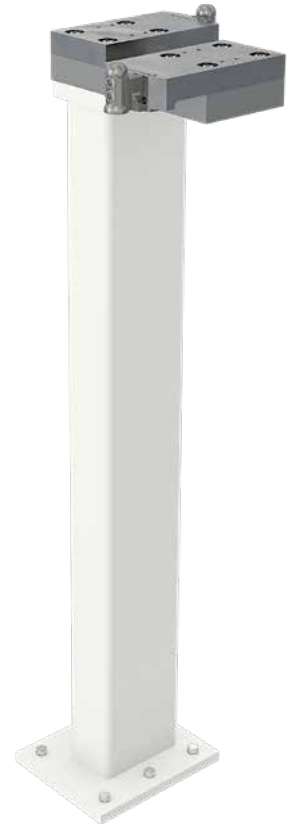
- solid steel tool stand design for maximum torsional rigidity
- designed for heavy tools and asymmetrical tool centers
- protective covers, bus module connection and Active Docking included as standard

MORE FROM PAGE 104

MPS 631/631S Double tool stand

Technical description

- the modular system components enable configuration of a double tool stand for two tools
- space-saving design
- individual additional components such as sensors and bus modules are available on request
- no protective covers available
- for low tool weights



Contact us for individual solutions or custom designs.

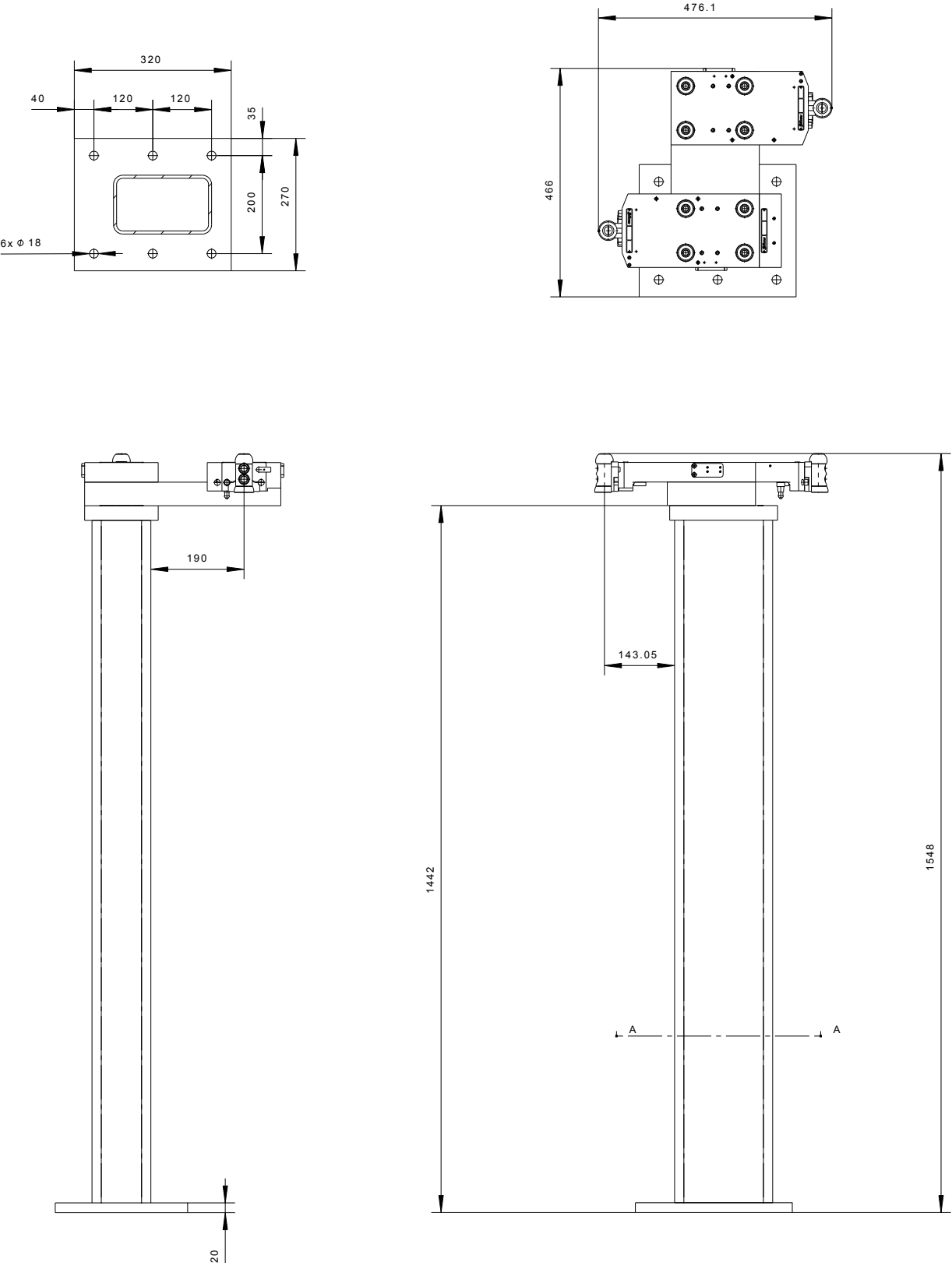
Tool stand base	Positioning plate	Tool stand upper part	Protective cover	Sensors / Connections	Tool support	Electrical junction box	Order no.	ill.
H = 1400 mm	with	without Active Docking	without	1x PNP/ 1x M12	without	without	K86502213	1

Technical data for all individual components can be found on pagepage 102.



See page 13 for further differentiation of our ESSENTIAL and ADVANCED modules.

iii. 1



MPS 631/631S Double tool stand with accessories

Technical description

- the modular system components enable configuration of a double tool stand for 2 tools
- space-saving design
- individual additional components such as sensors and bus modules are available on request
- for heavy tools and asymmetrical tool centers
- protective covers, bus module connection and Active Docking included as standard

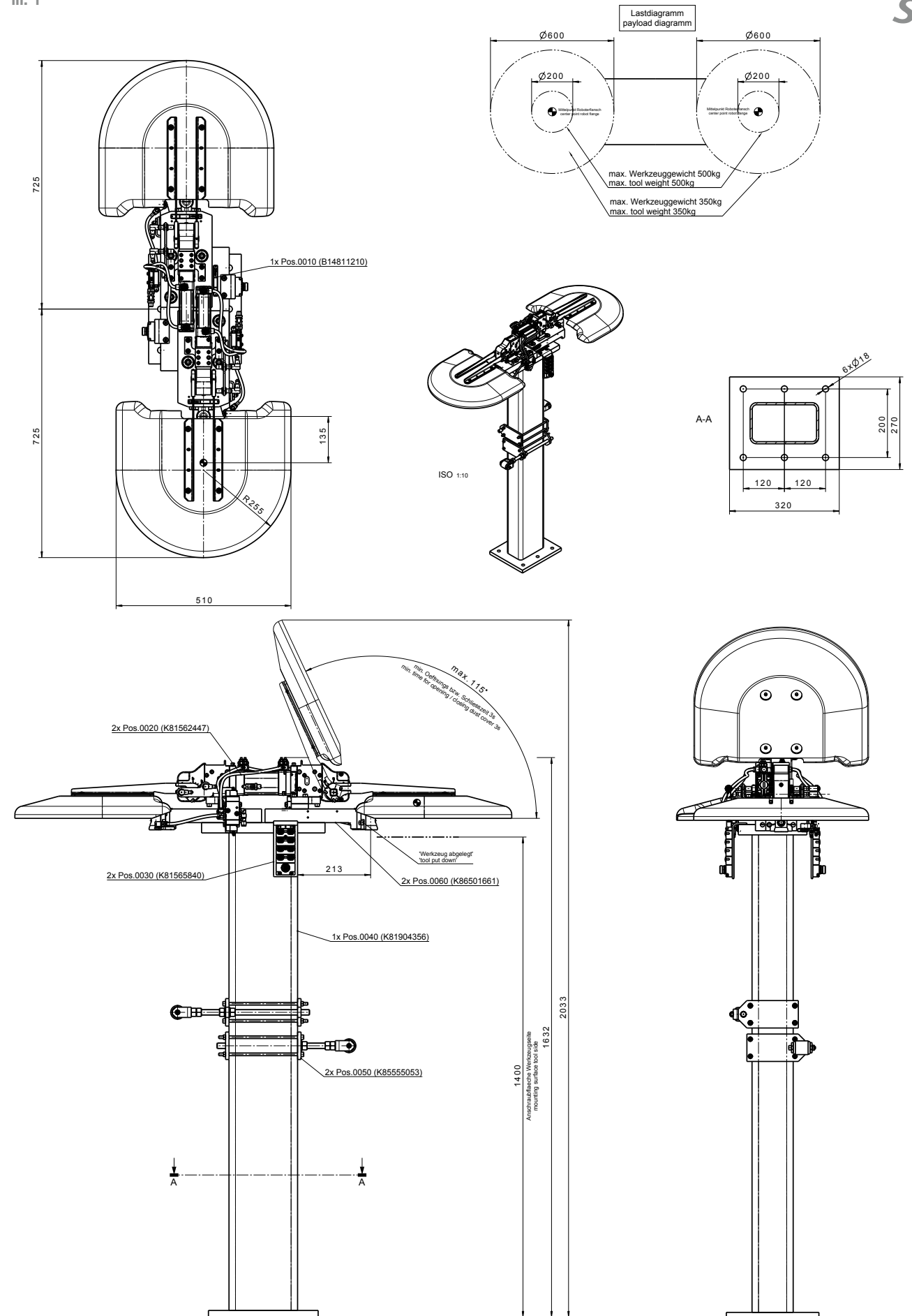


Contact us for individual solutions or custom designs.

Tool stand base	Positioning plate	Tool stand upper part	Protective cover	Sensors / Connections	Tool support	Electrical junction box	Order no.	ill.
H = 1400 mm	without	2x Active Docking	2x with	6x PNP/ 6x M12	2x with	2x with	K86502089	1

Technical data for all individual components can be found on page 105.

ill. 1



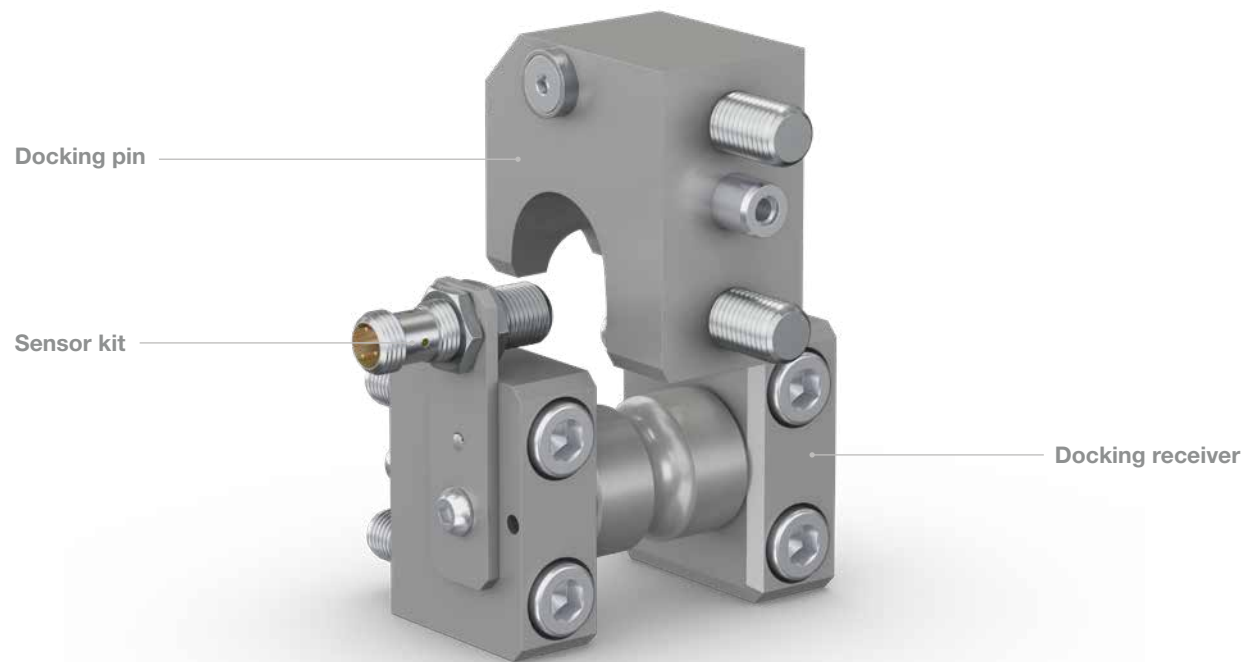
MPS 1531/2531 Tool stand system

Technical description

- highly flexible tool stand options
- customized design to meet tool requirements
- modular expansion and retrofitting possible
- low-wear construction



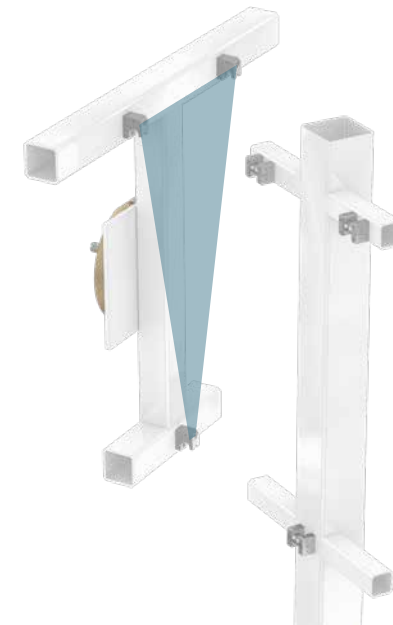
The steel structure is developed and constructed by the customer and is not included in the scope of delivery.



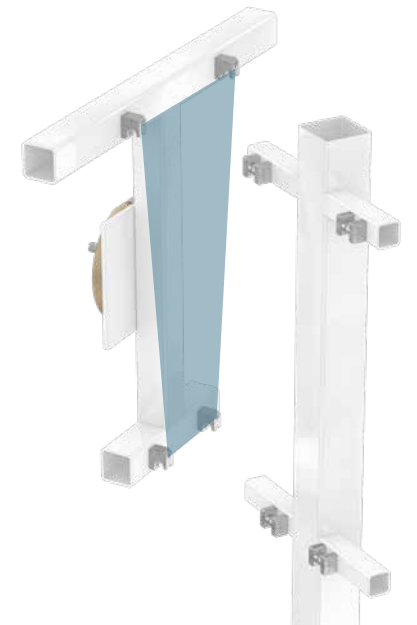
ill. 1



ill. 2



ill. 3

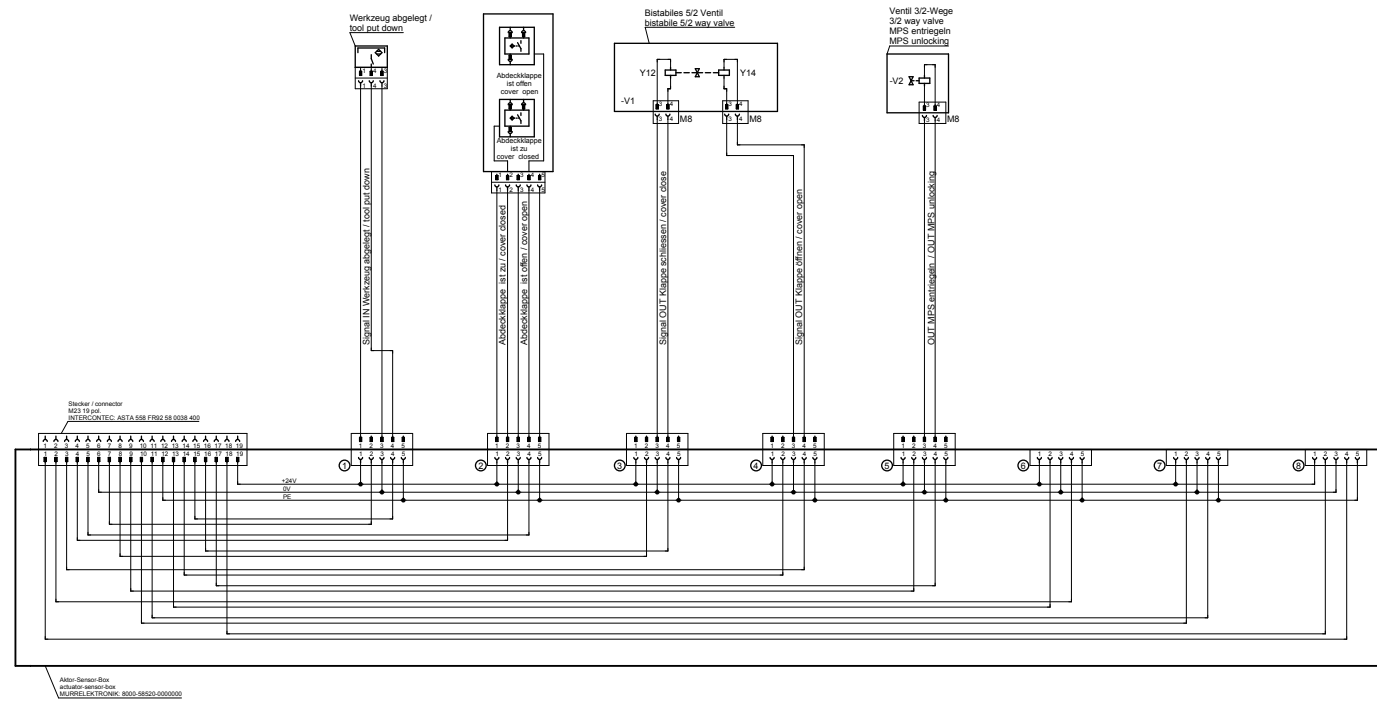


Order no.	Description	Sensors / Connections
K81565182	Docking receiver for self-assembly, including mounting materials	-
K81574229	Optional sensor kit for tool stand	PNP/M12 - 4-pol.
K81565183	Docking pin for self-assembly, including mounting materials	-

The illustration shows the various mounting options for the tool stand devices.

- ill. 1: Two-point mounting
- ill. 2: Three-point mounting
- ill. 3: Four-point mounting

DB01 - Electrical junction box

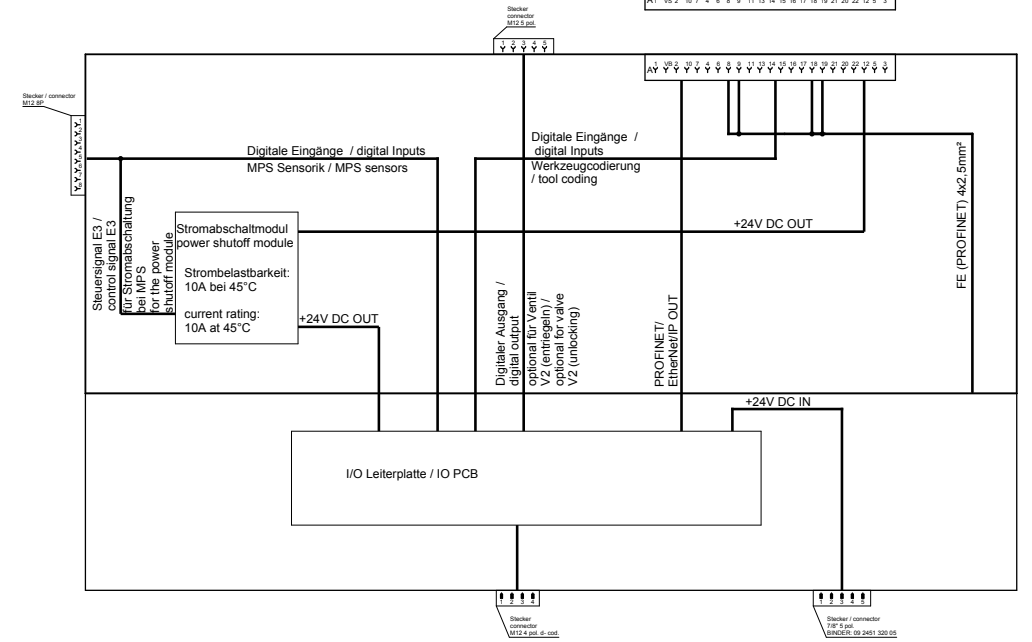
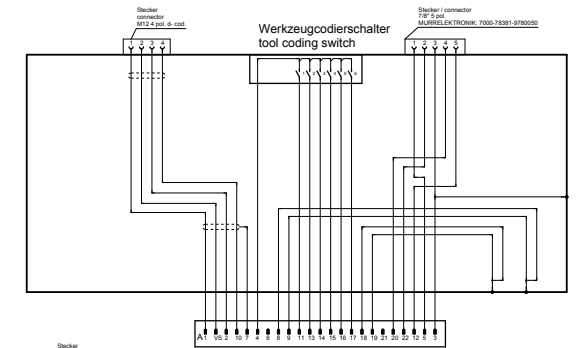


IDA A - Integrated bus module IDA 631

iii. 2

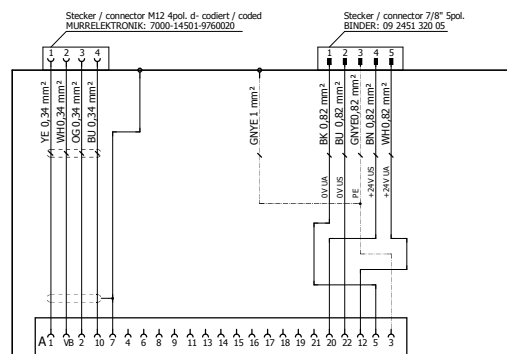


iii. 1

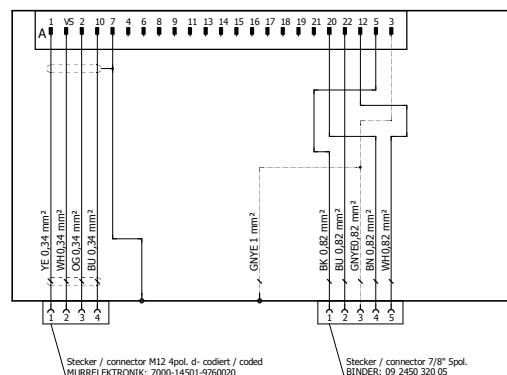


ECBK* – MultiDNet-R electrical module

iii. 1

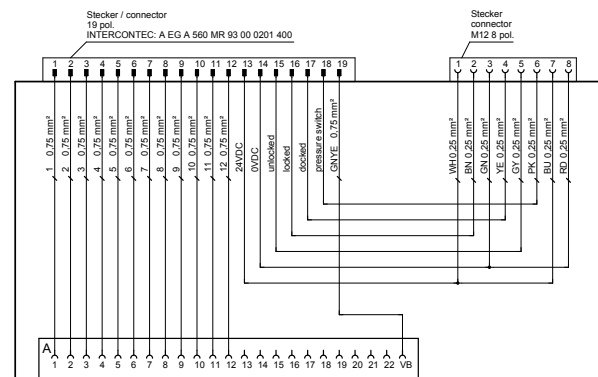


iii. 2

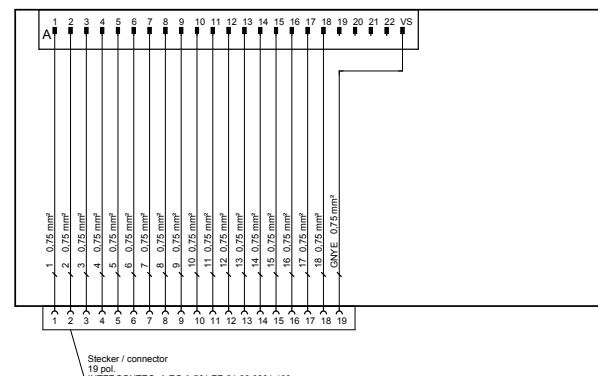


ECBL* – MultiDNet-R electrical module

iii. 1



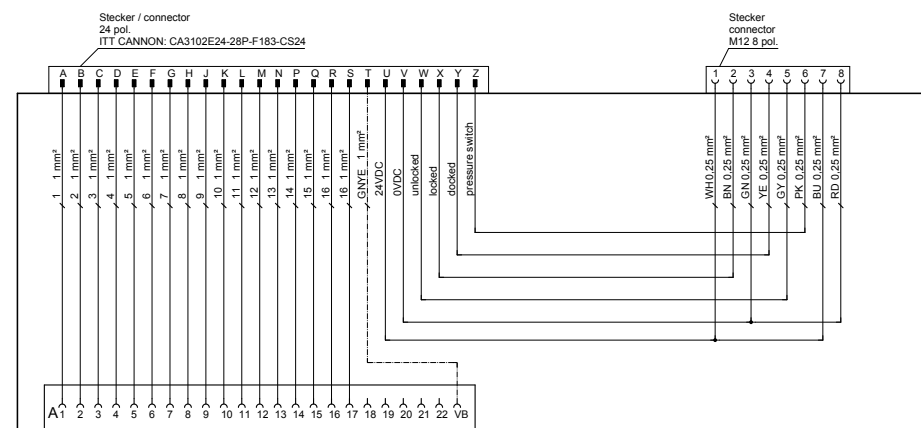
iii. 2



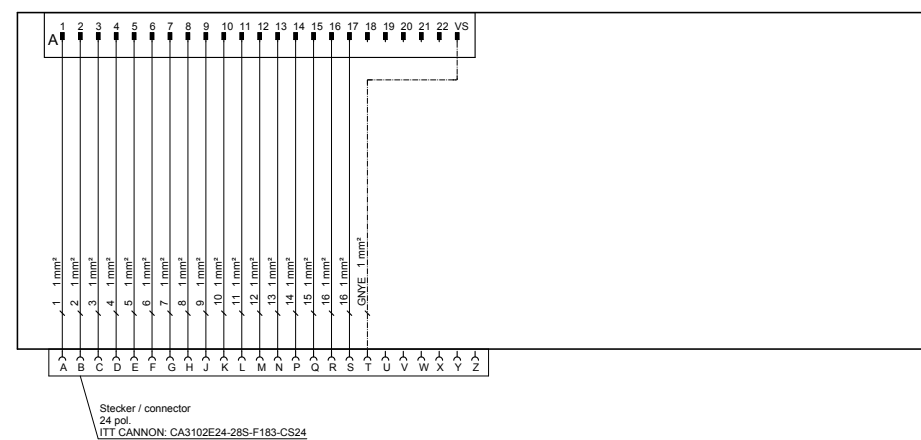
* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

ECBI* – MultiDNet-R electrical module

iii. 3

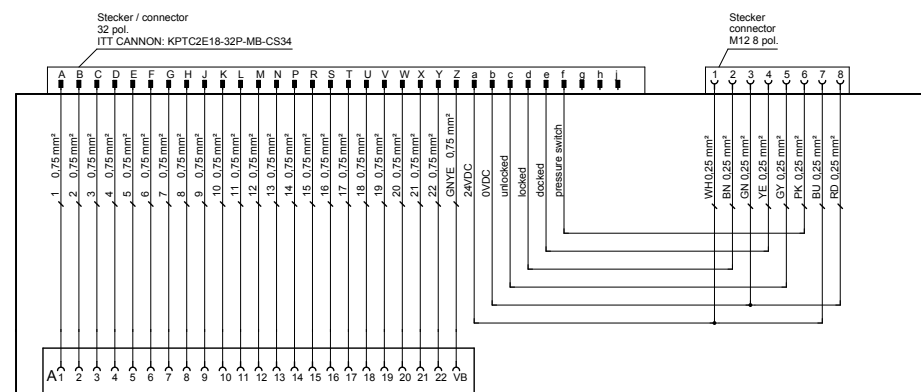


iii. 4

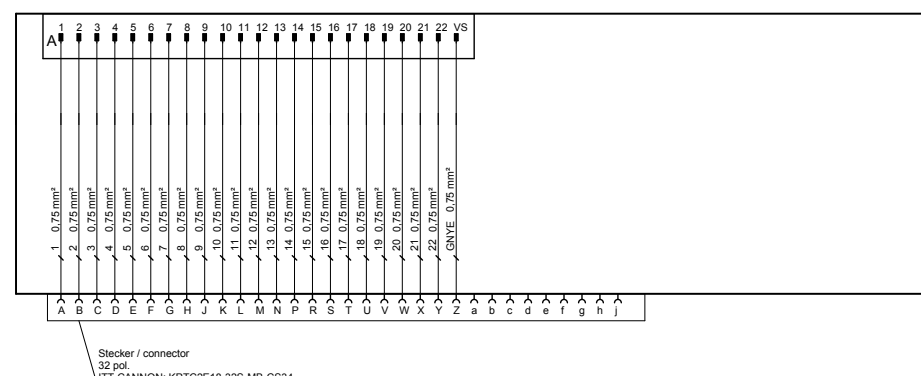


ECBB* – MultiDNet-R electrical module

iii. 5



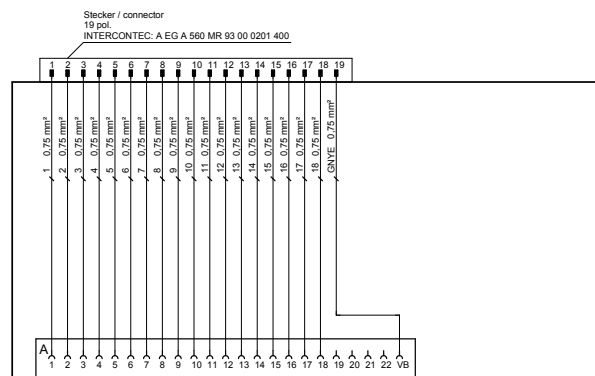
iii. 6



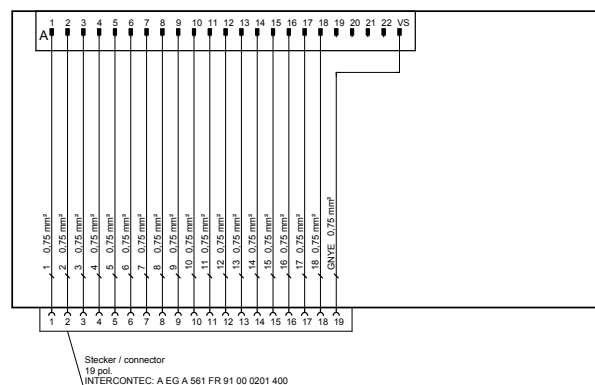
* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

ECBM* – MultiDNet-R electrical module

ill. 1

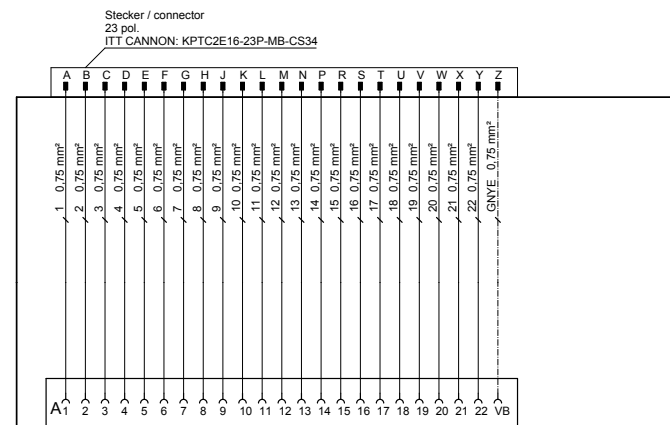


ill. 2

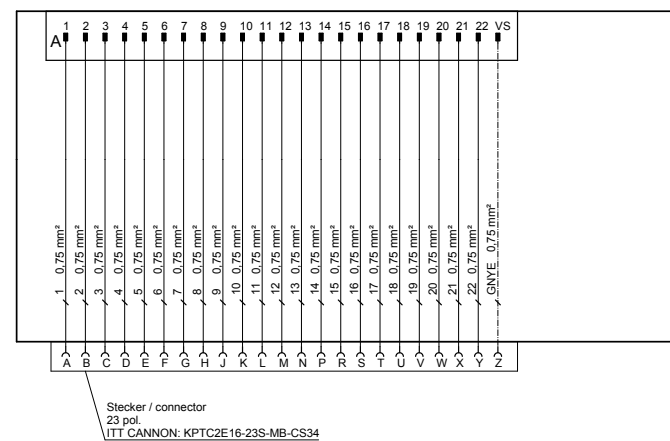


ECBA* – MultiDNet-R electrical module

ill. 3

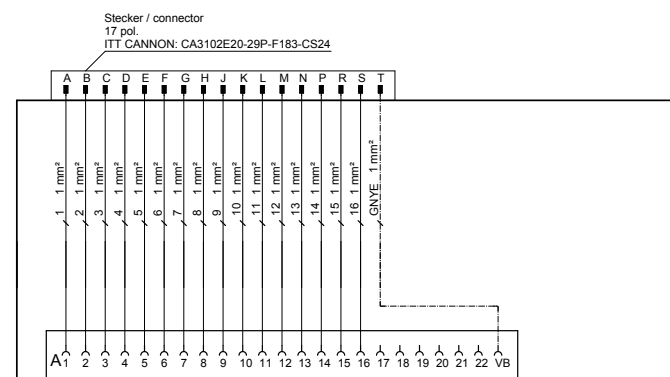


ill. 4

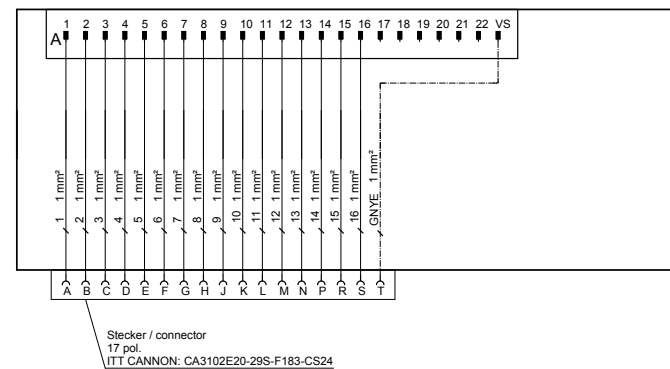


ECBD* – MultiDNet-R electrical module

ill. 5



ill. 6

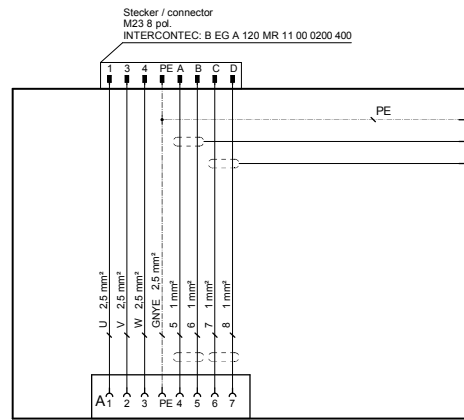


* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

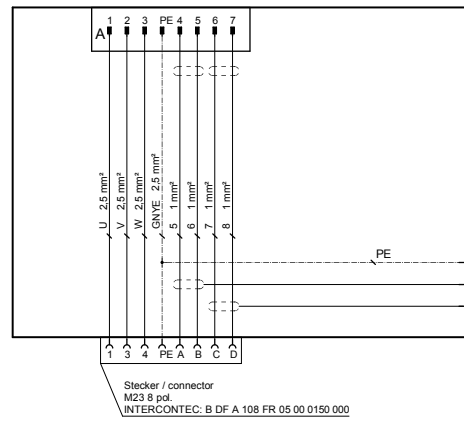
* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

ECBC* – MultiDNet-R electrical module

ill. 1

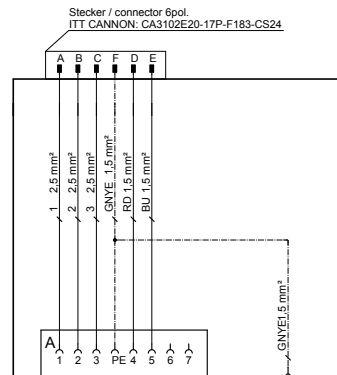


ill. 2

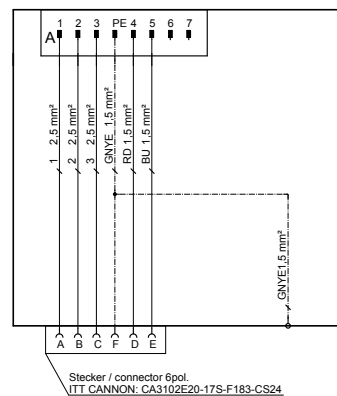


ECBF* – MultiDNet-R electrical module

ill. 3

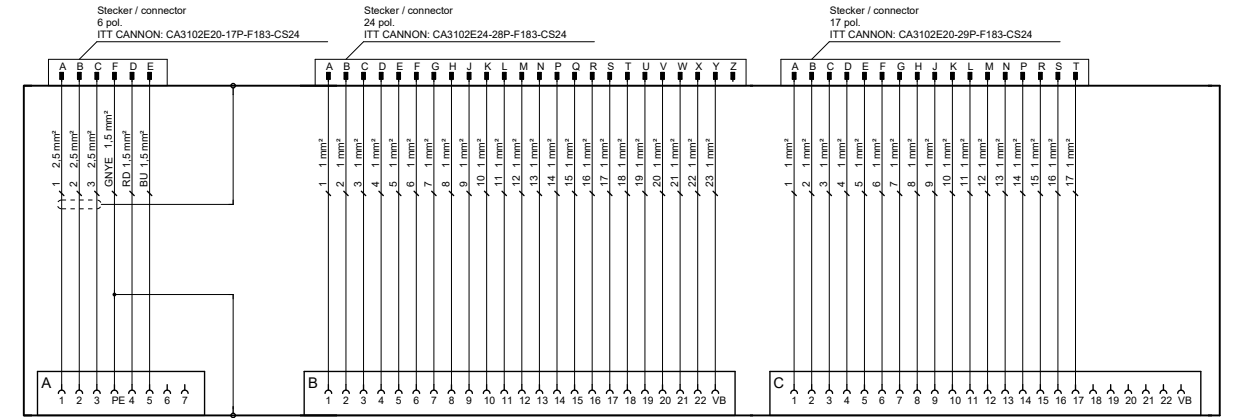


ill. 4

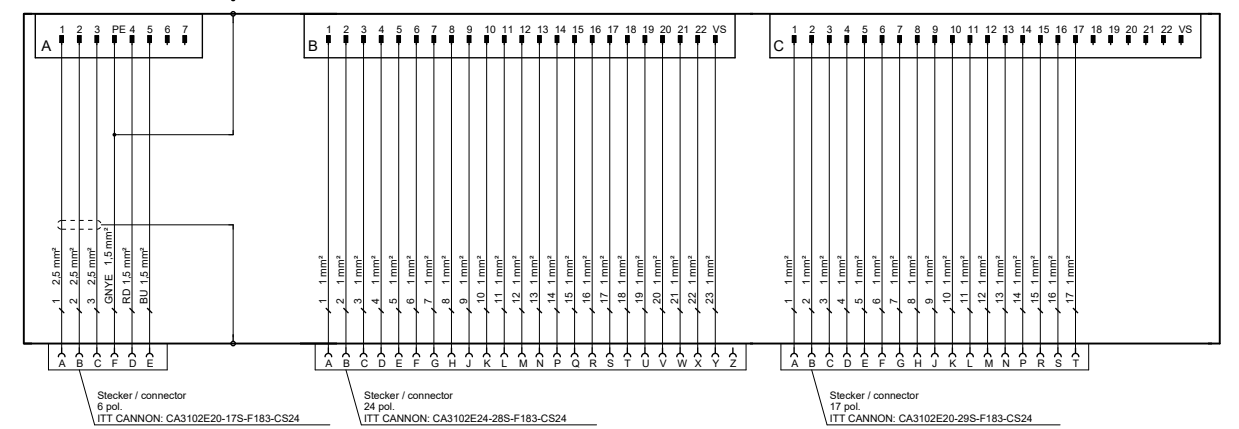


ECBQ* – MultiDNet-R electrical module

ill. 1

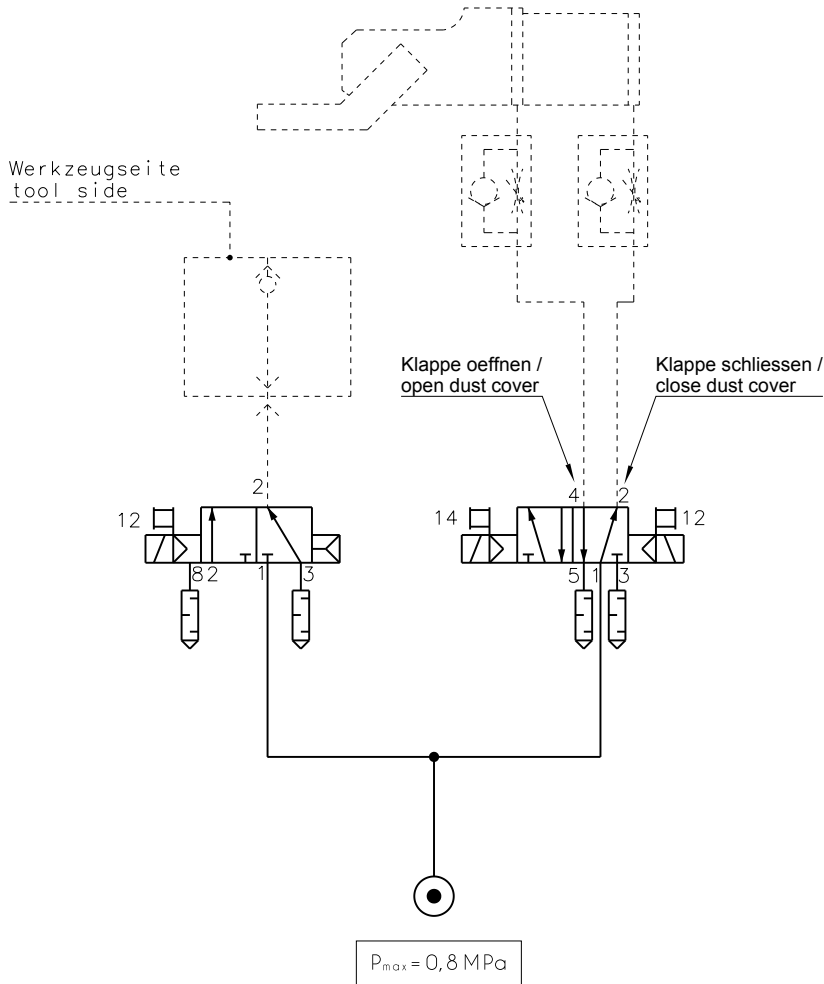


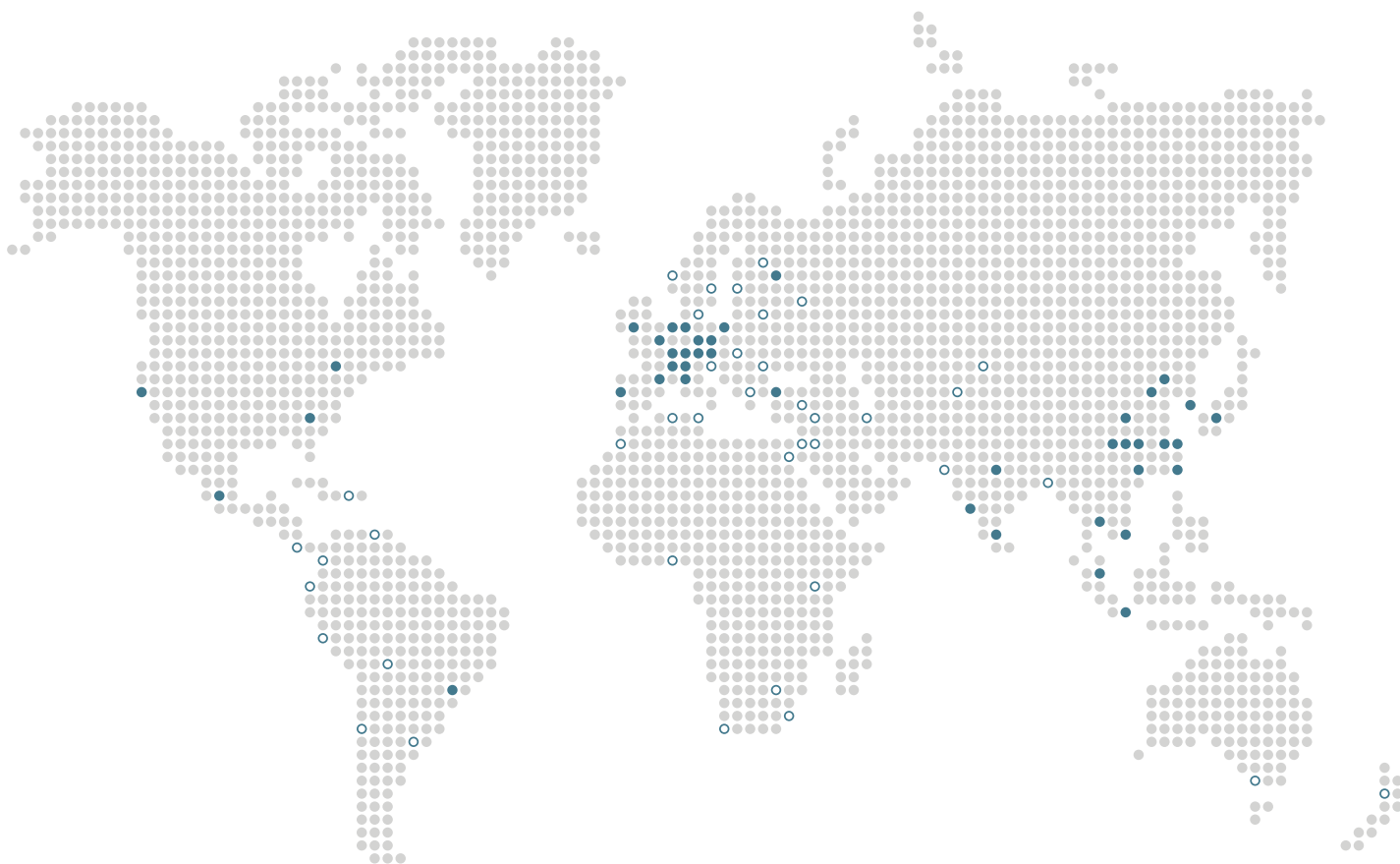
ill. 2



* Depending on the connection cable used, the maximum number of poles that can be assigned may be reduced when assembling the connection plug. The connection cables are not included in the scope of delivery.

VU01 - Valve unit





● Staubli Units ○ Representatives/Agents

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