

Joining module IJSys

Type 2168A...

Integrated all-in-one technology with ISO interface

The NC joining module Integrated Joining System IJSys Type 2168A... with integrated servo amplifier, strain gauge force sensor, and functional safety for a nominal joining force of 2.5 kN is particularly suitable for force-displacement-monitored assembly and joining processes.

- Standardized interface according to ISO 15552
- Force sensor for precise measurement and process control
- Easy installation thanks to integrated power electronics
- High dynamics thanks to direct drive
- Compact design

Description

The Integrated Joining System IJSys Type 2168A... electromechanical joining modules combine all the components necessary for a reliable joining process in a compact and robust housing. The ball screw drive converts the rotary motion of the integrated servomotor into linear motion, enabling standard functions such as joining to block, position and force-controlled joining, as well as movement to intermediate positions. Force measurement is performed by the strain gauge force sensor integrated in the flange, which is digitized directly in the unit. In addition to the sensor- and drive technology, the safety technology required for operation is also integrated. Safe Torque Off (STO) and a holding brake with Safe Brake Control (SBC) are available for this purpose.

Correct wiring of the safety technology, a 24 VDC supply to the logic, and a 48 VDC supply to the power unit are required for operation. Communication with the joining module takes place in real time via EtherCAT. In addition to force-displacement information, control and status signals are also transmitted. In combination with maXYmos NC Type 5847C... from variant C0 onwards, all known options for process control and monitoring are available. The fieldbus slave interfaces provided enable communication with the system via PROFIBUS, PROFINET, EtherNet/IP, or EtherCAT. The Ethernet interface can be used to transfer quality data via various protocols, as well as for visualization via VNC and data backups.



Application

The IJSys Type 2168A joining module is the ideal solution for machine and system builders who implement complex and highly developed production systems. It offers an easy-to-integrate and smart joining solution that impresses with its intelligent drive and all-in-one technology. This reduces complexity and costs while optimally meeting the needs of your customers.

The module is ideal for use in automated production systems as well as for manually controlled workstations with separating protective devices. It can be installed both vertically and horizontally. The joining units are fixed to the machine frame using an ISO 15552-compliant flange mounting. The tool holder on the ram is designed with an external thread in accordance with ISO 15552, so that standardized tools can be adapted quickly and easily.

Thanks to its innovative design, operation is also possible without components in the control cabinet. The consistent simplicity of the design makes it a future-proof solution for demanding production environments.

2168A_003-755e-03.26

Technical data

Dimensions	mm	page 3
Mounting fastening		flange mounting
Weight	kg	4.8
Max. tool weight ¹⁾	kg	5
Direction of measurement		compression/ tension
Nominal joining force	kN	2.5
Stroke length	mm	200
Practical repeatability	mm	0.01
Tool holder backlash	°	<0.5
Holding brake (standard)		Integrated
Max. speed	mm/s	250
Position sensor system		absolute encoder single turn
Resolution	mm	0.002
Force sensor		strain gauge
Temperature range	°C	10 ... 40
Protection class		IP54
Linearity in measuring range	%FSO	<0.5
Accuracy class force sensor	%	0.5
Life cycle ball screw (per defined drive profile)	cycles	approx. 10 million.
Short stroke	mm	see operating instructions

Power supply ²⁾	48 V power supply unit type xxxxA...	
Standard interface	terminals / connectors	
Evaluation unit ³⁾	maXYmos NC Type 5847C....	
Standard interface	PROFIBUS, PROFINET, EtherNet/IP, EtherCAT	
Power supply	VDC	24 ±5%

¹⁾ Possible radial forces must be taken into account regardless of the installation position. The permissible tool weight may need to be reduced for manual loading.

²⁾ For power supply, see accessories data sheet

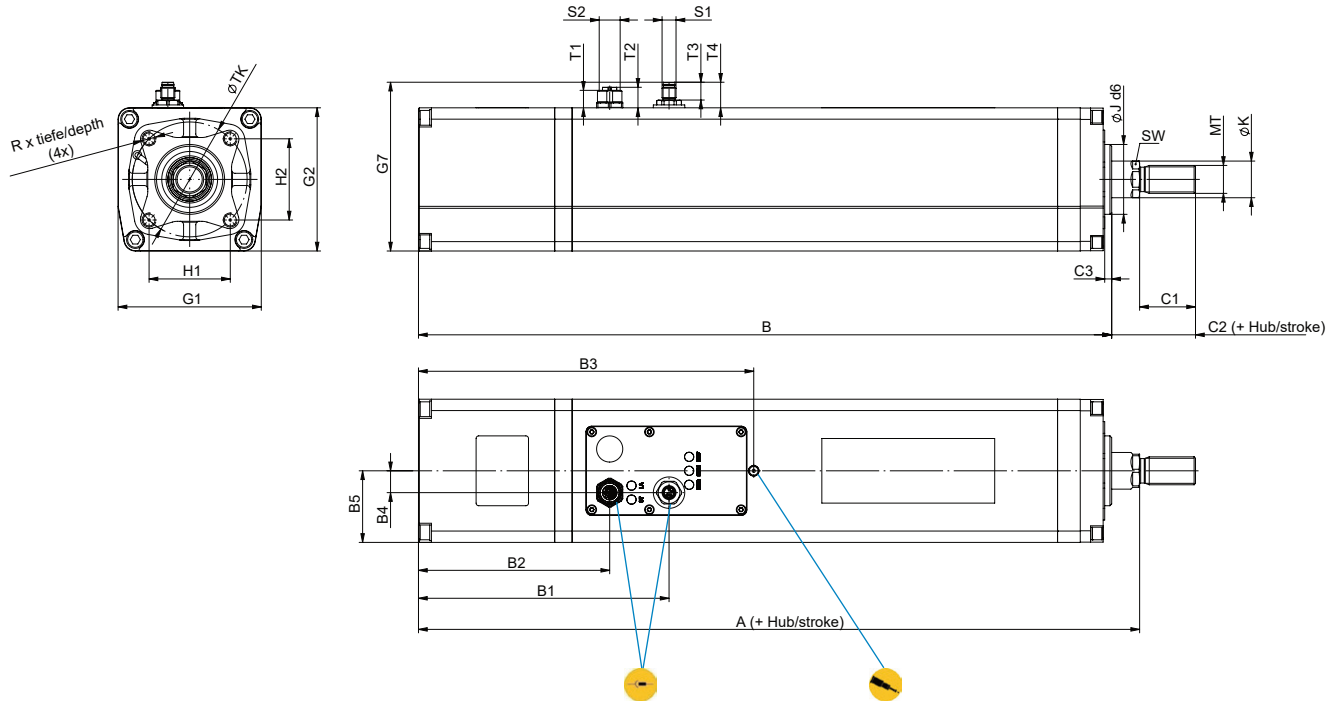
³⁾ maXYmos NC evaluation device from Type 5847C... or newer, see data sheet 003-757

For horizontal installation, the deflection of the plunger must be taken into account depending on the tool weight.

For travel profiles with a total stroke that is ≤ the short stroke, a lubrication stroke (> than the short stroke) must be performed at regular intervals.



Dimensions

Type	A	B	B1	B2	B3	B4	B5	C1	C2	C3	G1	G2	G7	H1
2168A...	413	397	143.5	109.5	192	12.5	41	32	48	4	82	82	96.65	46.5
	H2	∅Jd6	∅K	MT	SW	∅TK	R	S1	S2	T1	T2	T3	T4	
	46.5	∅40 d6	∅21	M16x1,5	SW19	∅65,76	M8x13	M8x1	M12x1	10	11.75	10.2	14.65	



During installation, radial forces (e.g., due to the weight of the tool) must be taken into account.
An external guide may need to be provided for the tappet.

Legende: Warnings and notes

-  Lubrication points
-  Electrical connection points

Functional principle with maXYmos NC Type 5847C...

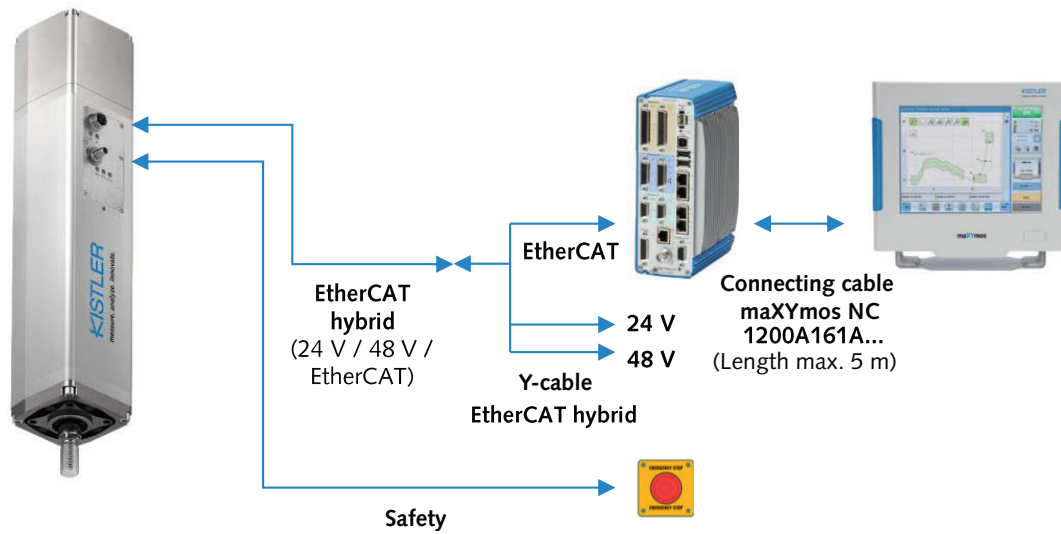


Fig.1: Functional principle of a joining system with Integrated Joing System IJSys Type 2168A... and maXYmos NC Type 5847C...

Supplied accessories

None

Accessories

- | | |
|---|------------|
| • maXYmos NC evaluation device ¹⁾ (MEM) | 5847C... |
| • PC software maXYmos Analyzer | 2850A |
| • Mounting rail adapter for 35 mm
Top-hat rail included
2 mounting screws M3x10 | 5700A31 |
| • Display module (DIM) with stand | 5877AZ000 |
| • Connection cable maXYmos NC
MEM to DIM, length 5 m | 1200A161A5 |

Cable

- | | |
|---|---------------|
| • Hybrid cable for power supply and data, length 2 m | 1200A263AMSF2 |
| • Hybrid Y cable for EtherCAT and power supply, length 0.75 m | 1200A295A0.75 |
| • Cable for connection for safety technology, length 2 m | 1200A239A2 |

Other cable lengths available on request.

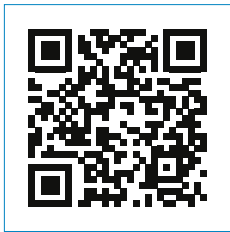
¹⁾ maXYmos NC evaluation device from Type 5847C... or newer, see data sheet 003-757

2168A_003-755e-03.26

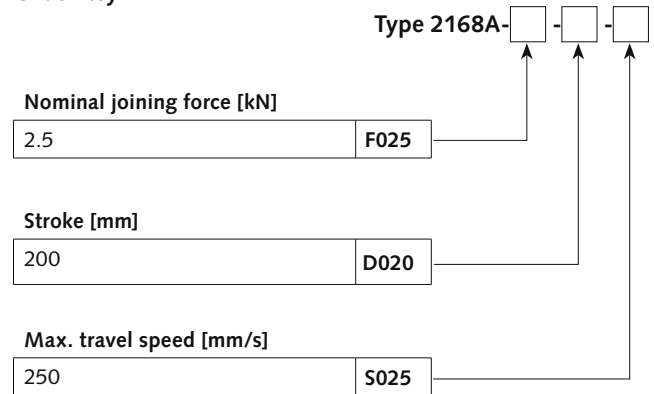
Unsere Services:

- Application consulting
- Commissioning support
- User and operator training
- System optimization
- Accredited calibrations
- MFU / MSA
- Maintenance contracts
- Maintenance and repair support
- 24/7 hotline

Details and additional services available upon request at
www.kistler.com/service/joining



Order key:



Ordering example:

Type 2168A-F025-D020-S025

NC joining module Type 2168A
Nominal joining force 2.5 kN: F025, stroke 200 mm:
D020, max. travel speed 250 mm/s: S025