Operator components for CNC controls
Operator panels

SINUMERIK OP 012

Overview

The SINUMERIK OP 012 operator panel front with 12.1" TFT color display with a resolution of 800 × 600 pixels (SVGA) features a 59-key membrane keypad as well as 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys. The integral mouse provides an additional method of machine control. The 2 × 8 vertical softkeys can be used as direct keys in the PLC.

The operator panel front is mounted from the rear using special clamps included in the scope of supply.

Benefits

- User-friendly operator control and monitoring thanks to 12" display
- Easy operation thanks to integral keyboard and mouse

Integration

The SINUMERIK OP 012 operator panel front can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl:
  NCU 710.2/NCU 720.2/NCU 720.2 PN/
  NCU 730.2/NCU 730.2 PN, SINUMERIK PCU 50.3
- SINUMERIK PCU 321

The optional SINUMERIK direct key module provides an additional connection of the 2 × 8 vertical softkeys as direct keys to PROFIBUS DP, if no SINUMERIK Push Button Panel or machine control panel with connection of the direct keys is available.

Technical specifications

Product name	6FC5203-0AF02-0AA1
	SINUMERIK OP 012 operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	21 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-20 ... +60 °C (-4 ... +140 °F)
• Transport	-20 ... +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 ... 45 °C (32 ... 113 °F)
- Rear	0 ... 55 °C (32 ... 131 °F)
Dimensions	
• Width	483 mm (19.02 in)
• Height	310 mm (12.2 in)
• Depth	30 mm (1.18 in)
Depth	
• Without PCU	20 mm (0.78 in)
• With PCU 50.3	108.2 mm (4.25 in)
- Clearance	10 mm (0.39 in)
Weight, approx.	5 kg (11 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 012 operator panel front 30.7 cm/12.1" TFT (800 × 600) with membrane keys and mouse	**6FC5203-0AF02-0AA1**
SINUMERIK direct key module PROFIBUS DP With mounting kit for SINUMERIK OP 012	**6FC5247-0AF11-0AA0**
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 012	**6FC5248-0AF08-0AA0**
USB mouse For operator panel front	**6FC5247-0AF01-0AA0**
Sealing caps (10 units) For the USB port	**6FC5248-0AF05-0AA0**
Set of clamps (6 units)	**6FC5248-0AF06-0AA0**

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Operator components for CNC controls
Operator panels

SINUMERIK OP 015A

Overview

The SINUMERIK OP 015A operator panel front with 15" TFT color display with a resolution of 1024 × 768 pixels (XGA) features a 62-key membrane keyboard with 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys and an integral mouse. The 2 × 8 vertical softkeys can be used as direct keys in the PLC.

The operator panel front is mounted from the rear using special clamps included in the scope of supply.

Benefits

- Very user-friendly operator control and monitoring thanks to 15" display
- Easy operation thanks to integral keyboard and mouse

Integration

The SINUMERIK OP 015A operator panel front can be used for:
- SINUMERIK 840Di sl
- SINUMERIK 840D sl:
  NCU 710.2/NCU 720.2/NCU 720.2 PN/
  NCU 730.2/NCU 730.2 PN, SINUMERIK PCU 50.3
- SINUMERIK PCU 321

The optional SINUMERIK direct key module provides an additional connection of the 2 × 8 vertical softkeys as direct keys to PROFIBUS DP, if no SINUMERIK Push Button Panel or machine control panel with connection of the direct keys is available.

Technical specifications

Product name	6FC5203-0AF05-0AB0 SINUMERIK OP 015A operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	25 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-20 … +60 °C (-4 ... +140 °F)
• Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 … 45 °C (32 ... 113 °F)
- Rear	0 … 55 °C (32 ... 131 °F)
Dimensions	
• Width	483 mm (19.02 in)
• Height	355 mm (13.98 in)
• Depth	53 mm (2.09 in)
Depth	
• Without PCU	42 mm (1.65 in)
• With PCU 50.3	127 mm (5.00 in)
- Clearance	10 mm (0.39 in)
Weight, approx.	8.4 kg (18.5 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 015A operator panel front 38.3 cm/15.1" TFT (1024 × 768) with membrane keys	**6FC5203-0AF05-0AB0**
SINUMERIK direct key module PROFIBUS DP With mounting kit for SINUMERIK OP 012	**6FC5247-0AF11-0AA0**
Direct key module mounting kit For SINUMERIK OP 015A/TP 015A	**6FC5247-0AF30-0AA0**
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 015A/OP 015AT/TP 015A/TP 015AT for vertical softkeys	**6FC5248-0AF24-0AA0**
USB mouse For operator panel front	**6FC5247-0AF01-0AA0**
Sealing caps (10 units) For the USB port	**6FC5248-0AF05-0AA0**
Set of clamps (9 units) For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	**6FC5248-0AF14-0AA0**

Operator components for CNC controls
Operator panels

SINUMERIK OP 015AT

Overview

The SINUMERIK OP 015AT operator panel front with 15" TFT color display, 1024 × 768 pixels (XGA), supports the distributed installation of the operator panel front and control. The SINUMERIK OP 015AT operator panel front contains a membrane keyboard with 62 keys as well as 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys and an integral mouse.

The operator panel front is mounted from the rear using special clamps supplied with the panel.

Benefits

■ Design of flat operator panels through shallow installation depth and low power dissipation.

■ Vibration-free mounting of the SINUMERIK PCU in the control cabinet.

■ Efficient operation of larger machines using up to 4 additional, distributed operator panels simultaneously.

Design

The SINUMERIK OP 015AT operator panel front is connected to the PCU/NCU via Ethernet as a Thin Client in its own subnet (via DHCP server to PCU/NCU).

Ports:

• 3 × USB 1.1 (2 × rear, 1 × front)

• Ethernet 10/100 Mbit/s

Function

• Signal transmission between operator panel front and PCU/NCU via Industrial Ethernet

• Simple installation

• Mixed operation with one operator panel front directly at the PCU is possible. Operation on a SINUMERIK OP 015AT has the same authorization rights as operation on an operator panel front connected directly to the PCU. The operator panel in passive mode shows a darkened screen.

• The distance to the operator panel fronts is determined by the maximum distance between two network nodes/access points (100 m/328 ft).

Integration

The SINUMERIK OP 015AT operator panel front can be used for:

• SINUMERIK 840Di sl

• SINUMERIK 840D sl:
NCU 710.2/NCU 720.2/NCU 720.2 PN/
NCU 730.2/NCU 730.2 PN, SINUMERIK PCU 50.3

• SINUMERIK PCU 321

The 2 × 8 vertical softkeys can be used as direct keys with SINUMERIK 840Di sl/840D sl.

Technical specifications

	6FC5203-0AF05-1AB0
Product name	SINUMERIK OP 015AT operator panel front
Input voltage	24 V DC
Power consumption, max.	25 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage/Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage/Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 … 45 °C (32 ... 113 °F)
- Rear	0 … 55 °C (32 ... 131 °F)
Dimensions	
• Width	483 mm (19.02 in)
• Height	355 mm (13.98 in)
• Depth	53 mm (2.09 in)
Depth without PCU	42 mm (1.65 in)
• Clearance	10 mm (0.39 in)
Weight, approx.	7.6 kg (16.8 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 015AT operator panel front	**6FC5203-0AF05-1AB0**
38 cm/15" TFT (1024 × 768) with membrane keys and integral TCU	
Accessories	
Slide-in labels for inscribing	**6FC5248-0AF24-0AA0**
3 A4 sheets for SINUMERIK OP 015A/OP 015AT/TP 015A/ TP 015AT for vertical softkeys	
USB mouse	**6FC5247-0AF01-0AA0**
For operator panel front	
Sealing caps (10 units)	**6FC5248-0AF05-0AA0**
For the USB port	
Set of clamps (9 units)	**6FC5248-0AF14-0AA0**
For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	

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Operator components for CNC controls

Operator panels

SINUMERIK TP 015A

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Overview

The SINUMERIK TP 015A operator panel front with 15" TFT color display with a resolution of 1024 × 768 pixels (XGA) and touch screen features a 62-key membrane keyboard as well as 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys and an integral mouse. The 2 × 8 vertical softkeys can be used as direct keys in the PLC.

The operator panel front is mounted from the rear using special clamps included in the scope of supply.

Benefits

■ Very user-friendly operator control and monitoring thanks to 15" display
■ Easy operation thanks to touch screen, integral keyboard and mouse

Integration

The SINUMERIK TP 015A operator panel front can be used for:

• SINUMERIK 840Di sl
• SINUMERIK 840D sl:
  NCU 710.2/NCU 720.2/NCU 720.2 PN/
  NCU 730.2/NCU 730.2 PN, SINUMERIK PCU 50.3
• SINUMERIK PCU 321

The optional SINUMERIK direct key module provides an additional connection of the 2 × 8 vertical softkeys as direct keys to the PROFIBUS DP, if no SINUMERIK Push Button Panel or machine control panel with connection of the direct keys is available or if the direct key commands cannot be transferred over the Thin Client.

Technical specifications

	6FC5203-0AF08-0AB2
Product name	SINUMERIK TP 015A operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	25 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage/Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage/Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 … 45 °C (32 ... 113 °F)
- Rear	0 … 55 °C (32 ... 131 °F)
Dimensions	
• Width	483 mm (19.02 in)
• Height	355 mm (13.98 in)
• Depth	53 mm (2.09 in)
Depth	
• Without PCU	42 mm (1.65 in)
• With PCU 50.3	127 mm (5.00 in)
- Clearance	10 mm (0.39 in)
Weight, approx.	8.4 kg (18.5 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK TP 015A operator panel front 15" TFT (1024 × 768) with membrane keys and touch screen	**6FC5203-0AF08-0AB2**
SINUMERIK direct key module PROFIBUS DP With mounting kit for SINUMERIK OP 012	**6FC5247-0AF11-0AA0**
Direct key module mounting kit For SINUMERIK OP 015A/TP 015A	**6FC5247-0AF30-0AA0**
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 015A/OP 015AT/TP 015A/TP 015AT for vertical softkeys	**6FC5248-0AF24-0AA0**
USB mouse For operator panel front	**6FC5247-0AF01-0AA0**
Sealing caps (10 units) For the USB port	**6FC5248-0AF05-0AA0**
Set of clamps (9 units) For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	**6FC5248-0AF14-0AA0**

Operator components for CNC controls

Operator panels

Overview

The SINUMERIK TP 015AT operator panel front with 15" TFT color display, 1024 × 768 pixels (XGA) and touch screen supports the distributed installation of the operator panel front and control. The SINUMERIK TP 015AT operator panel front contains a membrane keyboard with 62 keys as well as 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys and an integral mouse.

The operator panel front is mounted from the rear using special clamps included in the scope of supply.

Benefits

- Flat operator panel through shallow installation depth
- Low power dissipation
- Simple installation
- Vibration-free mounting in the control cabinet
- Efficient operation of larger machines using up to 4 additional, distributed operator panels simultaneously.

Design

The SINUMERIK TP 015AT operator panel front is connected to the PCU/NCU via Ethernet as a Thin Client in its own subnet (via DHCP server to PCU/NCU).

Ports:

- 3 × USB 1.1 (2 × rear, 1 × front)
- Ethernet 10/100 Mbit/s

Function

- Signal transmission between operator panel front and PCU/NCU via Industrial Ethernet
- Mixed operation with one operator panel front directly at the PCU is possible. Operation on a TP 015AT has the same authorization rights as operation on an operator panel front connected directly to the PCU. The operator panel in passive mode shows a darkened screen.
- The distance to the operator panel fronts is determined by the maximum distance between two network nodes/access points (100 m/328 ft).

Integration

The SINUMERIK TP 015AT operator panel front can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl:
  NCU 710.2/NCU 720.2/NCU 720.2 PN/
  NCU 730.2/NCU 730.2 PN, SINUMERIK PCU 50.3
- SINUMERIK PCU 321

The 2 × 8 vertical softkeys can be used as direct keys with SINUMERIK 840Di sl and SINUMERIK 840D sl.

Technical specifications

	6FC5203-0AF08-1AB2
Product name	SINUMERIK TP 015AT operator panel front
Input voltage	24 V DC
Power consumption, max.	25 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage/Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage/Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 … 45 °C (32 ... 113 °F)
- Rear	0 … 55 °C (32 ... 131 °F)
Dimensions	
• Width	483 mm (19.02 in)
• Height	355 mm (13.98 in)
• Depth	53 mm (2.09 in)
Depth without PCU	42 mm (1.65 in)
• Clearance	10 mm (0.39 in)
Weight, approx.	7.6 kg (16.8 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK TP 015AT operator panel front 15" TFT (1024 × 768) with membrane keys, touch screen and integral TCU	**6FC5203-0AF08-1AB2**
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 015A/OP 015AT/TP 015A/TP 015AT	**6FC5248-0AF24-0AA0**
USB mouse For operator panel front	**6FC5247-0AF01-0AA0**
Sealing caps (10 units) For the USB port	**6FC5248-0AF05-0AA0**
Set of clamps (9 units) For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	**6FC5248-0AF14-0AA0**

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Operator components for CNC controls
Operator panels

SINUMERIK direct key module

Overview

The SINUMERIK direct key module provides the capability of performing machine operations with the two rows of keys (on the left and the right of the screen) on the SINUMERIK OP 012/ OP 015A/TP 015A operator panel fronts.

Design

The SINUMERIK direct key module is fitted alongside the SINUMERIK PCU 50.3 on the SINUMERIK operator panel fronts OP 012/OP 015A/TP 015A. Cables and installation components for assembling the SINUMERIK PCU 50.3 with OP 012 are included in the scope of delivery.

For the combination SINUMERIK PCU 50.3 with OP 015A/TP 015A there is a separate mounting kit which, if required, must be ordered separately.

Integration

The SINUMERIK direct key module is suitable for connection to:
• SINUMERIK PCU 50.3 with the SINUMERIK operator panel fronts OP 012/OP 015A/TP 015A

The SINUMERIK direct key module is connected to PROFIBUS DP of the SINUMERIK operator panel front using a ribbon cable and PROFIBUS connectors.

Technical specifications

	6FC5247-0AF11-0AA0
Product name	SINUMERIK direct key module for PROFIBUS DP
Input voltage	5 V DC
Power consumption, max.	0.75 W
Degree of protection according to EN 60529 (IEC 60529)	IP20
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-20 … +60 °C (-4 ... +140 °F)
• Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	0 … 55 °C (32 ... 131 °F)
Dimensions	
• Width	106 mm (4.17 in)
• Height	42 mm (1.65 in)
• Depth	80 mm (3.15 in)
Weight, approx.	0.6 kg (1.32 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK direct key module PROFIBUS DP With mounting kit for SINUMERIK OP 012	**6FC5247-0AF11-0AA0**
Direct key module mounting kit For SINUMERIK OP 015A/TP 015A	**6FC5247-0AF30-0AA0**

Operator components for CNC controls
Operator panels

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Selection and ordering data

Description	Order No.
SINUMERIK PCU 50.3-C	**6FC5210-0DF31-2AA0**
1.5 GHz/1 × 512 MB, Windows XP ProEmbSys	
SINUMERIK PCU 50.3-P	**6FC5210-0DF33-2AA0**
2.0 GHz/1 × 1 GB, Windows XP ProEmbSys	
HMI-Advanced operating software	
On hard disk of the SINUMERIK PCU[1]	
Languages: Chinese Simplified, English, French, German, Italian, Spanish	
• Single license for current software version	**6FC5253-0BX10-0AF0**
• Single license for specific software version	**6FC5253-■BX10-■AF0**
SINUMERIK Operate operating software	
On hard disk of the SINUMERIK PCU[1]	
Languages: Chinese Simplified, English, French, German, Italian, Spanish	
• Single license for current software version	**6FC5860-1YF00-0YA0**
• Single license for specific software version	**6FC5860-1YF2■-■YA0**

Description	Order No.
Accessories	
Hard disk, 40 GB	**6FC5247-0AF08-4AA0**
For SINUMERIK PCU 50.3 with support plate and damper (included in scope of supply of the SINUMERIK PCU 50.3)	
Memory expansion	
For SINUMERIK PCU 50.3	
• 512 Mbyte	**6ES7648-2AG30-0GA0**
• 1 GB	**6ES7648-2AG40-0GA0**
Mounting bracket	**6FC5248-0AF20-2AA0**
For SINUMERIK PCU, video link receiver or TCU behind operator panel front	
1 GB CompactFlash Card	**6FC5313-5AG00-0AA0**
Empty	
SIMATIC PC USB FlashDrive[2]	**6ES7648-0DC40-0AA0**
2 GB, USB 2.0, metal enclosure, boot capability, incl. SIMATIC PC BIOS Manager	
SINUMERIK Service Pack Recovery Media WIN XP ProEmbSys	**6FC5253-8CX10-6XU8**
For SINUMERIK PCU with Windows XP ProEmbSys on DVD-ROM	
Contents:	
• Windows XP ProEmbSys incl. SP3	
• Ghost system software; emergency BOOT	
• Multilingual User Interface Pack (Chinese Simplified, Chinese Traditional, Czech, Danish, Dutch, Finnish, French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese/Brazilian, Rumanian, Russian, Slovak, Spanish, Swedish, Turkish) Documentation (English/German)	
PCI interface card 2 × COM, 2 × LPT	**6ES7648-2CA01-0AA0**
For SINUMERIK PCU 50.3 (occupies 1 to 2 PCI expansion slots)	

Example of specific HMI-Advanced software version, e.g. 7.5: 6FC5253-**7**....-**5**...

Example of specific software version 2.6 for SINUMERIK Operate operating software: 6FC5860-...**20-0**...

Note:
The SINUMERIK PCU 50.3 is delivered without mounting brackets. Please include the mounting brackets in the order.

[1] Please ensure that the order number for the software to be delivered on the hard disk directly follows the order number for the SINUMERIK PCU on the order form.

[2] Subject to export regulations AL:N and ECCN:EAR99H.

Operator components for CNC controls

Handheld units

Handwheel connection module

■ Overview

The SINUMERIK handwheel connection module for PROFIBUS can be used to connect two handwheels or the handwheel of the handheld unit type B-MPI and the mini handheld unit.

On the SINUMERIK handwheel connection module for PROFIBUS, digital inputs, outputs, connections for override rotary switches and handwheels are provided, as well as a PROFIBUS DP interface for communication.

The SINUMERIK handwheel connection module for PROFIBUS is designed for control cabinet mounting.

■ Design

Interfaces for:
- PROFIBUS DP
- 6 inputs
- 6 inputs and 6 outputs
  additional cable set required
- 16 direct keys of SINUMERIK OP 012/OP 015A/TP 015A
- 2 handwheels

■ Integration

The SINUMERIK handwheel connection module for PROFIBUS can be used for:
- SINUMERIK 840Di sl/840D sl over PROFIBUS DP

■ Technical specifications

	6FC5303-0AA02-0AA0
Product name	SINUMERIK handwheel connection module
Input voltage	24 V DC
Power consumption, max.	15.2 W
Degree of protection according to EN 60529 (IEC 60529)	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 95 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-20 … +60 °C (-4 … +140 °F)
• Transport	-25 … +55 °C (-13 ... +131 °F)
• Operation	
- Front	0 ... 45 °C (32 … 113 °F)
- Rear	0 ... 55 °C (32 … 131 °F)
Dimensions	
• Width	234 mm (9.21 in)
• Height	137 mm (5.39 in)
• Depth	40 mm (1.57 in)
Weight, approx.	0.82 kg (1.81 lb)
Approvals, according to	cULus

■ Selection and ordering data

Description	Order No.
Handwheel connection module PROFIBUS	**6FC5303-0AA02-0AA0**
Accessories	
Signal cable for handwheel Pre-assembled Length: ≤ 25 m (82.03 ft)[1]	**6FX8002-2CP00-....**
Feed/rapid traverse override electronic rotary switch 1 × 23G, T = 32, cap, button, pointer, and rapid traverse and feed dials	**6FC5247-0AF13-1AA0**
Spindle/rapid traverse override electronic rotary switch 1 × 16G, T = 24, cap, button, pointer, and rapid traverse and spindle dials	**6FC5247-0AF12-1AA0**
Cable set (60 units) For additional control devices of the machine control panels Length: 500 mm (19.69 in)	**6FC5247-0AA35-0AA0**

Example:
16G: latching at position 16
T = 24: 24 positions for 360°

[1] For length code, see Connection system MOTION-CONNECT.

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Operator components for CNC controls
Machine control panels

| **SINUMERIK MCP 310C PN** | **SINUMERIK MCP 310 PN** |

■ Selection and ordering data

Description	Order No.
SINUMERIK MCP 310C PN machine control panel	**6FC5303-0AF23-0AA1**
PROFINET/Industrial Ethernet Width 310 mm (12.2 in), with mechanical keys	
Accessories	
Square key cover, for labeling	**6FC5248-0AF12-0AA0**
1 set comprising of: 90 × ergo gray, 20 × red, 20 × yellow, 20 × green, 20 × mid-gray	
Square key cover, for labeling	**6FC5248-0AF21-0AA0**
90 × transparent	
Actuating element, 22 mm (0.87 in)	**3SB3000-1HA20**
Latching mushroom pushbutton, red and non-illuminated with 40 mm (1.57 in) protection against lifting and tilting, incl. holder	
Contact block with 2 contacts	**3SB3400-0A**
1 NO + 1 NC, 2-pole screw terminal	
Key set (10 sets)	**6FC5148-0AA03-0AA0**
For machine control panel	
Spindle/rapid traverse override rotary switch	**6FC5247-0AF12-1AA0**
1 × 16G, T = 24, cap, button, pointer, and rapid traverse and spindle dials	
Feed/rapid traverse override rotary switch	**6FC5247-0AF13-1AA0**
1 × 23G, T = 32, cap, button, pointer, and rapid traverse and feed dials	
Cable set (60 units)	**6FC5247-0AA35-0AA0**
For additional control devices of the machine control panels Length: 500 mm (19.69 in)	
Signal cable for handwheel connection	**6FX8002-2CP00-....**
Length, max.: 25 m (82.03 ft)[1]	
Set of clamps (9 units)	**6FC5248-0AF14-0AA0**
For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	

Example:
16G: Latching at position 16
T = 24: 24 positions for 360°

Ordering data for Ethernet or PROFINET can be found under Industrial Ethernet switches – SCALANCE.

■ Overview

The SINUMERIK MCP 310 PN machine control panel with membrane keys is designed to permit user-friendly, well-structured operation of the machine functions. It is suitable for machine-level operation of milling, turning, grinding and special machines.

SINUMERIK MCP 310 PN has, apart from PROFINET functionality, also complete Industrial Ethernet functionality. The network technology can be switched using DIP switches.

Forty-nine keys have user-inscribed slide-in strips for machine-specific adaptations. A DIN A4 sheet (for laser printers) for inscribing the slide-in labels is included in the scope of supply.

A connecting cable is included in the scope of supply for connecting the direct keys of the SINUMERIK operator panel fronts OP 012/OP 015A/TP 015A.

The machine control panel is mounted from the rear using special clamps supplied with the panel.

■ Design

Control elements:
- Mode and function keys
  - 49 keys with LEDs
  - Direction keys for milling machines with rapid traverse override
  - 16 user-labeled standard user keys
- Feed control with feed/rapid traverse override (rotary switch with 23 positions)
- Key switch (4 positions and 3 different keys)

Key type:
- Membrane keys

Interfaces:
- PROFINET/Industrial Ethernet
- 9 inputs/6 outputs for 9 control devices (additional cable set required for control devices)
- For 16 direct keys of the OP 012/OP 015A/TP 015A (connecting cable (850 mm/2.79 ft) included in scope of supply)
- For 2 handwheels

Expansion facilities:
- 6 slots for control devices (d = 16 mm/0.63 in)
- 1 slot for emergency stop button or rotary override switch (up to d = 22 mm/0.87 in)

[1] For length code, see Connection system MOTION-CONNECT.

Operator components for CNC controls
Machine control panels

Integration

The SINUMERIK MCP 310 PN machine control panel can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

Product name	6FC5303-0AF23-1AA1 SINUMERIK MCP 310 PN machine control panel
Input voltage	24 V DC
Power consumption, max.	5 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-20 ... +60 °C (-4 ... +140 °F)
• Transport	-20 ... +60 °C (-4 ... +140 °F)
• Operation	
- Front	0 ... 45 °C (32 ... 113 °F)
- Rear	0 ... 55 °C (32 ... 131 °F)
Distance	100 m (328 ft)
Dimensions	
• Width	310 mm (12.2 in)
• Height	175 mm (6.89 in)
• Depth	54 mm (2.13 in)
Panel cutout	
• Width	285 mm (11.22 in)
• Height	155 mm (6.1 in)
• Tolerance	+ 1 mm (0.04 in)
Weight, approx.	1.2 kg (2.65 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK MCP 310 PN machine control panel PROFINET/Industrial Ethernet Width 310 mm (12.2 in), with membrane keys	**6FC5303-0AF23-1AA1**
Accessories	
Slide-in labels for inscribing 3 A4 sheets	**6FC5248-0AF23-1AA0**
Actuating element, 22 mm (0.87 in) Latching mushroom pushbutton, red and non-illuminated with 40 mm (1.57 in) protection against lifting and tilting, incl. holder	**3SB3000-1HA20**
Contact block with 2 contacts 1 NO + 1 NC, 2-pole screw terminal	**3SB3400-0A**
Key switch with key For SINUMERIK MCP 6FC5303-0AF22-1AA1/ 6FC5303-0AF23-1AA1	**6FC5247-0AF02-0AA0**
Key set (10 sets) For machine control panel	**6FC5148-0AA03-0AA0**
Spindle/rapid traverse override rotary switch 1 × 16G, T = 24, cap, button, pointer, and rapid traverse and spindle dials	**6FC5247-0AF12-1AA0**
Feed/rapid traverse override rotary switch 1 × 23G, T = 32, cap, button, pointer, and rapid traverse and feed dials	**6FC5247-0AF13-1AA0**
Cable set (60 units) For additional control devices of the machine control panels Length: 500 mm (19.69 in)	**6FC5247-0AA35-0AA0**
Signal cable for handwheel connection Length, max.: 25 m (82.03 ft)[1]	**6FX8002-2CP00-….**
Set of clamps (9 units) For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	**6FC5248-0AF14-0AA0**

Example:
16G: Latching at position 16
T = 24: 24 positions for 360°

Ordering data for Ethernet or PROFINET can be found under Industrial Ethernet switches – SCALANCE.

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[1] For length code, see Connection system MOTION-CONNECT.

Operator components for CNC controls
Machine control panels

SINUMERIK MCP 483C PN	SINUMERIK MCP 483 PN

Selection and ordering data

Description	Order No.
SINUMERIK MCP 483C PN machine control panel	**6FC5303-0AF22-0AA1**
PROFINET/Industrial Ethernet, width 19", with mechanical keys, emergency stop 22 mm (0.87 in)	
Accessories	
Square key cover, for labeling	**6FC5248-0AF12-0AA0**
1 set comprising of: 90 × ergo gray, 20 × red, 20 × yellow, 20 × green, 20 × mid-gray	
Square key cover, for labeling	**6FC5248-0AF21-0AA0**
90 × transparent	
Actuating element, 22 mm (0.87 in)	**3SB3000-1HA20**
Latching mushroom pushbutton, red and non-illuminated with 40 mm (1.57 in) protection against lifting and tilting, incl. holder	
Contact block with 2 contacts	**3SB3400-0A**
1 NO + 1 NC, 2-pole screw terminal	
Key set (10 sets)	**6FC5148-0AA03-0AA0**
For machine control panel	
Rapid traverse dial	**6FC5248-0AF30-0AA0**
(1 set = 20 units) for MCP 483C 16-position rotary switch	
Spindle/rapid traverse override rotary switch	**6FC5247-0AF12-1AA0**
1 × 16G, T = 24, cap, button, pointer, and rapid traverse and spindle dials	
Feed/rapid traverse override rotary switch	**6FC5247-0AF13-1AA0**
1 × 23G, T = 32, cap, button, pointer, and rapid traverse and feed dials	
Cable set (60 units)	**6FC5247-0AA35-0AA0**
For additional control devices of the machine control panels Length: 500 mm (19.69 in)	
Set of clamps (9 units)	**6FC5248-0AF14-0AA0**
For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	

Example:
16G: Latching at position 16
T = 24: 24 positions for 360°

Ordering data for Ethernet or PROFINET can be found under Industrial Ethernet switches – SCALANCE.

Overview

The SINUMERIK MCP 483 PN machine control panel with membrane keys is designed to permit user-friendly, well-structured operation of the machine functions. It is suitable for machine-level operation of milling and turning machines, and particularly grinding machines.

SINUMERIK MCP 483 PN has, apart from PROFINET functionality, also complete Industrial Ethernet functionality. The network technology can be switched using DIP switches.

46 keys and both control device slots are equipped with user-inscribed slide-in labels for adapting to specific machines. A DIN A4 sheet (for laser printers) for inscribing the slide-in labels is included in the scope of supply.

A connecting cable is included in the scope of supply for connecting the direct keys of the SINUMERIK operator panel fronts OP 012/OP 015A/TP 015A.

The machine control panel is mounted from the rear using special clamps supplied with the panel.

Design

Control elements:
- Mode and function keys
  - 50 keys with LEDs
  - Direction keys for milling machines with rapid traverse override
  - 17 user-labeled standard user keys
- Spindle control with spindle override (rotary switch with 16 positions)
- Feed control with feed/rapid traverse override (rotary switch with 23 positions)
- Key switch (4 positions and 3 different keys)
- Emergency stop button (2 × (1 NO + 1 NC))

Key type:
- Membrane keys

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Operator components for CNC controls
Machine control panels

SINUMERIK MCP 483 PN

Design (continued)

Interfaces:
- PROFINET/Industrial Ethernet
- 9 inputs/6 outputs for 9 control devices
  (additional cable set required for control devices)
- For 16 direct keys of the OP 012/OP 015A/TP 015A
  (connecting cable (850 mm/2.79 ft) included in scope of supply)
- For 2 handwheels

Expansion facility:
- 2 slots for control devices (*d* = 16 mm/0.63 in)

Integration

The SINUMERIK MCP 483 PN machine control panel can be used for:
- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

	6FC5303-0AF22-1AA1
Product name	SINUMERIK MCP 483 PN machine control panel
Input voltage	24 V DC
Power consumption, max.	5 W
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	
• Storage	5 ... 95 % at 25 °C (77 °F)
• Transport	5 ... 95 % at 25 °C (77 °F)
• Operation	5 ... 85 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-25 ... +55 °C (-13 ... +131 °F)
• Transport	-25 ... +55 °C (-13 ... +131 °F)
• Operation	
- Front	0 ... 45 °C (32 ... 113 °F)
- Rear	0 ... 55 °C (32 ... 131 °F)
Distance	100 m (328 ft)
Dimensions	
• Width	483 mm (19.02 in)
• Height	155 mm (6.1 in)
• Depth	55 mm (2.17 in)
Panel cutout	
• Width	450 mm (17.72 in)
• Height	135 mm (5.31 in)
• Tolerance	+ 1 mm (0.04 in)
Weight, approx.	1.6 kg (3.53 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK MCP 483 PN machine control panel	**6FC5303-0AF22-1AA1**
PROFINET/Industrial Ethernet Width 19", with membrane keys, emergency stop 22 mm (0.87 in)	
Accessories	
Slide-in labels for inscribing	**6FC5248-0AF22-1AA1**
3 A4 sheets	
Actuating element, 22 mm (0.87 in)	**3SB3000-1HA20**
Latching mushroom pushbutton, red and non-illuminated with 40 mm (1.57 in) protection against lifting and tilting, incl. holder	
Contact block with 2 contacts	**3SB3400-0A**
1 NO + 1 NC, 2-pole screw terminal	
Key switch with key	**6FC5247-0AF02-0AA0**
For SINUMERIK MCP 6FC5303-0AF22-1AA1/ 6FC5303-0AF23-1AA1	
Key set (10 sets)	**6FC5148-0AA03-0AA0**
For machine control panel	
Spindle/rapid traverse override rotary switch	**6FC5247-0AF12-1AA0**
1 × 16G, T = 24, cap, button, pointer, and rapid traverse and spindle dials	
Feed/rapid traverse override rotary switch	**6FC5247-0AF13-1AA0**
1 × 23G, T = 32, cap, button, pointer, and rapid traverse and feed dials	
Cable set (60 units)	**6FC5247-0AA35-0AA0**
For additional control devices of the machine control panels Length: 500 mm (19.69 in)	
Signal cable for handwheel connection	**6FX8002-2CP00-....**
Length, max.: 25 m (82.03 ft)[1]	
Set of clamps (9 units)	**6FC5248-0AF14-0AA0**
For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	

Example:
16G: Latching at position 16
T = 24: 24 positions for 360°

Ordering data for Ethernet or PROFINET can be found under Industrial Ethernet switches – SCALANCE.
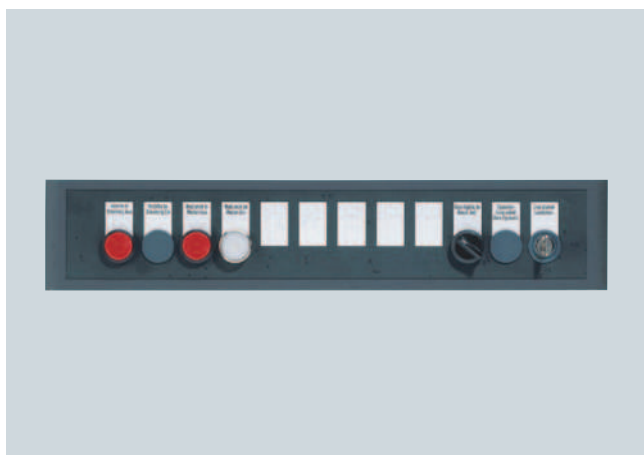
[1] For length code, see Connection system MOTION-CONNECT.

Operator components for CNC controls

Machine control panels

SINUMERIK expansion panel

■ Overview

The SINUMERIK expansion panel is used for the installation of up to 12 additional control elements, e.g. buttons, signaling lights, and key switches as an expansion to a Machine Push Button Panel, a machine control panel or for expansion for the free inputs/outputs of a machine control panel.

The expansion panel provides rounded edges for a uniform design with the SINUMERIK operator panels. Clamp-mounting facilitates installation.

■ Design

The expansion panel is 19" wide, and can accommodate up to twelve 22 mm (0.87 in) control elements of any type.

The 12 slots are pre-punched and can be easily broken out as required. Panels with customized complements can be provided on request.

Inscriptions are made on 2 slide-in labeling strips which are inserted from the rear.

For expansion of control elements, see also special versions of MPP 483/MPP 483 IE.

■ Technical specifications

	6FC5247-0AA43-1AA0
Product name	SINUMERIK expansion panel for MCP 483/MPP 483
Dimensions	
• Width	483 mm (19.02 in)
• Height	95 mm (3.74 in)
• Depth	30 mm (1.18 in)
Panel cutout	
• Width	451 mm (17.76 in)
• Height	78 mm (3.07 in)
Weight, approx.	0.5 kg (1.10 lb)

■ Selection and ordering data

Description	Order No.
SINUMERIK expansion panel for MCP 483/MPP 483 Width 19" with 12 slots for 22 mm (0.87 in) control elements, not equipped Mounted using clamps	**6FC5247-0AA43-1AA0**
Accessories	
Set of clamps (9 units) For operating components with 2.5 mm (0.10 in) profile Length: 20 mm (0.79 in)	**6FC5248-0AF14-0AA0**

Operator components for CNC controls
Keyboards

KBPC CG US standard PC keyboard	Keyboard tray

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Overview

Programs and texts can be edited easily with the compact SINUMERIK KBPC CG US standard PC keyboard.

The standard PC keyboard is not suitable for industrial use (EMC) and should not be used as a permanent installation. It may be used only for servicing and commissioning.

Integration

The KBPC CG US standard PC keyboard can be used for:
- SINUMERIK 840Di sl/840D sl

The standard PC keyboard cannot be used in conjunction with the full CNC keyboard.

Technical specifications

	6FC5203-0AC01-3AA0
Product name	SINUMERIK KBPC CG US standard PC keyboard
Input voltage	5.25 V DC
Power consumption, max.	0.1 W
Degree of protection according to EN 60529 (IEC 60529)	IP20
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Ambient temperature	
• Storage	-20 … +60 °C (-4 ... +140 °F)
• Transport	-20 … +60 °C (-4 ... +140 °F)
• Operation	0 … 50 °C (32 ... 122 °F)
Dimensions	
• Width	405 mm (15.94 in)
• Height	44 mm (1.73 in)
• Depth	180 mm (7.09 in)
Weight, approx.	1.3 kg (2.87 lb)

Selection and ordering data

Description	Order No.
SINUMERIK KBPC CG US standard PC keyboard	**6FC5203-0AC01-3AA0**
MF-II compatible, 104 key layout, connection: USB, incl. connecting cable, length: 1.7 m (5.58 ft)	

Overview

This extremely stable 19" keyboard tray in anthracite facilitates your work when using a standard external keyboard with an operator panel.

Special screws permit easy attachment of the keyboard tray, and equally easy removal after the work is finished.

If required, a version with an additional removable tray for a mouse is also available.

Technical specifications

	6FC5247-0AA40-0AA0
Product name	Keyboard tray
Dimensions	
• Width	487 mm (19.17 in)
• Depth	196 mm (7.72 in)
Weight, approx.	1.6 kg (3.53 lb)

Selection and ordering data

Description	Order No.
Keyboard tray	**6FC5247-0AA40-0AA0**
For keyboard, incl. 2 collar screws	