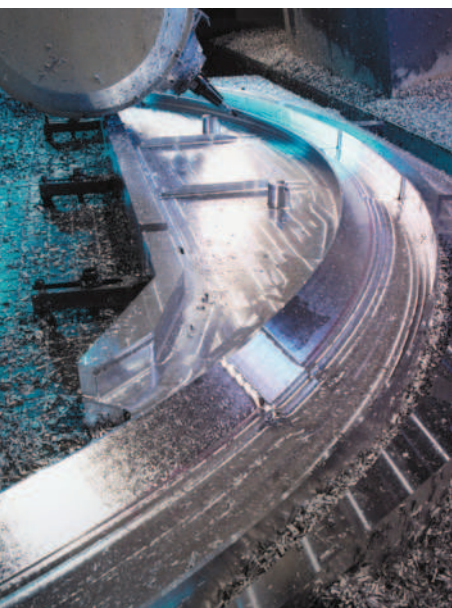


Operator components for CNC controls



3/2

General

Introduction

3/4

Operator panels

3/4

SINUMERIK OP 08T

3/5

SINUMERIK OP 010

3/6

SINUMERIK OP 010S

3/7

SINUMERIK OP 010C

3/8

SINUMERIK OP 012

3/9

SINUMERIK OP 015

3/10

SINUMERIK OP 015A

3/11

SINUMERIK OP 015AT

3/12

SINUMERIK TP 015A

3/13

SINUMERIK TP 015AT

3/14

SINUMERIK direct key module

3/15

SINUMERIK PCU 50.3

3/18

SINUMERIK TCU

3/20

Handheld units

3/20

SINUMERIK HT 2

3/22

SINUMERIK HT 8

3/24

Handheld unit type B-MPI

3/25

Mini handheld unit

3/26

Electronic handwheel

3/28

Handwheel connection module

3/29

Machine control panels

3/29

SINUMERIK MCP 310C PN

3/30

SINUMERIK MCP 310 PN

3/32

SINUMERIK MCP 483C PN

3/33

SINUMERIK MCP 483 PN

3/35

SINUMERIK MPP 310 IEH

3/36

SINUMERIK MPP 483

3/38

SINUMERIK MPP 483 IE

3/40

SINUMERIK expansion panel

3/41

SIRIUS 3SB3

3/41

Laser inscription

3/42

Keyboards

3/42

KBPC CG US standard PC keyboard

3/42

Keyboard tray

3/43

SINUMERIK KB 310C

3/44

SINUMERIK KB 483C

3/45

Dyna Systems full CNC keyboard

3/46

Storage devices

3/46

SINUMERIK card reader USB 2.0

3/47

CompactFlash Card

3/48

Industrial USB Hub 4

3/49

SIMATIC PC USB FlashDrive

3/50

SINUMERIK 3.5" floppy disk drive, USB 1.1

3/51

Industrial switches

3/51

Industrial Ethernet switches – SCALANCE

3/53

Housing systems

3/53

Rittal command panel systems

3/54

ROSE Systemtechnik GmbH

Part 11

CAD CREATOR

Dimension drawing and 2D/3D CAD generator

www.siemens.com/cadcreator

Operator components for CNC controls

General

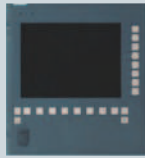
Introduction



SIEMENS SINUMERIK OP 08T



SIEMENS SINUMERIK OP 010



SIEMENS SINUMERIK OP 010S



SIEMENS SINUMERIK OP 010C



SIEMENS SINUMERIK OP 012



SIEMENS SINUMERIK OP 015

SIEMENS SINUMERIK OP 015A/OP 015AT/
TP 015A/TP 015AT

SIEMENS SINUMERIK TCU



SIEMENS SINUMERIK PCU 50.3

P_NC01_XX_00693c

SINUMERIK operator panel fronts with PCU/TCU

The SINUMERIK operator panel fronts (OP) and touch operator panels (TP) can be combined with SINUMERIK PCUs (industrial PCs) or SINUMERIK Thin Client Units (TCU) and contain numerous innovations to improve ease of operation.

The USB interface on the panel front provides hot plug&play functionality for a standard PC keyboard, mouse and/or USB FlashDrive. The SINUMERIK operator panel fronts are available with displays in a variety of sizes, and with membrane or mechanical keyboards.

Thus the SINUMERIK operator panel fronts can be tailored to the individual user's requirements.

SINUMERIK PCUs

With the SINUMERIK PCUs and the SINUMERIK operator panel fronts, innovative operator panels can be created. The SINUMERIK PCUs are mounted on the rear of the SINUMERIK operator panel fronts, or they can be positioned at distances up to 100 m (328 ft) from the operator panel in the cabinet.

The powerful SINUMERIK PCUs contain numerous innovations. The communication interfaces via Ethernet and PROFIBUS DP are already on board.

The complementary proven operator control components, such as handheld units, machine control panels, Push Button Panels, electronic handwheels, keyboards, and card readers can be used with the SINUMERIK PCUs/TCUs.

SINUMERIK TCU

The SINUMERIK Thin Client Unit (TCU) allows operator panel fronts and the SINUMERIK PCUs/NCUs to be installed separately. For this reason, the user interface is copied to one or several operator panel fronts, each with a SINUMERIK TCU.

Operator panels

An operator panel comprises a SINUMERIK PCU (large-scale integrated industrial PC) and a SINUMERIK operator panel front, which is available with various performance levels or various display sizes.

The displays comply with the quality standards relating to the pixel error class defined by ISO standard 13406-2, class 2.

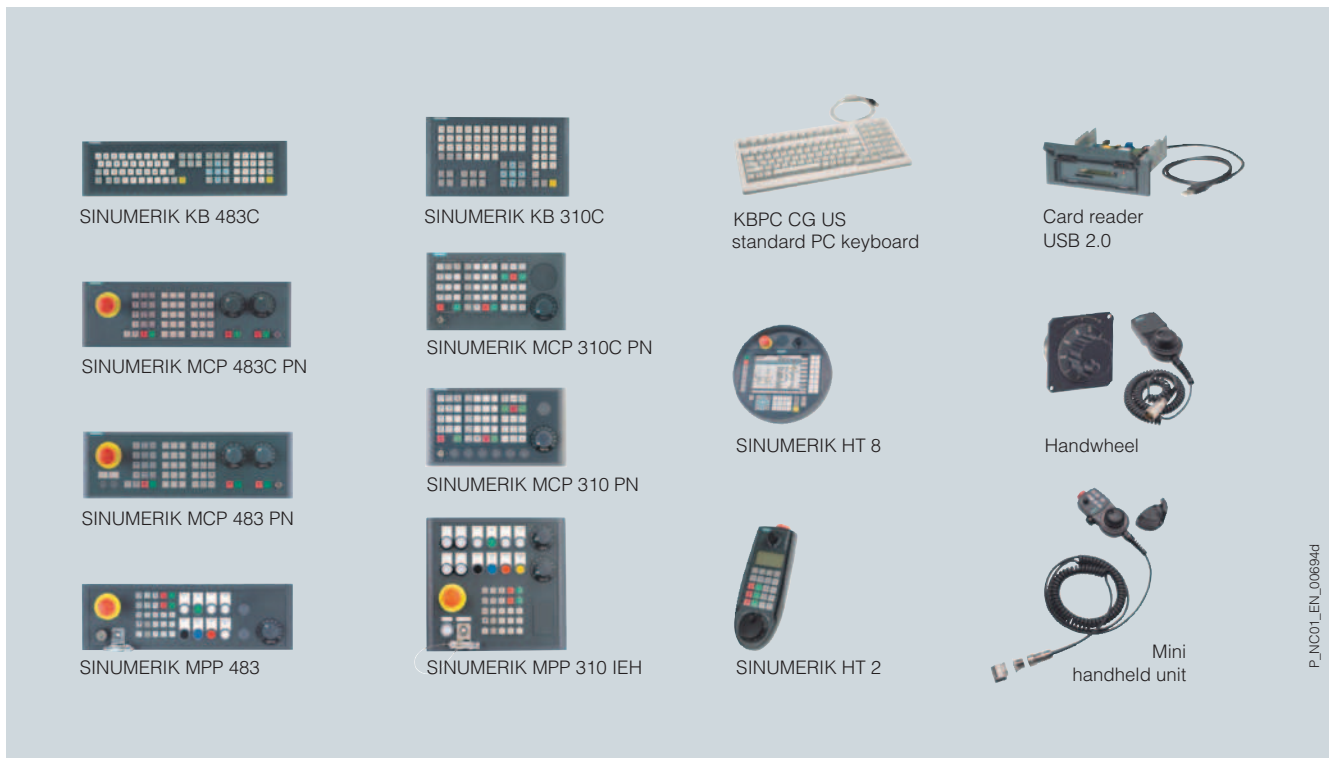
Benefits

- Intelligent, rugged operator panels that have an impressively low-profile and compact design
- Individual design of your user interface, using your expertise by means of openness in human-machine communication
- Distributed design due to physical separation of PCU and operator panel front

Application

The operator panels are predominantly used for visualization and for the operation of machine tools. They are particularly suitable for milling, turning, grinding and special-purpose machines.

For further information on applications, refer to the section [Operation in the Overview of functions](#).



Handheld units

The SINUMERIK handheld units are available with a variety of performance options. Ergonomic handheld units are also available. They can be used as mobile machine control panels or even as an additional main operator panel.

Benefits

- Ergonomic machine control thanks to carefully designed housing
- Setup and operation of simple machines with the mini handheld unit, especially as part of JobShop or similar applications
- Setup, operation, teaching and programming of user programs with the multifunctional handheld terminals

Machine control panels

Machine control panels, Push Button Panels and handwheels are available for the user-friendly operation of the machine functions of SINUMERIK and PLC-controlled machines.

Benefits

- Ergonomic machine control thanks to sophisticated design
- Machine-specific adaptations by means of variable labeling and control devices that can additionally be integrated

Keyboards

The keyboards allow convenient and user-friendly input of programs and texts.

Benefits

- Ergonomic keyboard
- CNC-specific supplements

Storage devices

Storage devices are used for archiving user data.

Housing systems

Housing systems can be manufactured to precise dimensions and ready to install for numerous combinations of SINUMERIK operating components.

Benefits

Optimized mounting of SINUMERIK CNCs with:

- Operator panel
- Full CNC keyboard
- Machine control panel
- Machine Push Button Panel

Operator components for CNC controls

Operator panels

SINUMERIK OP 08T

Overview



The extremely compact SINUMERIK OP 08T operator panel front supports the distributed installation of the operator panel front and control. The SINUMERIK OP 08T operator panel front contains a membrane keyboard with 65 keys (layout as SINUMERIK KB 310C full CNC keyboard), as well as 2 × (8 + 2) horizontal and 2 × 8 vertical softkeys.

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

Benefits

- Design of compact operator panels through shallow installation depth/reduced size 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 08T 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:

- 2 × USB 1.1
- 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 an SINUMERIK OP 08T 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 08T 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.

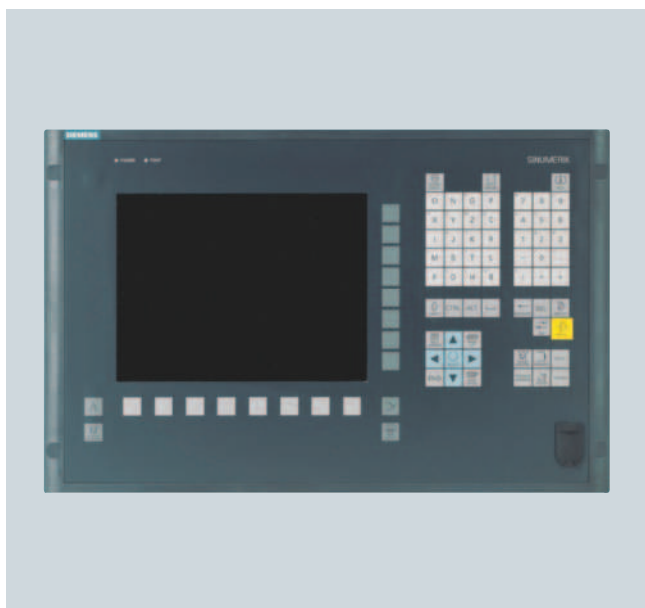
Technical specifications

Product name	6FC5203-0AF04-1BA0 SINUMERIK OP 08T operator panel front
Input voltage	24 V DC
Power consumption, max.	15 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage/Transport 5 ... 95 % at 25 °C (77 °F) • Operation 5 ... 80 % at 25 °C (77 °F)
Ambient temperature	<ul style="list-style-type: none"> • Storage/Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 310 mm (12.2 in) • Height 330 mm (12.99 in) • Depth 41 mm (1.61 in) Panel cutout <ul style="list-style-type: none"> • Width × Height 285 mm × 304 mm (11.22 in × 11.97 in)
Weight, approx.	2.9 kg (6.39 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 08T operator panel front 19.1 cm/7.5" TFT (640 × 480) with membrane keys and integral TCU	6FC5203-0AF04-1BA0
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 08T	6FC5248-0AF04-1BA0
Sealing caps (5 units) For the USB port	6FC5248-0AF05-0BA0
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

Overview



The SINUMERIK OP 010 operator panel front with 10.4" TFT color display with a resolution of 640 × 480 pixels (VGA) features a 62-key membrane keypad with 8 + 4 horizontal and 8 vertical softkeys that has been optimized for programming part programs.

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

Benefits

- Low-cost operator control and monitoring thanks to 10" display with optimized keyboard

Integration

The SINUMERIK operator panel front OP 010 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

Technical specifications

Product name	6FC5203-0AF00-0AA1 SINUMERIK OP 010 operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	16 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Storage -20 ... +60 °C (-4 ... +140 °F) Transport -20 ... +60 °C (-4 ... +140 °F) Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> Width 483 mm (19.02 in) Height 310 mm (12.2 in) Depth 30 mm (1.18 in)
Depth	
<ul style="list-style-type: none">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

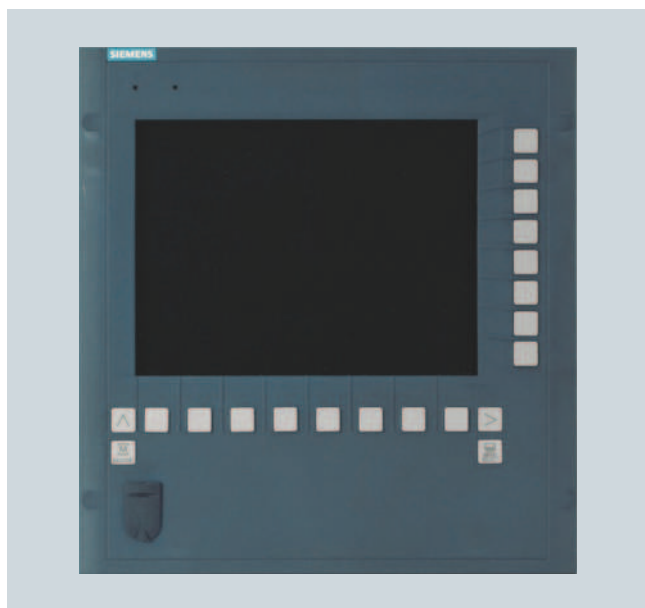
Description	Order No.
SINUMERIK OP 010 operator panel front 26.4 cm/10.4" TFT (640 × 480) with membrane keys	6FC5203-0AF00-0AA1
Accessories	
Slide-in labels for inscribing 3 A4 sheets for SINUMERIK OP 010	6FC5248-0AF07-0AA0
Sealing caps (10 units) For the USB port	6FC5248-0AF05-0AA0
Set of clamps (6 units)	6FC5248-0AF06-0AA0

Operator components for CNC controls

Operator panels

SINUMERIK OP 010S

Overview



The slimline SINUMERIK OP 010S operator panel front with 10.4" TFT color display with a resolution of 640 × 480 pixels (VGA) features 8 + 4 horizontal and 8 vertical mechanical softkeys.

The SINUMERIK full CNC keyboard is suitable as the input keyboard.

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

Benefits

- Space-saving operator control and monitoring
- Ergonomic and reliable operation thanks to the SINUMERIK KB 310C full CNC keyboard

Integration

The SINUMERIK operator panel front OP 010S 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

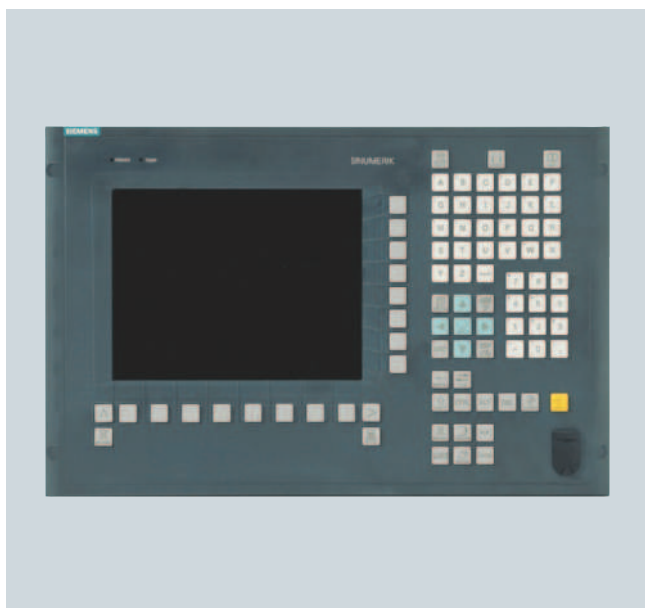
Technical specifications

Product name	6FC5203-0AF04-0AA0 SINUMERIK OP 010S operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	16 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 310 mm (12.2 in) • Height 330 mm (12.99 in) • Depth 45 mm (1.77 in) <p>Depth</p> <ul style="list-style-type: none"> • Without PCU 35 mm (1.38 in) • With PCU 50.3 123.2 mm (4.85 in) - Clearance 10 mm (0.39 in)
Weight, approx.	5.5 kg (12.1 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 010S operator panel front 26.4 cm/10.4" TFT (640 × 480) with mechanical keys	6FC5203-0AF04-0AA0
Accessories	
Sealing caps (10 units) For the USB port	6FC5248-0AF05-0AA0
Set of clamps (6 units)	6FC5248-0AF06-0AA0

Overview



The SINUMERIK OP 010C operator panel front with 10.4" TFT color display with a resolution of 640 × 480 pixels (VGA) features a 65-key mechanical keypad with 8 + 4 horizontal and 8 vertical softkeys.

The 6 hotkeys are designed with replaceable key covers for machine-specific adaptation. The key covers can be freely inscribed using laser.

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

Benefits

- Easy, reliable operator control and monitoring thanks to the integral keyboard with mechanical keys
- Fast selection of the main functions using the 6 integral hotkeys

Integration

The SINUMERIK operator panel front OP 010C 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

Technical specifications

Product name	6FC5203-0AF01-0AA0 SINUMERIK OP 010C operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	16 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 310 mm (12.2 in) • Depth 30 mm (1.18 in) <p>Depth</p> <ul style="list-style-type: none"> • Without PCU 20 mm (0.79 in) • With PCU 50.3 108.2 mm (4.26 in) - Clearance 10 mm (0.39 in)
Weight, approx.	5 kg (11.0 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 010C operator panel front 26.4 cm/10.4" TFT (640 × 480) with mechanical keys	6FC5203-0AF01-0AA0
Accessories	
Square key cover, for inscribing 1 set comprising of: 90 × ergo gray, 20 × red, 20 × yellow, 20 × green, 20 × mid-gray	6FC5248-0AF12-0AA0
Sealing caps (10 units) For the USB port	6FC5248-0AF05-0AA0
Set of clamps (6 units)	6FC5248-0AF06-0AA0

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)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -20 ... +60 °C (-4 ... +140 °F) • Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 310 mm (12.2 in) • Depth 30 mm (1.18 in) <p>Depth</p> <ul style="list-style-type: none"> • 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

Overview



The SINUMERIK OP 015 operator panel front with 15" TFT color display with a resolution of 1024 × 768 pixels (XGA) features 8 + 4 horizontal and 8 vertical membrane softkeys.

The SINUMERIK KB 483C full CNC keyboard is suitable as the input keyboard.

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 brilliant 15" display
- Ergonomic and reliable operation thanks to the optional SINUMERIK KB 483C full CNC keyboard

Integration

The SINUMERIK operator panel front OP 015 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

Technical specifications

Product name	6FC5203-0AF03-0AA0 SINUMERIK OP 015 operator panel front
Input voltage	Via PCU, TCU or video link receiver (5 V DC)
Power consumption, max.	24 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -20 ... +60 °C (-4 ... +140 °F) • Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 310 mm (12.2 in) • Depth 52 mm (2.05 in) <p>Depth</p> <ul style="list-style-type: none"> • Without PCU 42 mm (1.65 in) • With PCU 50.3 130.2 mm (5.13 in) - Clearance 10 mm (0.39 in)
Weight, approx.	7 kg (15.4 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK OP 015 operator panel front 38.3 cm/15.1" TFT (1024 × 768) with membrane keys	6FC5203-0AF03-0AA0
Accessories	
Sealing caps (10 units) For the USB port	6FC5248-0AF05-0AA0
Set of clamps (6 units)	6FC5248-0AF06-0AA0

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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Storage: -20 ... +60 °C (-4 ... +140 °F) Transport: -20 ... +60 °C (-4 ... +140 °F) Operation: <ul style="list-style-type: none"> - Front: 0 ... 45 °C (32 ... 113 °F) - Rear: 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> Width: 483 mm (19.02 in) Height: 355 mm (13.98 in) Depth: 53 mm (2.09 in)
Depth	<ul style="list-style-type: none"> Without PCU: 42 mm (1.65 in) With PCU 50.3 - Clearance: 127 mm (5.00 in) 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

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 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

Product name	6FC5203-0AF05-1AB0 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)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage/Transport: 5 ... 95 % at 25 °C (77 °F) • Operation: 5 ... 80 % at 25 °C (77 °F)
Ambient temperature	<ul style="list-style-type: none"> • Storage/Transport: -20 ... +60 °C (-4 ... +140 °F) • Operation: <ul style="list-style-type: none"> - Front: 0 ... 45 °C (32 ... 113 °F) - Rear: 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • 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 38 cm/15" TFT (1024 × 768) with membrane keys and integral TCU	6FC5203-0AF05-1AB0
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 TP 015A

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

Product name	6FC5203-0AF08-0AB2 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Storage/Transport 5 ... 95 % at 25 °C (77 °F) Operation 5 ... 80 % at 25 °C (77 °F)
Ambient temperature	<ul style="list-style-type: none"> Storage/Transport -20 ... +60 °C (-4 ... +140 °F) Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> Width 483 mm (19.02 in) Height 355 mm (13.98 in) Depth 53 mm (2.09 in)
Depth	
<ul style="list-style-type: none"> 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

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 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

Product name	6FC5203-0AF08-1AB2 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)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage/Transport 5 ... 95 % at 25 °C (77 °F) • Operation 5 ... 80 % at 25 °C (77 °F)
Ambient temperature	<ul style="list-style-type: none"> • Storage/Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • 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

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

Product name	6FC5247-0AF11-0AA0 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	6FC5247-0AF11-0AA0
With mounting kit for SINUMERIK OP 012	
Direct key module mounting kit	6FC5247-0AF30-0AA0
For SINUMERIK OP 015A/TP 015A	

Overview



The high-performance SINUMERIK PCU 50.3 features onboard interfaces for communication via Ethernet, MPI and PROFIBUS DP, leaving the integrated slots free for other cards.

The SINUMERIK PCU 50.3 comes equipped with the Windows XP ProEmbSys operating system and, for backing up and restoring data, the Ghost data backup software.

The operating software can be ordered additionally.

The SINUMERIK Service Pack Recovery Media WIN XP ProEmbSys is available for the PCU with Windows XP ProEmbSys for reinstalling Windows software components and for restoring the delivery status.

Benefits

- High performance and energy efficiency thanks to Intel Mobile processor technology
- Reliable operation due to monitoring of temperature, hard disk and fan
- Service-friendly thanks to the support of a USB boot device, for example, for booting USB flash drives, USB floppy or USB hard disks

Design

- Intel Mobile processor technology
 - PCU 50.3-C: Intel Celeron M Mobile processor 1.5 GHz/512 MB/1 MB L2 Cache/400 MHz FSB
 - PCU 50.3-P: Intel Pentium M Mobile processor 2.0 GHz/1 GB/2 MB L2 Cache/533 MHz FSB
- 40 GB replaceable hard disk with transport mechanism: 12 GB for applications (HMI-Advanced, MCIS software) and data (part programs, documentation, other data) 15 GB for local backups and software to be installed
- Max. memory configuration 2 GB incl. graphics memory on 2 memory module slots
- Integrated 2D/3D graphics; dynamic graphics memory (8 to 96 MB); the graphics memory is taken from the main memory.
- Windows XP ProEmbSys operating system
- Data backup/restore using the Ghost data backup software
- Ports:
 - 2 × Ethernet 10/100 Mbit/s (RJ45)
 - 4 × USB 2.0
 - 1 × PROFIBUS/MPI interface
 - 1 × COM1 (RS 232 C)
- Expansion slots:
 - 2 × PCI (1 × 265 mm (10.43 in), 1 × 175 mm (6.89 in))
 - 1 × CompactFlash Card

Technical specifications

Product name	6FC5210-0DF31-2AA0 SINUMERIK PCU 50.3-C	6FC5210-0DF33-2AA0 SINUMERIK PCU 50.3-P
Processor	Intel Celeron M	Intel Pentium M
RAM	512 MB SDRAM	1 GB SDRAM
Input voltage	24 V DC	
Power consumption, max.	190 W	
Mains buffering time	20 ms	
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/Transport	5 ... 95 % at 25 °C (77 °F)	
• Operation	10 ... 80 % at 25 °C (77 °F)	
Ambient temperature		
• Storage/Transport	-20 ... +60 °C (-4 ... +140 °F)	
• Operation		
- Max. 15 W for expansions	5 ... 55 °C (41 ... 131 °F)	
- Max. 20 W for expansions	5 ... 50 °C (41 ... 122 °F)	
- Max. 30 W for expansions	5 ... 45 °C (41 ... 113 °F)	
Dimensions		
• Width	297 mm (11.69 in)	
• Height	267 mm (10.51 in)	
• Depth	81.7 mm (3.22 in)	
Weight, approx.	6 kg (13.23 lb)	
Approvals, according to	cULus	

Operator components for CNC controls

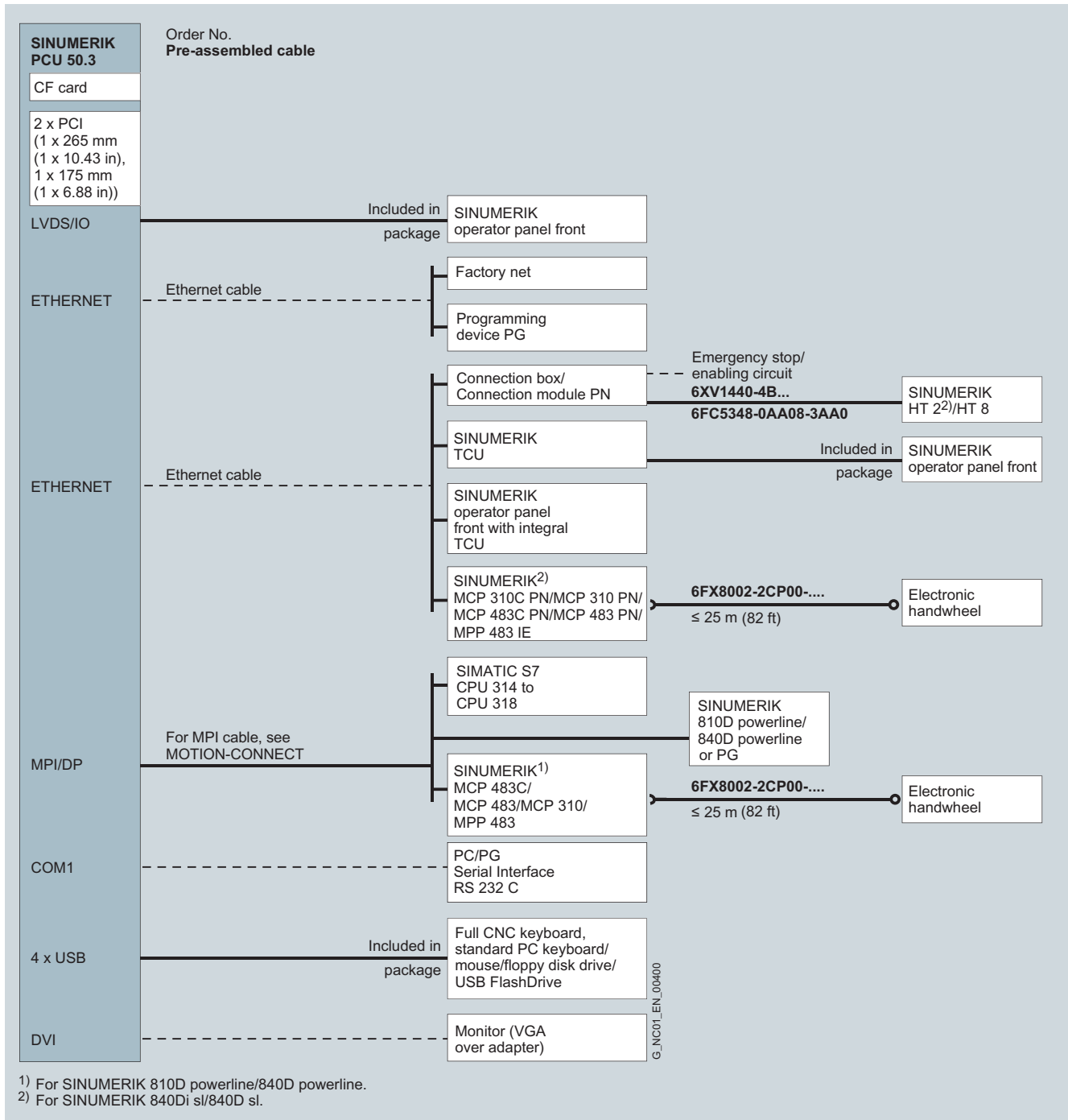
Operator panels

SINUMERIK PCU 50.3

Integration

The SINUMERIK PCU 50.3 can be used for:

- SINUMERIK 840Di sl/840D sl
(operating software HMI-Advanced version 7.1 or higher and
operating software SINUMERIK Operate version 2.6 or higher)



Connection overview for SINUMERIK PCU 50.3

Information about application, configuration and cable extensions can be found under Connection system MOTION-CONNECT.

Selection and ordering data

Description	Order No.
SINUMERIK PCU 50.3-C 1.5 GHz/1 × 512 MB, Windows XP ProEmbSys	6FC5210-0DF31-2AA0
SINUMERIK PCU 50.3-P 2.0 GHz/1 × 1 GB, Windows XP ProEmbSys	6FC5210-0DF33-2AA0
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 • Single license for specific software version	6FC5253-0BX10-0AF0 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 • Single license for specific software version	6FC5860-1YF00-0YA0 6FC5860-1YF2■-■YA0

Description	Order No.
Accessories	
Hard disk, 40 GB For SINUMERIK PCU 50.3 with support plate and damper (included in scope of supply of the SINUMERIK PCU 50.3)	6FC5247-0AF08-4AA0
Memory expansion For SINUMERIK PCU 50.3 • 512 Mbyte • 1 GB	6ES7648-2AG30-0GA0 6ES7648-2AG40-0GA0
Mounting bracket For SINUMERIK PCU, video link receiver or TCU behind operator panel front	6FC5248-0AF20-2AA0
1 GB CompactFlash Card Empty	6FC5313-5AG00-0AA0
SIMATIC PC USB FlashDrive²⁾ 2 GB, USB 2.0, metal enclosure, boot capability, incl. SIMATIC PC BIOS Manager	6ES7648-0DC40-0AA0
SINUMERIK Service Pack Recovery Media WIN XP ProEmbSys 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)	6FC5253-8CX10-6XU8
PCI interface card 2 × COM, 2 × LPT For SINUMERIK PCU 50.3 (occupies 1 to 2 PCI expansion slots)	6ES7648-2CA01-0AA0

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

Operator panels

SINUMERIK TCU

Overview



The SINUMERIK Thin Client Unit TCU for distributed installation permits physical separation of operator panel fronts and SINUMERIK PCU/NCU or SIMOTION P350-3. For this purpose, the operator interface is copied to one/several operator panel fronts with one SINUMERIK TCU each.

Benefits

- Design of flat operator panels through the shallow installation depth and low power dissipation.
- Low-vibration installation of the PCU in the control cabinet
- Efficient operation of larger machines using up to 5 uniform operator panels simultaneously (of which 4 are thin clients).
- Effective operation of chained machines: more than 4 thin client units can be connected, if necessary

Design

The SINUMERIK TCUs are coupled via Industrial Ethernet as Thin Clients in a dedicated subnetwork via DHCP server on the PCU/NCU.

- Graphics: Resolution 640 × 480 to 1024 × 768, 16-bit color depth

Ports:

- 2 × USB 1.1 for connection of mouse and keyboard
- Industrial Ethernet 10/100 Mbit/s

Function

- Signal transmission between SINUMERIK PCU/NCU/SIMOTION P350-3 and operator panel front via Industrial Ethernet
- Easy installation and service-friendly layout thanks to the component structure
- Functionality of the SINUMERIK PCU/SIMOTION P350-3 as in centralized configuration (e.g. number of PCI slots). The same operating screen is shown synchronously on all operator panel fronts and can be used from all panel fronts. Operation on a Thin Client has the same authorization rights as operation on an operator panel front connected directly to the SINUMERIK PCU/SIMOTION P350-3. The operator panel in passive mode shows a darkened screen.

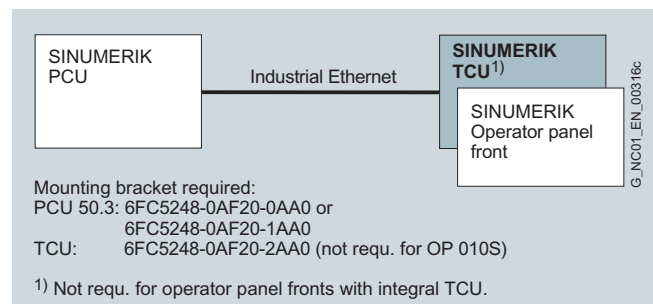
Function (continued)

- Operation is possible on the active operator panel. An enabling function permits a passive operator panel to request operation.
- The combined operation of operator panel fronts on a SINUMERIK TCU or with an integral TCU and an operator panel front directly connected to the SINUMERIK PCU/SIMOTION P350-3 is possible.
- The distance to the operator panel fronts is determined by the maximum distance between two network nodes/access points (100 m/328 ft).

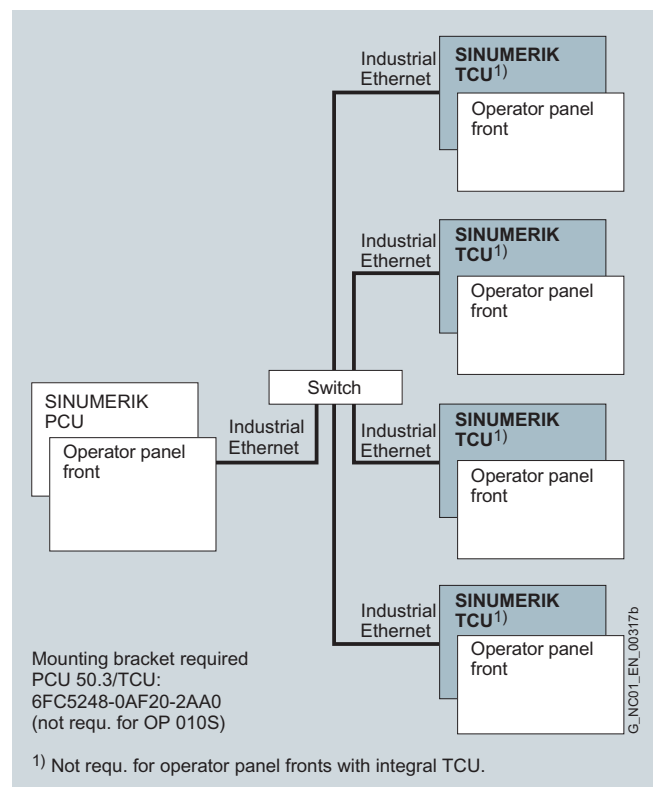
Integration

The SINUMERIK TCU can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl:
Operator panel fronts OP 010/OP 010C/OP 010S/OP 012/OP 015/OP 015A/TP 015A with TFT display on NCU 710.2/NCU 720.2/NCU 730.2 PN/NCU 730.2 PN, SINUMERIK PCU 50.3



Connection overview for SINUMERIK TCU without central OP on PCU



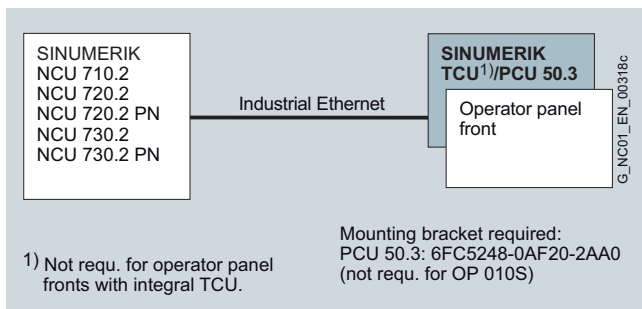
Connection overview for SINUMERIK TCU with central OP on PCU

Operator components for CNC controls

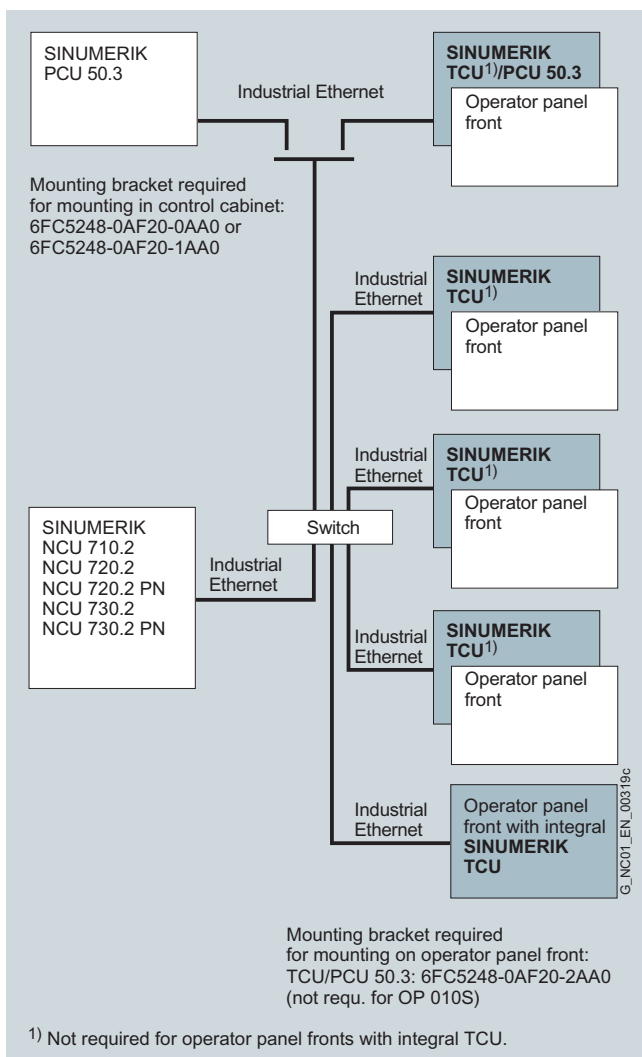
Operator panels

SINUMERIK TCU

Integration (continued)



Connection overview for SINUMERIK TCU on NCU 710.2/NCU 720.2/NCU 720.2 PN/NCU 730.2/NCU 730.2 PN



Connection overview for SINUMERIK TCU with several TCUs on NCU 710.2/NCU 720.2/NCU 720.2 PN/NCU 730.2/NCU 730.2 PN

Technical specifications

Product name	6FC5312-0DA00-0AA1 SINUMERIK Thin Client Unit TCU
Input voltage	24 V DC
Power consumption, max.	36 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 ... 80 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-25 ... +55 °C (-13 ... +131 °F)
• Transport	-25 ... +55 °C (-13 ... +131 °F)
• Operation	0 ... 55 °C (32 ... 131 °F)
Dimensions	
• Width	260 mm (10.24 in)
• Height	265 mm (10.43 in)
• Depth	40 mm (1.57 in)
Weight, approx.	1.7 kg (3.75 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK Thin Client Unit TCU	6FC5312-0DA00-0AA1
Accessories	
Mounting bracket flat For SINUMERIK PCU with/without video link transmitter in control cabinet	6FC5248-0AF20-0AA0
Upright mounting bracket For SINUMERIK PCU 50.3 with/without video link transmitter in control cabinet	6FC5248-0AF20-1AA0
Mounting bracket For SINUMERIK PCU, video link receiver or SINUMERIK TCU behind operator panel front	6FC5248-0AF20-2AA0

Ordering data for the SCALANCE industrial switches and the Industrial Ethernet FC TP Standard/Trailing Cable can be found under [Industrial switches – SCALANCE](#).

More information

Information on the SIMATIC NET components such as the Industrial Ethernet Electrical Lean Switches SCALANCE and the Industrial Ethernet FC TP Standard/Trailing Cable can be found in the IK PI Catalog or Siemens Industry Mall.

www.siemens.com/industrymall

Operator components for CNC controls

Handheld units

SINUMERIK HT 2

Overview



The mobile SINUMERIK HT 2 handheld terminal is suitable for manually operating machine tools, e.g. for performing axis feed movements.

Benefits

- Mobility for operator control and monitoring
- 2 enabling buttons for right-handed or left-handed operators
- Easy hot swapping during operation (hot plug and play), without triggering the emergency stop in combination with the PN Plus connection box without an additional, manual actuating element/key switch
- Insertion and removal during operation without triggering of emergency stop for basic variants requires manual actuating element/key switch and terminating plug
- Rugged, light, and ergonomically designed
- Intuitive axis feed thanks to rugged, magnetic handwheel
- All keys can be freely configured and inscribed by the user (default key assignment preconfigured on shipped units)
- Slide-in labels for inscribing (accessory)
- Flexible storage by means of magnetic clamp or holder (accessory)
- Easily replaceable signal cables, without special tools (accessories)

Application

The SINUMERIK HT 2 is designed to allow manual operation of machine tools in any situation where the operator needs to be mobile, e.g. during setup procedures. It has been developed specifically with easy handling, ruggedness, and practical suitability in mind. The SINUMERIK HT 2 fits seamlessly into the operator component landscape.

Design

The SINUMERIK HT 2 is connected via the PN Basic/PN Plus connection box at any installation location in the plant, or to the PN Basic connection module for installation in the control cabinet.

Control elements:

- 20 keys, all can be freely assigned and inscribed by the user
- Emergency stop button, 2-channel, three-step
- 2 enabling buttons (for right-handed and left-handed operators), 3-step, 2-channel
- Override rotary button
- Magnetic handwheel
- Key switch (3 positions, 2 keys)

Key type:

- Membrane keys

Interfaces:

- Connecting cable to PN Basic/PN Plus connection box, PN Basic connection module

Display:

- 4-line display (128 × 64 pixels)

Function

The easily accessible control elements, ergonomic design and light weight make this unit easy to use, even over long work shifts. Protection class IP65, rubber grips and magnetic handwheel are proof of its practical suitability even when production conditions are hard. The key assignments match those on the earlier model of handheld unit, type B-MPI, making it easy to switch from one version to the next. The keys can be freely assigned and inscribed as required.

The PN Plus connection box provides hot swapping (insert or remove during operation).

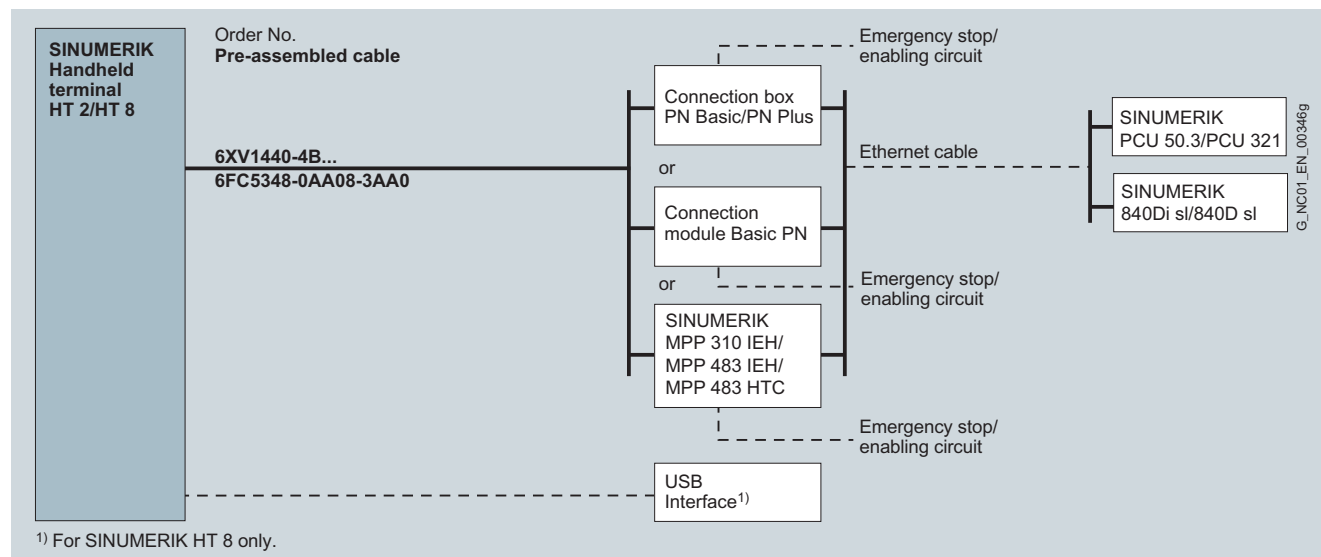
Technical specifications

Product name	6FC5303-0AA00-2AA0 SINUMERIK HT 2 Handheld Terminal
Input voltage	24 V DC
Power consumption, max.	2.5 W
Degree of protection according to EN 60529 (IEC 60529)	IP65
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 ... 65 % at 25 °C (77 °F)
Ambient temperature	
• Storage	-25 ... +60 °C (-13 ... +140 °F)
• Transport	-25 ... +60 °C (-13 ... +140 °F)
• Operation	0 ... 50 °C (32 ... 122 °F)
Dimensions	
• Width	255 mm (10.04 in)
• Height (without control elements)	100 mm (3.94 in)
• Depth (without control elements)	76.2 mm (3.00 in)
Weight, approx.	0.69 kg (1.52 lb)
Approvals, according to	cULus

Integration

The SINUMERIK HT 2 handheld terminal 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



Connection overview for SINUMERIK HT 2

Information about application, configuration and cable extensions can be found under Connection system MOTION-CONNECT.

Selection and ordering data

Description	Order No.
SINUMERIK HT 2 handheld terminal	6FC5303-0AA00-2AA0
Accessories	
Connection box PN Basic IP65 degree of protection Without automatic emergency stop override for mounting in the system	6AV6671-5AE01-0AX0
Connection box PN Plus IP65 degree of protection With automatic emergency stop override for mounting in the system	6AV6671-5AE11-0AX0
Connection module Basic PN Without automatic emergency stop override for mounting in the control cabinet, complete with terminating plug	6FC5303-0AA01-1AA0
Magnetic clamp For SINUMERIK HT 2	6FC5348-0AA08-0AA0
Holder For SINUMERIK HT 2	6FC5348-0AA08-1AA0
Slide-in labels for inscribing 3 A4 sheets, for SINUMERIK HT 2	6FC5348-0AA08-2AA0
Key set For SINUMERIK HT 2	6AV6574-1AG04-4AA0

Description	Order No.
Accessories (continued)	
Signal cable	
For mobile panels	
• Length: 2 m (6.56 ft)	6XV1440-4BH20
• Length: 5 m (16.41 ft)	6XV1440-4BH50
• Length: 8 m (26.25 ft)	6XV1440-4BH80
• Length: 10 m (32.81 ft)	6XV1440-4BN10
• Length: 15 m (49.22 ft)	6XV1440-4BN15
• Length: 20 m (65.62 ft)	6XV1440-4BN20
• Length: 25 m (82.03 ft)	6XV1440-4BN25
Coiled connecting cable For SINUMERIK HT 2/HT 8 Length: 1.5 m (4.92 ft), stretches to 3.5 m (11.48 ft)	6FC5348-0AA08-3AA0

Operator components for CNC controls

Handheld units

SINUMERIK HT 8

Overview



The mobile SINUMERIK HT 8 handheld terminal combines the functions of an operator panel and a machine control panel in a single device, permitting complete operator control and monitoring of machines. It can be used as a supplementary main operator panel or as a secondary control panel.

The supplied touch pen with a holding loop permits easy operation of the touch screen even when wearing gloves. The safety system is designed to allow personnel to work in the machine's hazard zone.

Benefits

- Mobility for operator control and monitoring
- Pixel-graphics 7.5" TFT color display
- Operation via touch screen, membrane keys and touch pen
- Emergency stop button and 2 enabling buttons for left-handed and right-handed operators
- Easy hot swapping during operation (hot plug and play), without triggering the emergency stop in combination with the PN Plus connection box without an additional, manual actuating element/key switch
- Insertion and removal during operation without triggering of emergency stop for basic variants requires manual actuating element/key switch and terminating plug
- Rugged, compact and ergonomically designed
- Easily replaceable signal cables, without special tools (accessories)

Design

The emergency stop button and the 2 enabling buttons (3-step) each have two channels.

Possible connections for SINUMERIK HT 8:

- In the control cabinet via the Basic PN connection module
- At any preferred mounting location in the plant via the PN Plus connection box

Function

The SINUMERIK HT 8 operates according to the Thin Client principle. The operator software is installed on a SINUMERIK NCU/PCU. An Ethernet link is used to transfer screen contents from the NCU/PCU to the HT 8 and key information from the HT 8 to the NCU/PCU. The HT 8 display shows the same operator interface that is displayed on the standard operator panels of the SINUMERIK control system.

The PN Plus connection box provides hot swapping (insert or remove during operation).

The operator interface can be customized if required (see HMI Open Architecture).

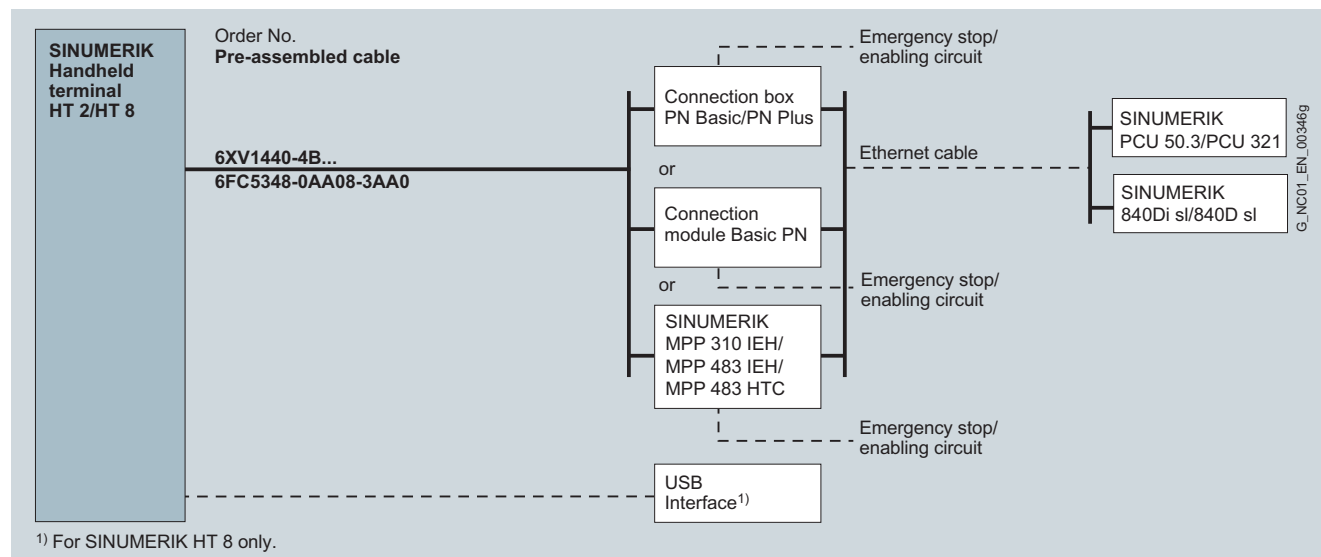
Technical specifications

Product name	6FC5403-0AA20-0AA0 SINUMERIK HT 8 handheld terminal	6FC5403-0AA20-1AA0 SINUMERIK HT 8 handheld terminal with handwheel
Input voltage	24 V DC	
Power consumption, max.	15 W	
Degree of protection according to EN 60529 (IEC 60529)	IP65	
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 ... 45 °C (32 ... 113 °F)	
Dimensions		
• External diameter of enclosure	290 mm (11.42 in)	
• Height (including override rotary button)	126 mm (4.96 in)	
Weight, approx.	1.73 kg (3.81 lb)	
Approvals, according to	cULus	

Integration

The SINUMERIK HT 8 handheld terminal 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



Connection overview for SINUMERIK HT 8

Information about application, configuration and cable extensions can be found under Connection system MOTION-CONNECT.

Selection and ordering data

Description	Order No.
SINUMERIK HT 8 handheld terminal Based on the Thin Client principle Operating software in the SINUMERIK NCU/PCU	6FC5403-0AA20-0AA0
SINUMERIK HT 8 handheld terminal with handwheel Based on the Thin Client principle Operating software in the SINUMERIK NCU/PCU	6FC5403-0AA20-1AA0
Accessories	
Connection box PN Basic IP65 degree of protection Without automatic emergency stop override for mounting in the system	6AV6671-5AE01-0AX0
Connection box PN Plus IP65 degree of protection With automatic emergency stop override for mounting in the system	6AV6671-5AE11-0AX0
Connection module Basic PN Without automatic emergency stop override for mounting in the control cabinet with terminating plug	6FC5303-0AA01-1AA0

Description	Order No.
Accessories (continued)	
Wall holder For safe storage of the SINUMERIK HT 8, also suitable for stationary operation	6AV6574-1AF04-4AA0
Touch pen with holding loop For SINUMERIK HT 8	6FC5348-0AA08-4AA0
Protective film (2 units) For MP 277 and SINUMERIK HT 8	6AV6671-5BC00-0AX0
Signal cable For mobile panels	
• Length: 2 m (6.56 ft)	6XV1440-4BH20
• Length: 5 m (16.41 ft)	6XV1440-4BH50
• Length: 8 m (26.25 ft)	6XV1440-4BH80
• Length: 10 m (32.81 ft)	6XV1440-4BN10
• Length: 15 m (49.22 ft)	6XV1440-4BN15
• Length: 20 m (65.62 ft)	6XV1440-4BN20
• Length: 25 m (82.03 ft)	6XV1440-4BN25
Coiled connecting cable For SINUMERIK HT 2/HT 8 Length: 1.5 m (4.92 ft), stretches to 3.5 m (11.48 ft)	6FC5348-0AA08-3AA0

Operator components for CNC controls

Handheld units

Handheld unit type B-MPI

Overview



The handheld unit type B-MPI is suitable for manually operating machine tools, such as axis feed movements. All keys are freely assignable, and the keyboard can be optionally labeled.

Design

The handheld unit features 2-channel emergency stop and enabling circuits. The enabling button is a 3-step enabling button. The handheld unit is available for 3-wire or 4-wire enabling.

The handheld unit type B-MPI is connected via a distributor box to the MPI line. The distributor box is designed for installation in a control cabinet or in a separate enclosure.

In the version with 4-wire connection of the enabling buttons, monitoring of the transverse short-circuit is possible in the enabling circuit. Due to the modified connector layout, these handheld units can be used only with the distributor box for this version. All handheld units are UL-certified for the US and Canada.

We can supply a holder for storing the handheld unit. The holder is manufactured from black polystyrene and can be fixed to a suitable base with 4 screws.

Integration

The handheld unit type B-MPI can be used for:

- SINUMERIK 840Di sl/840D sl

Technical specifications

Product name	6FX2007-1AC04/-1AC14 6FX2007-1AE04/-1AE14 Handheld unit type B-MPI
Operating voltage, unregulated	24 V DC
Degree of protection according to EN 60529 (IEC 60529)	IP65
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F)
Ambient temperature	
• Storage/Transport	-20 ... +60 °C (-4 ... +140 °F)
• Operation	0 ... 45 °C (32 ... 113 °F)
Distance to NCU/PCU, max.	200 m (656 ft)
Dimensions	
• Length	252 mm (9.92 in)
• Width	114 mm (4.49 in)
• Height	110 mm (4.33 in)
Weight, approx. without connecting cable	1.2 kg (2.65 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
Handheld unit type B-MPI	
3-step enabling button incl. connecting cable with connector	
• 3-wire enabling	
- Coiled connecting cable Length: 1.5 m (4.92 ft); stretches to 3.5 m (11.5 ft)	6FX2007-1AC04
- Straight cable Length: 10 m (32.8 ft)	6FX2007-1AC14
• 4-wire enabling	
- Coiled connecting cable Length: 1.5 m (4.92 ft); stretches to 3.5 m (11.5 ft)	6FX2007-1AE04
- Straight cable Length: 10 m (32.8 ft)	6FX2007-1AE14
Accessories	
Distributor	
For handheld unit and handheld programming unit incl. shorting plug	
• 3-wire enabling	6FX2006-1BC01
• 4-wire enabling	6FX2006-1BH01
Holder made of polystyrene	6FX2006-1HA00
Extension cable	
Between handheld unit and distributor	
• 3-wire enabling	
- Length: 5 m (16.4 ft)	6FX2002-1AB04-1AF0
- Length: 10 m (32.8 ft)	6FX2002-1AB04-1BA0
- Length: 15 m (49.2 ft)	6FX2002-1AB04-1BF0
- Length: 0.5 m (19.7 in) with angled connector	6FX2002-1AB14-1AA5
• 4-wire enabling	
- Length: 5 m (16.4 ft)	6FX2002-1AB84-1AF0
- Length: 10 m (32.8 ft)	6FX2002-1AB84-1BA0
- Length: 15 m (49.2 ft)	6FX2002-1AB84-1BF0
- Length: 0.5 m (19.7 in) with angled connector	6FX2002-1AB24-1AA5

Overview



The convenient, ergonomically designed mini handheld unit with rugged metal connector is suitable for setting up and operating standard machines in the Jobshop area.

Benefits

Since coarse, medium and fine infeed can easily be graduated, the operator control concept offers fast, increment-precise positioning. The signals are guided in parallel (without MPI) to the CNC.

Design

In addition to the 2-channel emergency stop and acknowledgement keys, a rapid traverse key and two +/- keys as well as a handwheel to traverse the axes in jog mode are available. Emergency stop has a 4-wire connection. The 3-step acknowledgement key has a 3-wire connection. Up to 5 axes can be selected via a rotary switch. Customer-specific applications can be implemented via 3 user-assignable function keys. If necessary, the customer can use slide-in labels to mark the keys specifically.

For the connection, the connection kit, which must be ordered separately, is required.

To change the cable outlet direction, we offer an angle socket for the connection kit. The angle socket allows the flange socket of the connection kit to be mounted 90° rotated. The angle socket can be used only in conjunction with the connection kit non-assembled.

The mini handheld unit can be fixed on metal surfaces by means of the integrated magnetic clamp. A holder is available as an option.

Integration

The mini handheld unit can be used for:

- SINUMERIK 840Di sl/840D sl

Technical specifications

Product name	6FX2007-1AD03/ 6FX2007-1AD13 Mini handheld unit with coiled connecting cable/ with straight connecting cable
Operating voltage	24 V DC
Handwheel	100 S/R, $V_B = 5 \text{ V}$, RS 422
Degree of protection according to EN 60529 (IEC 60529)	IP65
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Ambient temperature	
• Storage/Transport	-20 ... +60 °C (-4 ... +140 °F)
• Operation	0 ... 55 °C (32 ... 131 °F)
Max. distance between handwheel and NCU, when handwheel is used	25 m (82.03 ft)
Dimensions	
• Length	180 mm (7.09 in)
• Height	70 mm (2.76 in)
• Width	90 mm (3.54 in)
Weight, approx. (without connecting cable)	0.5 kg (1.10 lb)
Approvals, according to	UL

Selection and ordering data

Description	Order No.
Mini handheld unit 3-step acknowledgement key incl. magnetic clamps and connecting cable with metal connector	
• Coiled connecting cable Length: 1.5 m (4.92 ft), stretches to 3.5 m (11.48 ft)	6FX2007-1AD03
• Straight cable Length: 5 m (16.41 ft)	6FX2007-1AD13
Accessories	
Connection kit for mini handheld unit, non-assembled Version for metal connector, for connection to machine control panel <u>without</u> Industrial Ethernet, with terminating connector	6FX2006-1BG03
Connection kit for mini handheld unit, assembled Version for metal connector, for connection to machine control panel <u>with</u> Industrial Ethernet, with terminating connector	6FX2006-1BG11
90° angle socket For connection kit, non-assembled 6FX2006-1BG03 Metal version	6FX2006-1BG56
Holder For mini handheld units 6FX2007-1AD.3 and electronic handwheel in housing 6FC9320-5DE02	6FX2006-1BG70

Operator components for CNC controls

Handheld units

Electronic handwheel

Overview

This encoder generates signals which correspond to the movements of the handwheel as it is turned. The axis selected via the control can be positioned paraxially. The handwheels are equipped with a magnetic latching mechanism that supports traversing with incremental accuracy.

The front panel can be removed. A version with 24 V DC and an HTL interface is available for connection to I/O modules.

The portable handwheel is connected via a flange socket using the coiled connecting cable. The enclosure is fitted with a magnetic clamp. A holder is available to provide a place to store the handwheel on non-metallic surfaces.



Technical specifications

	6FC9320-5DB01	6FC9320-5DC01/ 6FC9320-5DF01/ 6FC9320-5DM00	6FC9320-5DE02	6FC9320-5DH01
Product name	Electronic handwheel	Electronic handwheel	Portable electronic handwheel	Electronic handwheel
Rated voltage	5 V DC \pm 5 %			10 ... 30 V DC
Rated current, max.	60 mA			15 mA
Interface	RS 422 (TTL)			HTL
Phase angle of pulse sequence A to B	90° electrical			
Pulses	2 \times 100 S/R			
Actuating force	8 Ncm	4 Ncm		
Output frequency, max.	2 kHz			
Distance to NCU	25 m (82.03 ft)		20 m (65.62 ft)	25 m (82.03 ft)
Degree of protection according to EN 60529 (IEC 60529)				
• Front	IP65			
• Rear	IP50			
Relative humidity				
• Storage	10 ... 95 % at 25 °C (77 °F)			
• Transport	10 ... 95 % at 25 °C (77 °F)			
• Operation	5 ... 80 % at 25 °C (77 °F)			
Ambient temperature				
• Storage	-40 ... +85 °C (-40 ... +185 °F)			
• Transport	-40 ... +85 °C (-40 ... +185 °F)			
• Operation	0 ... 70 °C (32 ... 158 °F)			
Weight, approx.	0.6 kg (1.32 lb)	0.4 kg (0.88 lb)	1.3 kg (2.87 lb)	0.4 kg (0.88 lb)
Approvals, according to	cULus			

Selection and ordering data

Description	Order No.
Electronic handwheel	
• With front panel 120 mm × 120 mm (4.72 in × 4.72 in), with setting wheel 5 V DC, RS 422	6FC9320-5DB01
• With front panel 76.2 mm × 76.2 mm (3 in × 3 in), with setting wheel 5 V DC, RS 422	6FC9320-5DC01
• Portable in housing, coiled cable 2.5 m (8.20 ft) with setting wheel 5 V DC, RS 422	6FC9320-5DE02
• With front panel 76.2 mm × 76.2 mm (3 in × 3 in), with setting wheel 24 V DC, HTL	6FC9320-5DH01
• Without front panel, with small setting wheel 5 V DC, RS 422	6FC9320-5DM00
• Without front panel, without setting wheel, for installation 5 V DC, RS 422	6FC9320-5DF01
Adapter set For installation in front panel with 3-hole fixing	6FC9320-5DN00
Flange socket For portable handwheel	6FC9341-1AQ
Holder For mini handheld units 6FX2007-1AD.3 and electronic handwheel in housing 6FC9320-5DE02	6FX2006-1BG70

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

Product name	6FC5303-0AA02-0AA0 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.

Operator components for CNC controls

Machine control panels

SINUMERIK MCP 310C PN

Overview



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

All keys are designed with replaceable key covers for machine-specific adaptations. The key covers can be freely inscribed using laser. Transparent key covers can be used as an alternative.

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

Included in the scope of delivery are the clamps, key caps (30 × ergo gray, 30 × clear, 9 × labeled) and a backing plate for the emergency stop.

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:

- Mechanical keys

Interfaces:

- PROFINET/Industrial Ethernet
- 9 inputs/6 outputs for 9 control devices (additional cable set required for control devices)
- For 2 handwheels

Expansion facilities:

- 6 slots for control devices ($d = 16 \text{ mm}/0.63 \text{ in}$)
- 1 slot for emergency stop button or rotary override switch (up to $d = 22 \text{ mm}/0.87 \text{ in}$)

Integration

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

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

Product name	6FC5303-0AF23-0AA1 SINUMERIK MCP 310C PN machine control panel
Input voltage	24 V DC
Power consumption, max.	5 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -40 ... +70 °C (-40 ... +158 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Distance	100 m (328 ft)
Dimensions	<ul style="list-style-type: none"> • Width 310 mm (12.2 in) • Height 175 mm (6.89 in) • Depth 54 mm (2.13 in) Panel cutout <ul style="list-style-type: none"> • 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

Operator components for CNC controls

Machine control panels

SINUMERIK MCP 310C PN

Selection and ordering data

Description	Order No.
SINUMERIK MCP 310C PN machine control panel PROFINET/Industrial Ethernet Width 310 mm (12.2 in), with mechanical keys	6FC5303-0AF23-0AA1
Accessories	
Square key cover, for labeling 1 set comprising of: 90 × ergo gray, 20 × red, 20 × yellow, 20 × green, 20 × mid-gray	6FC5248-0AF12-0AA0
Square key cover, for labeling 90 × transparent	6FC5248-0AF21-0AA0
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 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.

SINUMERIK MCP 310 PN

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 ($d = 16 \text{ mm}/0.63 \text{ in}$)
- 1 slot for emergency stop button or rotary override switch (up to $d = 22 \text{ mm}/0.87 \text{ in}$)

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

Operator components for CNC controls

Machine control panels

SINUMERIK MCP 310 PN

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)	<ul style="list-style-type: none"> • 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.

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

Operator components for CNC controls

Machine control panels

SINUMERIK MCP 483C PN

Overview



The SINUMERIK MCP 483C PN machine control panel permits user-friendly operation of the machine functions. It is suitable for machine-level operation of milling, turning, grinding and special machines.

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

All keys are designed with replaceable key covers for machine-specific adaptations. The key covers can be freely inscribed using laser. Transparent key covers can be used as an alternative.

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 (key covers on the direction keys for turning machines in the accessories pack supplied)
- 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:

- Mechanical keys

Interfaces:

- PROFINET/Industrial Ethernet
- 9 inputs/6 outputs for 9 control devices (additional cable set required for control devices)
- For 2 handwheels

Expansion facility:

- 2 slots for control devices ($d = 16 \text{ mm}/0.63 \text{ in}$)

Integration

The SINUMERIK MCP 483C PN machine control panel can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

Product name	6FC5303-0AF22-0AA1 SINUMERIK MCP 483C PN machine control panel
Input voltage	24 V DC
Power consumption, max.	5 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Distance	100 m (328 ft)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 155 mm (6.1 in) • Depth 55 mm (2.17 in) Panel cutout <ul style="list-style-type: none"> • Width 450 mm (17.72 in) • Height 135 mm (5.31 in) • Tolerance + 1 mm (0.04 in)
Weight, approx.	2 kg (4.41 lb)
Approvals, according to	cULus

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 PROFINET/Industrial Ethernet, width 19", with mechanical keys, emergency stop 22 mm (0.87 in)	6FC5303-0AF22-0AA1
Accessories	
Square key cover, for labeling 1 set comprising of: 90 × ergo gray, 20 × red, 20 × yellow, 20 × green, 20 × mid-gray	6FC5248-0AF12-0AA0
Square key cover, for labeling 90 × transparent	6FC5248-0AF21-0AA0
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 set (10 sets) For machine control panel	6FC5148-0AA03-0AA0
Rapid traverse dial (1 set = 20 units) for MCP 483C 16-position rotary switch	6FC5248-0AF30-0AA0
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
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.

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

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 ($d = 16 \text{ mm}/0.63 \text{ in}$)

Integration

The SINUMERIK MCP 483 PN machine control panel can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

Product name	6FC5303-0AF22-1AA1 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)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Distance	100 m (328 ft)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 155 mm (6.1 in) • Depth 55 mm (2.17 in)
Panel cutout	
<ul style="list-style-type: none"> • 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 PROFINET/Industrial Ethernet Width 19", with membrane keys, emergency stop 22 mm (0.87 in)	6FC5303-0AF22-1AA1
Accessories	
Slide-in labels for inscribing 3 A4 sheets	6FC5248-0AF22-1AA1
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.

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

Operator components for CNC controls

Machine control panels

SINUMERIK MPP 310 IEH

Overview



As well as the SINUMERIK MPP 483 IEH, the SINUMERIK Machine Push Button Panel MPP 310 IEH (Machine Push Button Panel, width 310 mm, for Industrial Ethernet with port for Handheld Terminal) offers 8 large long-stroke keys for easy machine operation, and a membrane keyboard for powerful setup functions. The SINUMERIK MPP 310 IEH is ideally suited as a supplement to the SINUMERIK OP 08T operator panel front.

The SINUMERIK MPP 310 IEH is suitable for the use with various machines, wherever maximum ergonomics and operation flexibility are required.

An A4 sheet for laser printers for inscribing the slide-in labels plus a set of colored key caps are included in the scope of supply.

The SINUMERIK Machine Push Button Panel is mounted from the rear using special clamps supplied with the panel.

Design

- Spindle override
- Feed rate override
- 8 customer keys (long-stroke keys, Schlegel) with LED, slide-in labels
- Blank cover for retrofit of Electronic Key System EKS (Euchner)
- 25 function keys with LED (membrane keys), slide-in labels
- With port for SINUMERIK HT 2/HT 8 handheld terminals
- Emergency stop override key
- Emergency stop button
- 4 extension keys (3SB3 keys) with LED, slide-in labels

Integration

The SINUMERIK MPP 310 IEH Machine Push Button Panel can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Technical specifications

Product name	6FC5303-1AF20-8AA1 SINUMERIK MPP 310 IEH Machine Push Button Panel
Input voltage	24 V DC
Power consumption, max.	25 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • Storage 10 ... 95 % at 25 °C (77 °F) • Transport 10 ... 95 % at 25 °C (77 °F) • Operation 5 ... 80 % at 25 °C (77 °F)
Ambient temperature	<ul style="list-style-type: none"> • Storage -20 ... +60 °C (-4 ... +140 °F) • Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 310 mm (12.2 in) • Height 295 mm (11.61 in) • Depth 140 mm (5.51 in) (105 mm (4.13 in) without connector for handwheel connection)
Panel cutout	<ul style="list-style-type: none"> • Width 278.5 mm (10.96 in) • Height 276.5 mm (10.89 in)
Weight, approx.	3 kg (6.62 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK MPP 310 IEH Machine Push Button Panel	6FC5303-1AF20-8AA1
With port for SINUMERIK HT 2/HT 8	

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

Operator components for CNC controls

Machine control panels

SINUMERIK MPP 483

Overview



The SINUMERIK MPP 483 (Machine Push Button Panel, width 483 mm) is available as an expansion to SINUMERIK and PLC-controlled machines. Its modular design and ergonomically arranged control elements permit user-friendly and easy operator control.

The SINUMERIK MPP 483 provides large long-stroke keys for easy machine operation as well as a membrane keyboard for powerful set-up functions.

Tuned to the requirements of the powertrain sector, the SINUMERIK MPP 483 is suitable for use with many different types of machine wherever ergonomics and operating flexibility are priorities. An A4 sheet for laser printers for inscribing the slide-in labels plus a set of colored key caps are included in the scope of supply.

The SINUMERIK Machine Push Button Panel is mounted from the rear using special clamps supplied with the panel.

Design

The basic version of the SINUMERIK MPP 483 Machine Push Button Panel offers, for example:

- Emergency stop button (4-wire), latching, tamper-proof
- 8 equipped illuminated pushbuttons for control elements ($d = 22.5 \text{ mm}/0.89 \text{ in}$)
- 2 blanking plugs for easy retrofitting
- 25 function keys with inscribed standard slide-in labels (membrane keys)
- Key switches with 2 positions for bridging the emergency stop circuit and for authorization of mode selection
- Direct key connection for SINUMERIK OP 012/OP 015A/TP 015A, incl. ribbon cable
- Feed rate override
- Interfaces for 2 handwheels when connected via PROFIBUS DP (function depends on CNC software)
- Communication via MPI/PROFIBUS DP

Expansion facilities:

- 2 spare slots ($d = 22.5 \text{ mm}/0.89 \text{ in}$)
- Spindle override
- Individual adaptation of long-stroke key colors and labeling

Other standard versions:

- SINUMERIK MPP 483 A for mounting applications, without override and with user-assignable and inscribable slide-in labels. Only the 4 keys for mode selection are inscribed.
- SINUMERIK MPP 483 H with port for an external handheld unit. SINUMERIK HT 6 handheld terminal or handheld unit type B-MPI with 2-channel enabling can be connected.
- SINUMERIK MPP 483 HTC with port for a SINUMERIK HT 2/HT 8 handheld terminal

Special versions:

- SINUMERIK MPP 483 S: Special versions are possible comprising different configuration types with various control elements and options, for example with the EKS identification system from Euchner.
- SINUMERIK MPP 483 L: This special version is characterized by a higher masking frame (244 mm/9.61 in) that offers additional mounting space like an integrated expansion frame.

Integration

The SINUMERIK MPP 483 Machine Push Button Panel can be used for:

- SINUMERIK 840Di sl/840D sl over PROFIBUS DP

Operator components for CNC controls

Machine control panels

SINUMERIK MPP 483

Technical specifications

Product name	6FC5303-1AF00-0AA1 SINUMERIK MPP 483 Machine Push Button Panel	6FC5303-1AF00-1AA1 SINUMERIK MPP 483 H Machine Push Button Panel	6FC5303-1AF01-0AA1 SINUMERIK MPP 483 A Machine Push Button Panel	6FC5303-1AF00-8AA1 SINUMERIK MPP 483 HTC Machine Push Button Panel
Input voltage	24 V DC			
Power consumption, max.	21 W	35 W	21 W	35 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front: IP54 • Rear: IP10A 			
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).			
Relative humidity	<ul style="list-style-type: none"> • Storage: 10 ... 95 % at 25 °C (77 °F) • Transport: 10 ... 95 % at 25 °C (77 °F) • Operation: 5 ... 80 % at 25 °C (77 °F) 			
Ambient temperature	<ul style="list-style-type: none"> • Storage: -20 ... +60 °C (-4 ... +140 °F) • Transport: -20 ... +60 °C (-4 ... +140 °F) • Operation: <ul style="list-style-type: none"> - Front: 0 ... 45 °C (32 ... 113 °F) - Rear: 0 ... 55 °C (32 ... 131 °F) 			
Dimensions	<ul style="list-style-type: none"> • Width: 483 mm (19.02 in) • Height: 155 mm (6.10 in) • Depth: 140 mm (5.51 in) (105 mm (4.13 in) when a PROFIBUS adapter is used) 			
Panel cutout				
• Width	451 mm (17.76 in)			
• Height	138 mm (5.43 in)			
Weight, approx.	3 kg (6.62 lb)			
Approvals, according to	cULus			

Selection and ordering data

Description	Order No.
SINUMERIK MPP 483 Machine Push Button Panel	6FC5303-1AF00-0AA1
SINUMERIK MPP 483 H Machine Push Button Panel With port for SINUMERIK HT 6 or handheld unit with 4-wire enabling	6FC5303-1AF00-1AA1
SINUMERIK MPP 483 A Machine Push Button Panel Without override	6FC5303-1AF01-0AA1
SINUMERIK MPP 483 HTC Machine Push Button Panel With port for SINUMERIK HT 2/HT 8 with feed rate override via MPI/PROFIBUS DP	6FC5303-1AF00-8AA1

Operator components for CNC controls

Machine control panels

SINUMERIK MPP 483 IE

Overview



The SINUMERIK MPP 483 IE (Machine Push Button Panel, width 483 mm (19.0 in) for Industrial Ethernet) is available as an expansion to SINUMERIK and PLC-controlled machines. Its modular design and ergonomically arranged control elements facilitate and simplify operation.

The SINUMERIK MPP 483 IE provides large long-stroke keys for easy machine operation as well as a membrane keyboard for powerful set-up functions.

Tuned to the requirements of the powertrain sector, the SINUMERIK MPP 483 IE is suitable for use with many different types of machine wherever ergonomics and operating flexibility are priorities. An A4 sheet for laser printers for inscribing the slide-in labels plus a set of colored key caps are included in the scope of supply.

The SINUMERIK Machine Push Button Panel is mounted from the rear using special clamps supplied with the panel.

Design

The basic version of the SINUMERIK MPP 483 IE Machine Push Button Panel offers, for example:

- Emergency stop button (4-wire), latching, tamper-proof
- 8 equipped illuminated pushbuttons for control elements ($d = 22.5 \text{ mm}/0.89 \text{ in}$)
- 2 blanking plugs for easy retrofitting
- 25 function keys with inscribed standard slide-in labels (membrane keys)
- Key switches with 2 positions for bridging the emergency stop circuit and for authorization of mode selection
- Direct key connection for SINUMERIK OP 012/OP 015A/TP 015A, incl. ribbon cable
- Feed rate override
- Interfaces for 2 handwheels when connected via Industrial Ethernet (function depends on CNC software)
- Communication via Industrial Ethernet

Expansion facilities:

- 2 spare slots ($d = 22.5 \text{ mm}/0.89 \text{ in}$)
- Spindle override
- Individual adaptation of colors and labels on membrane and long-stroke keys. As a general rule, all keys can be freely assigned and inscribed.
- SINUMERIK MPP 483 IEH with port for a SINUMERIK HT 2/HT 8 handheld terminal

Special versions:

- SINUMERIK MPP 483 IE-S./MPP 483 IEH-S.: Special versions with virtually unlimited configuration options combining various control elements and options are available, for example, with the EKS identification system (Euchner Key System).
- SINUMERIK MPP 483 IE-L/MPP 483 IEH-L: This special version Large is characterized by a higher masking frame (244 mm/9.61 in) that offers additional mounting space like an integrated expansion frame.

Integration

The SINUMERIK MPP 483 IE Machine Push Button Panel can be used for:

- SINUMERIK 840Di sl
- SINUMERIK 840D sl

Operator components for CNC controls

Machine control panels

SINUMERIK MPP 483 IE

Technical specifications

Product name	6FC5303-1AF10-0AA0 SINUMERIK MPP 483 IE Machine Push Button Panel	6FC5303-1AF10-8AA0 SINUMERIK MPP 483 IEH Machine Push Button Panel
Input voltage	24 V DC	
Power consumption, max.	21 W	35 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • Rear IP10A 	
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).	
Relative humidity	<ul style="list-style-type: none"> • Storage 10 ... 95 % at 25 °C (77 °F) • Transport 10 ... 95 % at 25 °C (77 °F) • Operation 5 ... 80 % at 25 °C (77 °F) 	
Ambient temperature	<ul style="list-style-type: none"> • Storage -20 ... +60 °C (-4 ... +140 °F) • Transport -20 ... +60 °C (-4 ... +140 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F) 	
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 155 mm (6.10 in) • Depth 140 mm (5.51 in) (105 mm (4.13 in) without connector for handwheel connection) Panel cutout <ul style="list-style-type: none"> • Width 451 mm (17.76 in) • Height 138 mm (5.43 in) 	
Weight, approx.	3 kg (6.62 lb)	
Approvals, according to	cULus	

Selection and ordering data

Description	Order No.
SINUMERIK MPP 483 IE Machine Push Button Panel	6FC5303-1AF10-0AA0
SINUMERIK MPP 483 IEH Machine Push Button Panel	6FC5303-1AF10-8AA0
With port for SINUMERIK HT 2/HT 8	

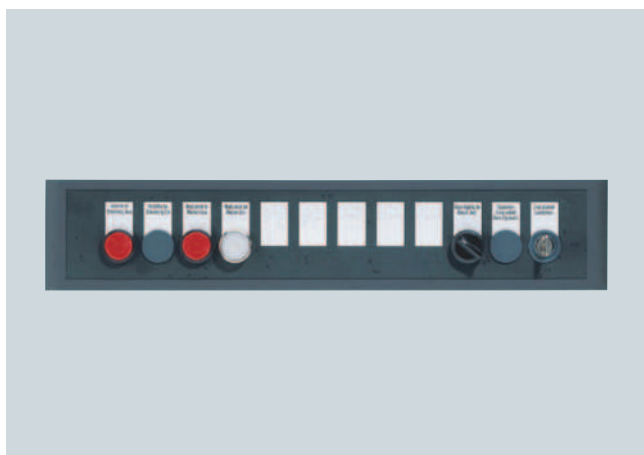
Ordering data for Ethernet or PROFINET can be found under Industrial Ethernet switches – SCALANCE.

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

Product name	6FC5247-0AA43-1AA0 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	6FC5247-0AA43-1AA0
Width 19" with 12 slots for 22 mm (0.87 in) control elements, not equipped Mounted using clamps	
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

Machine control panels

SIRIUS 3SB3

Laser inscription

Overview



Innovative technology, simple installation

SIRIUS 3SB3 is our modular, tried-and-tested complete range of pushbuttons and indicator lights. Whether round or square, plastic or metal - we can supply the ideal solution for any application. Your benefit: SIRIUS 3SB3 products are quick and easy to install – and are dependable in operation.

Benefits

- Emergency stop with reliable direct connection to AS-Interface
- SIRIUS 3SB3 control devices in plastic and metal for the world market
- Rugged metal control devices: IP67 degree of protection/NEMA 4
- Cost-effective and uniquely identifiable with integral super-bright LED
- Various connection possibilities: screw-type, solder pin or spring-loaded terminals

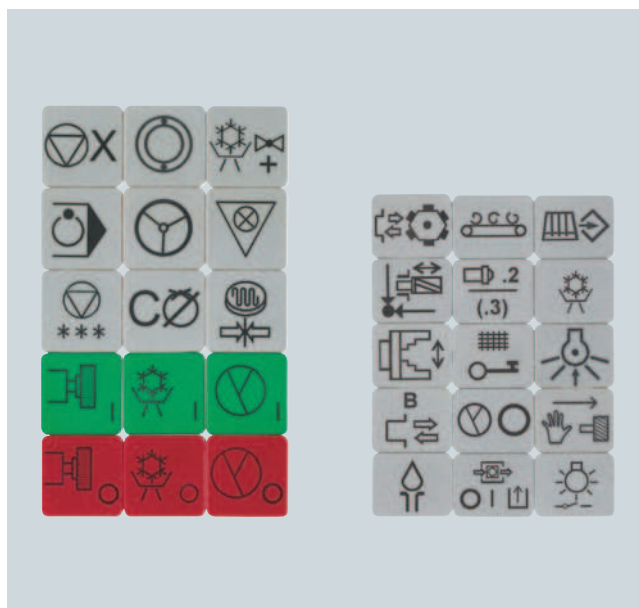
More information

For further information, please contact:

Technical Assistance

Phone: +49 911 895 5900
 Fax: +49 911 895 5907
 E-mail: technical-assistance@siemens.com
 Internet: www.siemens.com/automation/cd

Overview



High-quality, individual inscription of the mechanical keys on SINUMERIK machine control panels with special symbols required by the customer is easy using lasers.

Laser inscription is possible on all materials in principle and can therefore be used for permanent and reliable identification, also for special keys in the case of SINUMERIK machine control panels.

The quality of laser inscribed products is significantly higher than conventional inscription techniques.

Benefits

- Maximum precision
- Long service life
- Professional key design enhances the ergonomics and appearance of the machine tool

More information

For professional advice and solutions regarding laser-inscribed, mechanical key caps/key symbols for the SINUMERIK machine control panels, please contact the specialist support of the specified companies:

LASERline Teschauer GmbH

Contact: Dipl.-Ing. Margitta Teschauer

Max-Planck-Straße 22b
 09114 CHEMNITZ, Germany

Phone: +49 371 3301057
 Fax: +49 371 3301058
 E-mail: laserline@teschauer.de
 Internet: www.teschauer.de

CoReKu

Contact: Mr. Bernhard Krompholz

Im Grünen Winkel 3A
 09337 CALLENBERG OT Langenchursdorf, Germany

Phone: +49 37608 128-0
 Fax: +49 37608 128-20
 E-mail: kontakt@coreku.de
 Internet: www.coreku.de

Operator components for CNC controls

Keyboards

KBPC CG US standard PC keyboard

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

Product name	6FC5203-0AC01-3AA0 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 MF-II compatible, 104 key layout, connection: USB, incl. connecting cable, length: 1.7 m (5.58 ft)	6FC5203-0AC01-3AA0

Keyboard tray

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

Product name	6FC5247-0AA40-0AA0 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 For keyboard, incl. 2 collar screws	6FC5247-0AA40-0AA0

Overview



The SINUMERIK KB 310C full CNC keyboard permits user-friendly input of programs and text.

The keyboard is mounted from the rear using special clamps supplied with the keyboard.

Design

Control elements:

- Standard/US QWERTY layout
- 75 mechanical keys
- Alpha block with special characters
- Numeric block with special characters
- Cursor block
- CNC function keys with hot keys for fast selection of the control area

Interface:

- USB 1.1

Integration

The SINUMERIK KB 310C full CNC keyboard can be used for:

- SINUMERIK 840Di sl/840D sl

Technical specifications

Product name	6FC5203-0AF21-0AA1 SINUMERIK KB 310C full CNC keyboard
Input voltage	5.25 V DC
Power consumption, max.	0.4 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Distance to PCU	3 m (9.84 ft)
Dimensions	<ul style="list-style-type: none"> • Width 310 mm (12.2 in) • Height 175 mm (6.89 in) • Depth 31 mm (1.22 in)
Panel cutout	<ul style="list-style-type: none"> • Width 285 mm (11.22 in) • Height 155 mm (6.10 in) • Tolerance + 1 mm (0.04 in)
Weight, approx.	0.9 kg (1.98 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK KB 310C full CNC keyboard Width 310 mm (12.2"), connection: USB 1.1, with mechanical keys, incl. connecting cable Length: 1.5 m (4.92 ft)	6FC5203-0AF21-0AA1
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

SINUMERIK KB 483C

Overview



The SINUMERIK KB 483C full CNC keyboard permits user-friendly input of programs and text.

The keyboard is mounted from the rear using special clamps supplied with the keyboard.

Design

Control elements:

- Standard/US QWERTY layout
- 78 mechanical keys
- Alpha block with special characters
- Numeric block with special characters
- Cursor block
- CNC function keys with hot keys for fast selection of the control area

Interface:

- USB 1.1

Integration

The SINUMERIK KB 483C full CNC keyboard can be used for:

- SINUMERIK 840Di sl/840D sl

Technical specifications

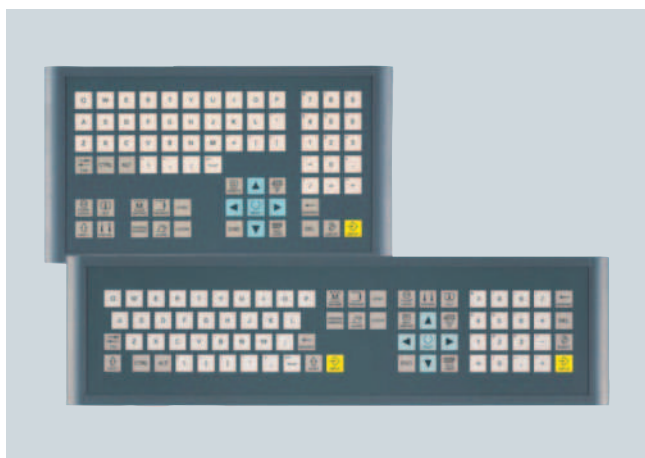
Product name	6FC5203-0AF20-0AA1 SINUMERIK KB 483C full CNC keyboard
Input voltage	5.25 V DC
Power consumption, max.	0.4 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • Front IP54 • Rear IP00
Humidity rating based on EN 60721-3-3	Class 3K5 condensation and icing excluded. Low air temperature 0 °C (32 °F).
Relative humidity	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width 483 mm (19.02 in) • Height 133 mm (5.24 in) • Depth 31 mm (1.22 in) Panel cutout <ul style="list-style-type: none"> • Width 450 mm (17.72 in) • Height 112.5 mm (4.43 in) • Tolerance + 1 mm (0.04 in)
Weight, approx.	1.3 kg (2.87 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK KB 483C full CNC keyboard Width 19", connection: USB 1.1, with mechanical keys, incl. connecting cable Length: 1.5 m (4.92 ft)	6FC5203-0AF20-0AA1
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

Dyna Systems full CNC keyboard

Overview



The full CNC membrane keyboards from Dyna Systems in Siemens design permit user-friendly input of programs and text.

The full CNC keyboards are mounted from the rear using special clamps supplied with the keyboard.

Design

Control elements:

- Standard/US QWERTY layout
- Membrane keyboard with 78 keys (QWERTY 483)
- Membrane keyboard with 75 keys (QWERTY 310)
- Alpha block with special characters
- Numeric block with special characters
- Cursor block
- CNC function keys with hotkeys for fast selection of the control area

Interface:

- USB 1.1

Integration

Membrane keyboards can be used for:

- SINUMERIK 840Di sl/840D sl

Technical specifications

Product name	Dyna Systems full CNC membrane keyboard
Input voltage	5.25 V DC
Power consumption, max.	0.4 W
Degree of protection according to EN 60529 (IEC 60529)	<ul style="list-style-type: none"> • 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).
Ambient temperature	<ul style="list-style-type: none"> • Storage -25 ... +55 °C (-13 ... +131 °F) • Transport -25 ... +55 °C (-13 ... +131 °F) • Operation <ul style="list-style-type: none"> - Front 0 ... 45 °C (32 ... 113 °F) - Rear 0 ... 55 °C (32 ... 131 °F)
Dimensions	<ul style="list-style-type: none"> • Width <ul style="list-style-type: none"> - QWERTY 483 483 mm (19.02 in) - QWERTY 310 310 mm (12.20 in) • Height <ul style="list-style-type: none"> - QWERTY 483 133 mm (5.24 in) - QWERTY 310 175 mm (6.89 in) • Depth 31 mm (1.22 in) Panel cutout <ul style="list-style-type: none"> • Width <ul style="list-style-type: none"> - QWERTY 483 451 mm (17.76 in) - QWERTY 310 278.4 mm (10.96 in) • Height <ul style="list-style-type: none"> - QWERTY 483 115.1 mm (4.53 in) - QWERTY 310 157.6 mm (6.20 in) • Tolerance + 1 mm (0.04 in)
Weight, approx.	<ul style="list-style-type: none"> • QWERTY 483 1.3 kg (2.87 lb) • QWERTY 310 1.1 kg (2.43 lb)

More information

Dyna Systems GmbH is known for developing innovative, customized control systems. We are experts in solving human-machine communication problems. Are you looking for solutions? We can help!

Dyna Systems GmbH

Grünteweg 14
88175 SCHEIDEGG, Germany

Phone: +49 8381 919-200

Fax: +49 8381 919-290

E-mail: info@dynasystems.de

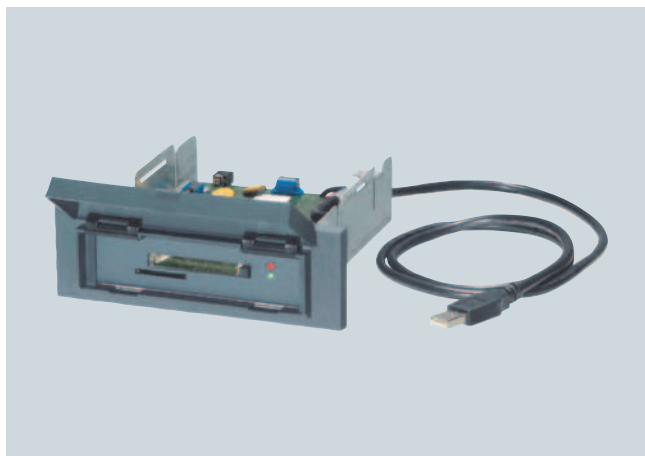
Internet: www.dynasystems.de

Operator components for CNC controls

Storage devices

SINUMERIK card reader USB 2.0

Overview



The SINUMERIK card reader for CF/SD/MMC memory media is suitable for archiving user data and can be installed in front panels. The connection is made via a USB interface.

Function

The SINUMERIK card reader is suitable for CF, SD and MMC cards and is provided for archiving and exchange of user data.

Since the reader can be installed in front panels, data can be exchanged without opening the control cabinet door.

The card reader can be booted. Cards can be inserted and removed during operation.

Integration

The SINUMERIK card reader for CF/SD/MMC memory media can be connected to:

- SINUMERIK PCU 50.3
- SINUMERIK TCU (CF cards only)

Technical specifications

Product name	6FC5335-0AA00-0AA0 SINUMERIK card reader USB 2.0 for CF/SD/MMC memory media
Degree of protection	
• Front	IP54
• Rear	IP00
Relative humidity	
• Storage	90 %
• Transport	90 %
• Operation	90 %
Ambient temperature	
• Storage	-40 ... +70 °C (-40 ... +158 °F)
• Transport	-40 ... +70 °C (-40 ... +158 °F)
• Operation	0 ... 60 °C (32 ... 140 °F)
Dimensions	
• Width	145 mm (5.71 in)
• Height	50 mm (1.97 in)
• Depth	143 mm (5.63 in)
Weight, approx.	0.4 kg (0.88 lb)
Approvals, according to	cULus

Selection and ordering data

Description	Order No.
SINUMERIK card reader USB 2.0	6FC5335-0AA00-0AA0
For memory media CF/SD/MMC Incl. connecting cable Length: 1 m (3.28 ft)	
Accessories	
1 GB CompactFlash Card	6FC5313-5AG00-0AA0
Empty	
Cover	6FC5247-0AA20-0AA0
For SINUMERIK floppy disk drive and card reader with masking frame, cover, and bearing bracket	

Operator components for CNC controls

Storage devices

CompactFlash Card

Overview



The CompactFlash Card is used to store user data or the CNC software.

Integration

The CompactFlash Card is suitable for:

- SINUMERIK 802D sl:
Additional memory for user data
- SINUMERIK 840Di sl:
Additional memory for user data
- SINUMERIK 840D sl:
- For the CNC software of the
NCU 710.2/NCU 720.2/NCU 720.2 PN/
NCU 730.2/NCU 730.2 PN
- Additional memory for user data in the
SINUMERIK PCU 50.3

Technical specifications

Product name	6FC5313-5AG00-0AA0 SIMOTION/SINUMERIK 1 GB CompactFlash Card
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	9 ... 95 %
• Transport	8 ... 95 %
• Operation	8 ... 95 %
Ambient temperature	
• Storage	-25 ... +85 °C (-13 ... +185 °F)
• Transport	-25 ... +85 °C (-13 ... +185 °F)
• Operation	0 ... 70 °C (32 ... 158 °F)
Dimensions	
• Width	43 mm (1.69 in)
• Height	3 mm (0.12 in)
• Depth	37 mm (1.46 in)
Weight, approx.	12 g (0.42 oz)

Selection and ordering data

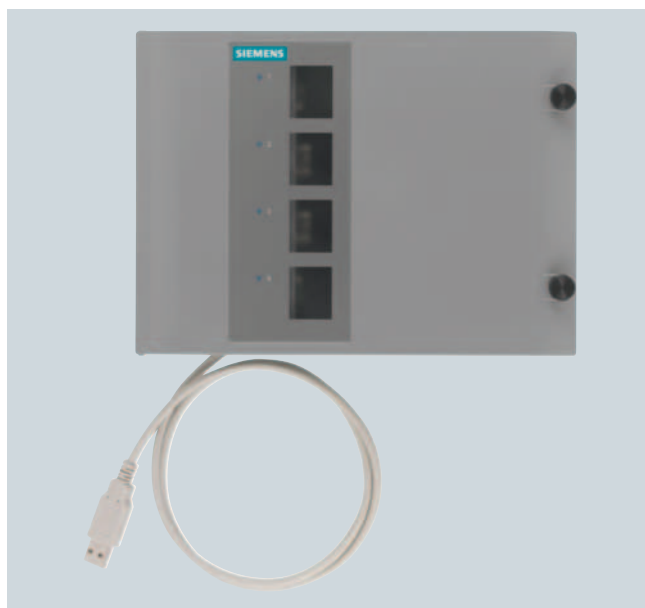
Description	Order No.
1 GB CompactFlash Card	6FC5313-5AG00-0AA0
Empty	

Operator components for CNC controls

Storage devices

Industrial USB Hub 4

Overview



The Industrial USB Hub 4 is essentially used as a USB hub for the connection of I/O devices to SINUMERIK PCU 50.3.

USB peripherals can be connected to the operator component and operated via the USB Hub 4 without opening the cabinet door.

The Industrial USB Hub 4 differs from commercially available USB hubs mainly in its suitability for use in rugged industrial environments (IP65).

Application

Use of the Industrial USB Hub 4 means that up to 4 I/O devices, such as USB flash drive, USB floppy disk drive, USB card reader, etc. can be connected simultaneously to the operator component, thereby increasing the availability of the system to be operated. The cabinet door no longer has to be opened in order to connect the I/O devices. Continuous operation of the operator component is therefore possible.

In addition, the Industrial USB Hub 4 has the following features:

- Inspection window for each interface
- Vibration-proof latching of connected USB cables and USB flash drives
- One LED per interface for checking the data traffic
- Sufficient interior space for easy insertion and removal
- Facility for attachment to a DIN rail

Integration

The Industrial USB Hub 4 is suitable for connection to:

- SINUMERIK PCU 50.3

Technical specifications

Product name	6AV6671-3AH00-0AX0 Industrial USB Hub 4
Supply voltage	24 V DC
• Permitted range	+20.4 ... +28.8 V DC
Ports	4 acc. to USB; 500 mA each
Degree of protection according to EN 60529 (IEC 60529)	
• Front	IP65
• Rear	IP20
Relative humidity, max.	90 %
Ambient temperature	
• Storage	-20 ... +60 °C (-4 ... +140 °F)
• Transport	-20 ... +60 °C (-4 ... +140 °F)
• Operation (vertical installation)	0 ... 50 °C (32 ... 122 °F)
Dimensions	
• Width	212 mm (8.35 in)
• Height	156 mm (6.14 in)
• Depth	50 mm (1.97 in)
Installation cut-out	
• Width	182 mm (7.17 in)
• Height	138 mm (5.43 in)
Weight, approx.	0.5 kg (1.10 lb)

Selection and ordering data

Description	Order No.
Industrial USB Hub 4 With 4 USB ports, degree of protection IP65	6AV6671-3AH00-0AX0