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# HMI

## Brilliant Displays of Processing Sequences



With its MI4 and MV4 operator and display units, Moeller offers you a product range for Man/machine communication that allows you to implement solutions quickly and in the optimum fashion. The offering includes units from graphics-capable Text Operator panels with 4 x 20 characters and 11 keys, up to 15" TFT Touch Operator panels with a resolution of 1024 x 768 pixels.

With the Touch Operator panels you have a choice between devices with analog resistive (MI4 series) or infrared touch technology (MV4 series).

When equipped with a communication module, these operator and display units become bus-capable and can be connected via CANopen, PROFIBUS-DP, Suconet, MPI, DeviceNet and many other protocols.



The graphics-capable MI4 Operator panels are designed for simple and economical machine operation. There is a choice of units offering differing combinations of display and key configuration, depending on requirement for information and operator task. New features offered are the options of showing pictograms, logos and schematic drawings on the screen. The MI4-140-KF1 Text Operator panel even offers the possibility of mobile operation that is ideal for use during commissioning of machines and systems.



Visualisation plus operation of complex machine control systems. This is the challenge to modern monitoring technology, because the user has to be kept up-to-date with what is happening at the machine at all times, and has to be able to intervene if necessary.

The Moeller MV4 series of products is capable of optimally meeting all the demands on Man/machine communication. These Touch Operator panels offer perfect control while guaranteeing short reaction times, whether individual signals or complete production sequences are involved.



### Text Operator Panel

The MI4 Text Operator panels are designed for simple and economical machine operation. The monochrome, yet clearly contrasting, LCD displays are back-lit by durable LEDs. All the displays are graphics-capable, which means that various character sets, diagrams and bar-graphs, etc. can be shown on the screen. Each of the keys can be configured as the project requires, and insert strips for the function keys allow these to be individually inscribed.



### Grafik Operator Panel

The MI4 Graphics Operator panels offer a clear representation of machine and processing systems sequences. The values of any PLC variables can be shown in the form of a trend curve, a bar graph or as an analog pointer-type instrument. The engineer has a comprehensive graphics and object library at his disposal. The wide range of functions also includes others such as the automatic temperature compensation of the display contrast and a screen saver. As far as configuration of the keys, as well as labelling with insert strips is concerned, the Graphics Operator panel offers the same features as the Text Operator panel.

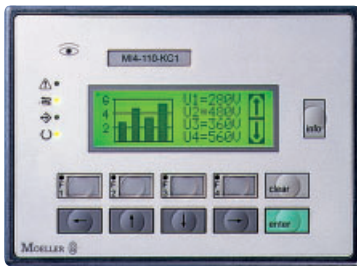


### Touch Operator Panel

The Touch Operator panels enable menu-guided, intuitive operation of complex machines or systems. Two product ranges are available: the MI4 Touch Operator panels use analog-resistive touch technology with a full-screen film surface. The MV4 Touch Operator panels use infrared touch technology with scratchproof and impact-resistant glass screen surface. Both ranges include units from 3.8" STN displays (monochrome) with 320 x 240 pixel resolution (MV4: 5,7") to 15" TFT displays (256 colours) with 1024 x 768 pixel resolution.

Graphics-capable text operator panel

MI4-110-KC1, MI4-117-KC1



MI4-110-KD1, MI4-117-KD1



MI4-110-KG1-KG2



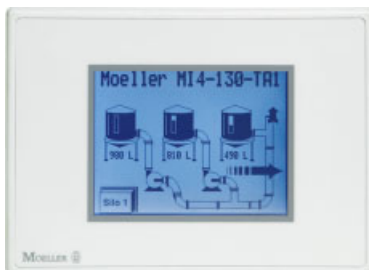
Graphic operator panel

MI4-450-K11



Touch operator panel

MI4-130-TA1, MI4-137-TA1



MI4-570-TA1



Moeller HPL0213-2004/2005

**Product description**

The MI4 spectrum ranges from a graphics-capable text operator panel with a 4 × 20 character LCD display and 11 keys up to a touch operator panel with a 15" TFT display and a resolution of 1024 × 768 pixels. All these devices can be project-programmed with the MI4 configurator MI4-CFG-1.

**Application**

The MI4 graphic text operator panels are designed for simple and economical machine operation. Units with different display types and key combinations are available, depending on the information requirements and the operating task at hand. A new feature of these units, however, is the possibility of displaying pictographs, logos and diagrams.

The text operator panel MI4-140-KF1 even allows mobile operation, as may be required for setting up operations on widely spread out machinery.

The MI4 graphic and touch operator panels are designed for user-friendly display and operation. Impressive visualization displays are possible thanks to the flexible design capability of the display user interface using bitmaps, trend curves, analog pointer-type instruments and other moving displays. This also enables the user to obtain more quickly the current status data of machines and systems.

Touch operator panels also enable the menu-driven and intuitive operation of complex machines and systems.

**Features**

- Display of system states and process variables via numeric data fields, bar graphs or text messages.
- Setpoint entry via numeric data fields
- Display and storage of alarms with date and time
- History memory
- Recipe management
- Recipe memory, battery-buffered (not with MI4-110-KC1/-KG2)
- Real-time clock, battery-buffered (not with MI4-110-KC1/-KG2)
- Time synchronisation (with PLC and/or other MI4 units)
- Language selection via MI4 and/or PLC
- Password protection (issue of up to 8 different access rights)
- Serial printer interface (not with MI4-110-KC1/-KD1/-KG2, MI4-117-KC1/-KD1 and MI4-130-TA1, MI4-137-TA1) for printing out messages, alarm lists and history memories.
- 24 V DC connection, protected against reverse polarity
- IP65 degree of protection at front
- Backlit LCD display
- Display contrast setting
- Freely configurable keys
- Insert labels for free user inscription of function keys and logos
- Function key LEDs actuated by the MI4 and/or the PLC

Additional features for graphic and touch operator panels:

- Display of variable values as analog dial instruments and trend curves (no trend curves with MI4-130-TA1, MI4-137-TA1)
- Display brightness setting (only for STN displays)
- Automatic temperature compensation of display contrast
- Screen saver
- Object and symbol libraries
- Resistive-Touch technology

**Engineering/programming**

Project planning for all MI4 operator panels is carried out with the MI4 configurator MI4-CFG-1. The software runs under Windows 98SE, ME, NT, 2000 and XP. A user-friendly panel setup dialog is used at first to select the unit for which the project is designed, as well as its particular properties. The PLC connection can also then be configured by means of simple dialogs. The contents displayed on the MI4 screen pages can be created page by page using drag and drop operations. The final project can then be transferred via the serial interface or using the available PC drive accessory for units with an SSFDC memory card.

**Communication/networking**

All MI4 units are provided with an interface for connection to a fieldbus. Different fieldbus interfaces are possible thanks to the different interface module accessories that are available. These are simply fitted on a socket in the MI4 unit. The MI4-117-KC1, MI4-117-KD1 and MI4-137-TA1 are fitted with an integrated CAN interface. Additional interface modules can be plugged into these devices.

Furthermore, all MI4 units can also be connected to Moeller PLC systems directly via SUCOM-A without the use of an interface module. Connection to easy800 and the DF5/6 and DV5/6 frequency inverters is also possible, without an additional interface module.

**Documentation**

Documentation in the form of PDF files in English and German is included in the MI4 configurator MI4-CFG-1.

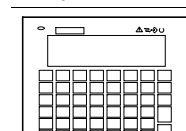
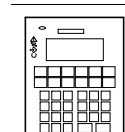
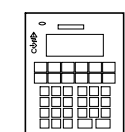
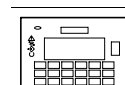
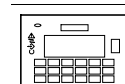
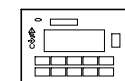
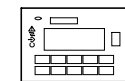


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Display	Operation			User LED			
	Lines × characters	Resolution Pixels	Display area mm				
Monochrome	4 × 20	120 × 32	70 × 21	–	4	11	4
Monochrome	4 × 20	120 × 32	70 × 21	–	4	11	4
Monochrome	4 × 20	120 × 32	70 × 21	●	9	19	10
Monochrome	4 × 20	120 × 32	70 × 21	●	9	19	9
Monochrome	4 × 20	120 × 32	70 × 21	●	12	35	12
Monochrome	4 × 20	120 × 32	70 × 21	●	12	35	12
Monochrome	8 × 20	120 × 64	66 × 33	●	9	27	21
Monochrome	8 × 40	240 × 64	127 × 34	●	23	46	24

Graphics-capable text operator panel

- LCD monochrome
- Background lighting LED
- Project memory 512 kByte
- Graphic
- Scalable font
- Password protection



Notes Device feature: fieldbus interface. The modules for fieldbus connection must be ordered separately.

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Memory	History memory messages	Alarm messages	Device features	Type Article no.	Price See Price List	Std. pack	Notes
Recipe memory kByte	Project memory expansion kByte	Quantity					
–	–	–	256	Interface for SUCOM-A, fieldbus interface, downloadable fonts	<b>MI4-110-KC1</b> 229794	1 off	Alphanumerical entries can be made with the cursor keys.
–	–	–	256	Integrated CAN interface, SUCOM-A interface, downloadable fonts	<b>MI4-117-KC1</b> 283397	1 off	Alphanumerical entries can be made with the cursor keys. No addition fieldbus modules can be plugged in.
16	–	256	1024	Interface for SUCOM-A, fieldbus interface, battery, buffered real-time clock, downloadable fonts	<b>MI4-110-KD1</b> 274308	1 off	–
16	–	256	1024	Integrated CAN interface, SUCOM-A interface, battery, buffered real-time clock, downloadable fonts	<b>MI4-117-KD1</b> 283398	1 off	No addition fieldbus modules can be plugged in.
–	512	–	256	Interface for SUCOM-A, fieldbus interface, downloadable fonts	<b>MI4-110-KG2</b> 229795	1 off	–
16	512	256	1024	Battery, buffered real-time clock, serial printer interface, SUCOM-A interface, fieldbus interface, downloadable fonts	<b>MI4-110-KG1</b> 229796	1 off	–
16	–	256	1024	Battery, buffered real-time clock, serial printer interface, SUCOM-A interface, fieldbus interface, downloadable fonts	<b>MI4-140-KF1</b> 229797	1 off	Fieldbus interface: MI4-140-KF1: only modules ZB4-505-IF1 (Siemens MPI) or ZB4-501-IF1 (Suconet K) can be plugged in. Including hooks and 5 m connection cable.
16	512	256	1024	Battery, buffered real-time clock, serial printer interface, SUCOM-A interface, fieldbus interface, downloadable fonts	<b>MI4-140-KI1</b> 229798	1 off	–

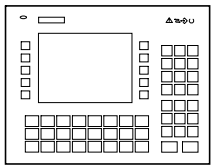
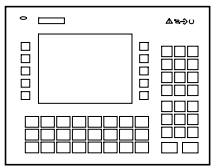
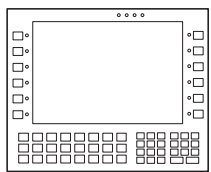
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Display		Operation					
LCD	Resolution	Display area	Screen diagonal	Numerical block	Function keys, can be user-inscribed	Freely programmable keys	User LED
	Pixels	mm	Inches				

**Graphics operator panel**

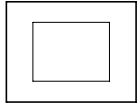
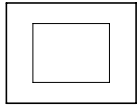
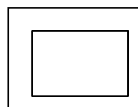
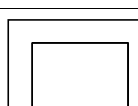
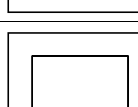




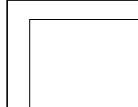
- CCFL backlight
- Project memory: Flash (SSFDC card) 8 MB
- Graphic
- Scalable font
- Password protection
- Battery

	Monochrome	320 × 240	121 × 91	5.6	●	23	56	24
	Color (STN)	320 × 240	121 × 91	5.6	●	23	56	24
	Color (TFT)	640 × 480	212 × 159	10.4	●	23	58	24

**Notes** Device feature: fieldbus interface. The modules for fieldbus connection must be ordered separately.

Memory	History memory messages	Alarm messages	Device features	Type Article no.	Price See Price List	Std. pack	Notes
Recipe memory							
kByte		Quantity					
32	1024	1024	Buffered real-time clock, screen saver, serial printer interface, SUCOM-A interface, fieldbus interface	MI4-150-KI1 229800		1 off	Function keys, suitable for user inscription: 10 additional function keys available, not suitable for user inscription.
32	1024	1024	Buffered real-time clock, screen saver, serial printer interface, SUCOM-A interface, fieldbus interface	MI4-450-KI1 229801		1 off	Function keys, suitable for user inscription: 10 additional function keys available, not suitable for user inscription.
32	1024	1024	Buffered real-time clock, screen saver, serial printer interface, SUCOM-A interface, fieldbus interface	MI4-570-KH1 229804		1 off	Function keys, suitable for user inscription: 12 additional function keys available, not suitable for user inscription.

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	Display LCD	Resolution Pixels	Display area mm	Screen diagonal Inches	Operation Numerical block
<b>Touch operator panel</b>					
<ul style="list-style-type: none"> <li>• Resistive touch functions</li> <li>• Project memory: Flash (SSFDC card) 8 MB (except MI4-130-TA1, MI4-137-TA1)</li> <li>• Graphic</li> <li>• Scalable font</li> <li>• Password protection</li> <li>• Battery</li> </ul>					
	Monochrome	320 × 240	77 × 58	3.8	Implemented through touch fields
	Monochrome	320 × 240	77 × 58	3.8	Implemented through touch fields
	Monochrome	320 × 240	121 × 91	5.6	Implemented through touch fields
	Monochrome	320 × 240	121 × 91	5.6	Implemented through touch fields
	Color (STN)	320 × 240	121 × 91	5.6	Implemented through touch fields
	Color (TFT)	320 × 240	121 × 91	5.6	Implemented through touch fields
	Monochrome	640 × 480	196 × 146	9.6	Implemented through touch fields
	Color (TFT)	640 × 480	218 × 159	10.4	Implemented through touch fields
	Color (TFT)	800 × 600	246 × 184	12.1	Implemented through touch fields
	Color (TFT)	1024 × 768	304 × 228	15	Implemented through touch fields

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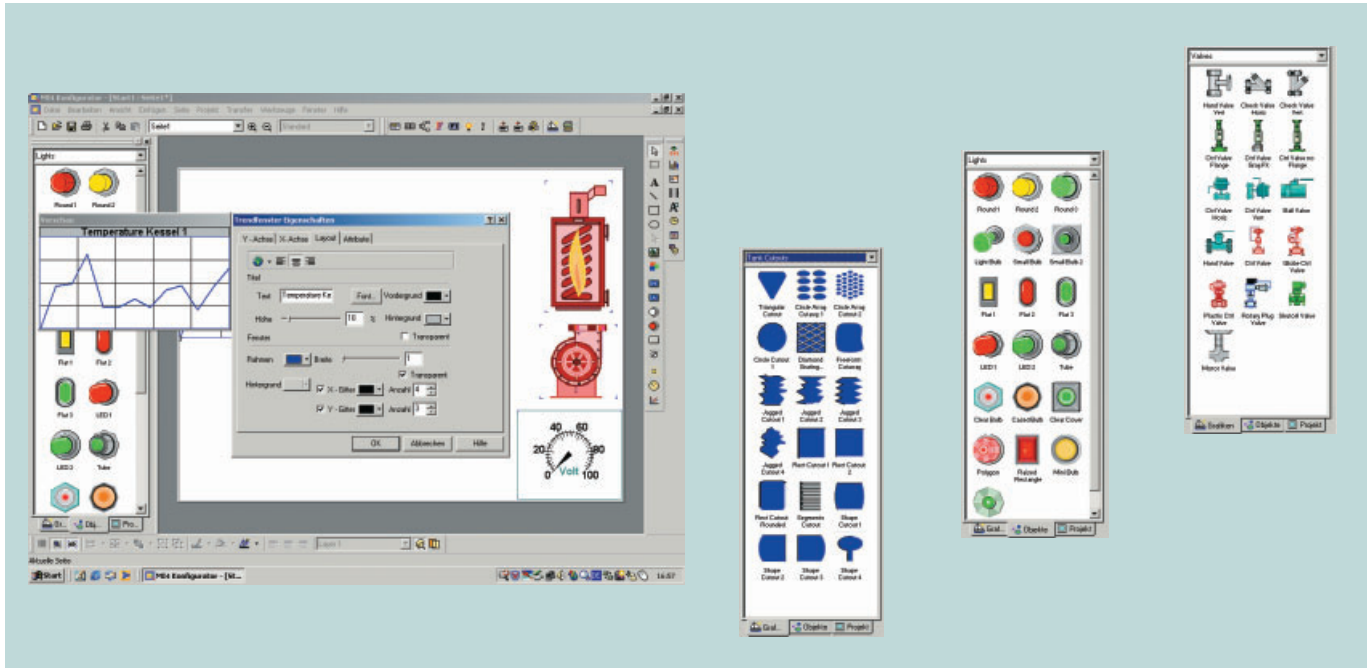
Memory Recipe memory kByte	History memory messages	Alarm messages Quantity	Device features	Type Article no.	Price See Price List	Std. pack
32	256	1024	Buffered real-time clock, screen saver, SUCOM-A interface, fieldbus interface, LED background lighting	<b>MI4-130-TA1</b> 274330		1 off
32	256	1024	Buffered real-time clock, screen saver, SUCOM-A interface, integrated CAN interface, no additional fieldbus modules can be plugged in, LED background lighting	<b>MI4-137-TA1</b> 283399		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, LED background lighting	<b>MI4-140-TA1</b> 258434		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-150-TA1</b> 229805		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-450-TA1</b> 229806		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-550-TA1</b> 229807		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-160-TA1</b> 229808		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-570-TA1</b> 229810		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-580-TA1</b> 229811		1 off
32	1024	1024	Buffered real-time clock, screen saver, buzzer, SUCOM-A interface, fieldbus interface, serial printer interface, CCFL background lighting	<b>MI4-590-TA1</b> 229812		1 off

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### Application

The configuration software MI4-CFG-1 is used for the creation of application forms for all MI4 devices, and runs under Windows 98SE, ME, NT, 2000. The software is supplied on CD-ROM together with German and English documentation in PDF format.

### Features

- Pixel and vector oriented graphics
- Import and editing of graphics
- Object levels
- Switch color to transparent
- Object grouping and object libraries
- Variables management (Variables Editor)
- Export/import of all project texts (CSV format)
- Context-sensitive Help – 100% identical to documentation
- Keypad macro editor for generating application specific key/touch functions
- Recipe management
- Synchronize the PLC clock
- User-defined report printouts
- Download and upload of projects
- Upload protection of projects
- Scaling and limit value scan of variables in MI4
- Initiation of functions via the PLC (e.g. language selection, print functions, clock setting, recipe loading)
- Password protection (issue of up to 8 different access rights)
- Curve diagrams with time axis (not with MI4-130-TA1, MI4-137-TA1)
- Zoom function in trend diagrams (in X, Y axes)
- Scaling of variable tags
- Configurable display instruments (meters)

### System requirements

- IBM PC or compatible systems
- Windows 98SE, ME, NT, 2000, XP
- 70 MByte hard disk memory
- VGA graphics card
- Pentium processor
- 32 MB RAM working memory
- CD-ROM drive

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Description	For use with	Type Article no.	Price See Price List	Std. pack
<b>MI4 accessories</b>				
Memory module	512 kB Flash-RAM memory expansion	MI4-110-KG1/-KG2 MI4-140-KI1	ZB4-512-SF1 200857	1 off
Memory card	8 MB (SSFDC)	All graphics and touch operator panels (except MI4-130-TA1, MI4-137-TA1)	ZB4-908-SF1 223100	
Drive for memory card	Drive for connection to PC parallel port, for fast project download	All graphics and touch operator panels (except MI4-130-TA1, MI4-137-TA1)	ZB4-510-EG1 230617	
Bus terminating resistor (Suconet K)	Bus termination for the last station on the line Plug design	Suconet K interface	ZB4-043-AD1 203512	
Battery	Spare battery for data memory backup 3 V lithium Not rechargeable Operating life at least 1 year Replaceable	All MI4 devices, except MI4-110-KC1/-KG2	ZB4-280-BT1 203513	2 off
Insert labels	Insert labels for free user inscription (for 5 units of a given device type), Labeling software	All MI4 devices, except touch operator panels MI4-130-TA1, MI4-137-TA1	ZB4-301-BS2 230610	1 off
Magnetic hook	Magnet fixing	MI4-140-KF1	ZB4-502-GZ2 230616	1 off
MI4-CFG-1-... software package Windows 98SE/ME/NT/2000/XP Software for configuration of all MI4 devices. Package: one CD incl. electr. documentation for the configurator and equipment manuals, as well as short-form instructions.				
German	–	–	MI4-CFG-1-D 200632	1 off
English	–	–	MI4-CFG-1-GB 200633	1 off
Upgrades <sup>1)</sup> Package as for initial purchase, observe ordering conditions				
German	–	–	MI4-CFG-1-D-U 200634	1 off
English	–	–	MI4-CFG-1-GB-U 200635	1 off

**Notes**

<sup>1)</sup> **Ordering conditions for upgrades:**  
To use an upgrade, a previous version must be installed.  
When the upgrade is installed, the system searches for a previous version.  
The upgrade is the same as the standard version.

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Description	For use with	Type Article no.	Price See Price List	Std. pack
<b>MI4 accessories</b>				
<b>Fieldbus interface</b>				
<b>Plug-in interface module</b>				
Suconet K	–	All MI4 devices	<b>ZB4-501-IF1</b> 229813	1 off
PROFIBUS-DP	9600 Bit/s – 12 MBit/s		<b>ZB4-504-IF1</b> 206858	
PROFIBUS-DP	9600 Bit/s – 1.5 MBit/s		<b>ZB4-504-IF2</b> 232146	
Siemens MPI	Electrical isolation; 1.5 Mbit/s		<b>ZB4-505-IF1</b> 224461	
Siemens MPI	Without electrical isolation; 1.5 MBit/s		<b>ZB4-505-IF2</b> 229816	
DeviceNet	–		<b>ZB4-506-IF1</b> 229814	
CANopen	–		<b>ZB4-507-IF1</b> 229815	
<b>Data plug</b>				
<b>Assembly kit without cable</b>				
–	Socket, 9-pole Straight cable entry	–	<b>ZB4-409-DS1</b> 203506	1 off
–	Pins, 9-pole Straight cable entry	Suconet K interface	<b>ZB4-209-DS1</b> 203507	
–	Pins, 9-pole Cable entry, angled 90	PROFIBUS-DP	<b>ZB4-209-DS2</b> 206982	
<b>Connection cable for MI4 units</b>				
• Length 2 m				
With PC	–	For configuration	<b>ZB4-24A-KP1</b> 200625	1 off
With XC100/200	–	SUCOM-A protocol	<b>XT-SUB-D15/RJ45</b> 283450	
With PS4-300 PS4-200 PS4-150	–	SUCOM-A protocol (RS 232C)	<b>ZB4-2B7-KB1</b> 200627	
With PS4-300, PS4-200, PS4-150	–	Suconet-K protocol (RS485)	<b>ZB4-231-KB1</b> 200630	
With PS416	–	Suconet-K protocol (RS485) and SUCOM-A protocol (RS485)	<b>ZB4-233-KB2</b> 200631	
With easy	Adapter, 9-pole plug connector, 35-pole socket, cable	easy800 protocol	<b>ZB4-03B-AD1</b> 257176 <b>EASY800-PC-CAB</b> 256277	





#### Product description

The MV4 series consists of touch operator panels based on infra-red technology. The spectrum ranges from a monochrome 5.7" STN display with a resolution of 320 × 240 pixels up to a color 15" TFT display with a resolution of 1024 × 768. All units have full graphics capability, with 256 colors/grey levels. All units feature a real glass front panel that is highly robust and resistant to scratches and chemicals. All these devices can be project-programmed with the MI4 configurator MI4-CFG.

#### Application

The MV4 touch operator panels have been designed for economical machine and system control. They offer various different displays, memory sizes and interfaces, depending on the information requirements and the task at hand.

#### Features

- Infra-red touch technology
- Non-reflective, scratchproof glass front
- Full graphics, 256 colors/grey levels
- Revers-polarity protected 24 V DC or 100 – 240 V AC supply connection
- IP65 degree of protection at front
- Brightness and contrast controls for the display
- Screen saver
- Touch deactivation
- Gateway function for MV4 units with 2 communication modules
- Bar graph and trend diagrams
- Up to 100 trend diagrams (32 curves per diagram) with time axis
- Zoom function for trend diagrams
- Standard keypads and user-defined keypads can be displayed
- Error/history memory
- Recipe management (up to 5 MB recipe memory)
- Password management (200 levels, 500 users)
- Up to 100 project languages
- Real-time clock
- Synchronize the PLC clock
- Serial printer interface
- Parallel interface (600 series)
- Ethernet interface (600 series)

#### Engineering

Manufacturer-specific function blocks support the connection of MV4 units to Moeller PLC systems. A function block is also available for communication with Siemens PLC systems (S7-300/S7-400 via PROFIBUS-DP), which is can be downloaded from the Internet free of charge, in the form of an Application Note. For communication with Allen-Bradley PLC systems via DeviceNet, there is another function block available as an Application Note that can be downloaded from the Internet free of charge. No function block is necessary for communication with Siemens PLC systems via MPI. The connection via PROFIBUS-DP and the Siemens MPI interface is made with the cable ZB4-900-DS2 and the corresponding plug ZB4-209-DS2. Communication modules and PCMCIA cards must be ordered separately. A demo version of the MV4 configurator can be downloaded from the Internet.

#### Communication/networking

All MV4 units can be connected to Moeller PLC systems through the PROG PORT/ SYSTEM PORT interface, using SUCOM-A. The communication cards ZB4-601-IF1, ZB4-609-IF1, ZB4-604-IF1, ZB4-606-IF1 and ZB4-607-IF1 allow the MV4 units to be connected to a very wide range of control systems. MV4 units in the 600 series are also fitted with an Ethernet interface. The Ethernet interface can be used for uploads and downloads of projects, recipes and password data. In addition, graphics data (trend data) can be loaded into the PC from the MV4.

#### Programming

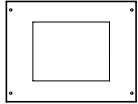
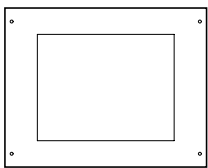
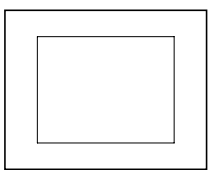
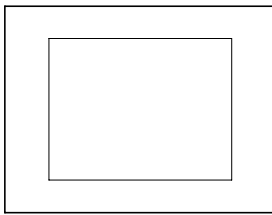
With the MV4 configurator MV4-CFG-1 (Galileo).

#### Documentation

Documentation in the form of PDF files in English and German is included in the M14 configurator MI4-CFG-1.

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Display	Resolution		Screen diagonal	Memory		PCMCIA slots	Interfaces on board
	Pixels	Inches		MByte	MByte		
<b>Touch operator panel</b>							
<ul style="list-style-type: none"> <li>• Infra-red touch function</li> <li>• Alarm management, history memory, trend display</li> <li>• Language selection</li> </ul>							
	Passive mono-chrome (STN)	320 × 240	5.7	4	–	–	1 × slot for communication modules 1 × system port RS232C (programming, SUCOM A or serial printer connection)
	Passive mono-chrome (STN)	320 × 240	5.7	4	–	–	
	Passive color (STN)	320 × 240	5.7	4	–	–	
	Passive color (STN)	320 × 240	5.7	4	–	–	
	Passive mono-chrome (STN)	640 × 480	10.4	4	–	–	2 × slots for communication modules 1 × system port RS232C (programming, SUCOM A or serial printer connection)
	Passive mono-chrome (STN)	640 × 480	10.4	4	–	–	
	TFT	640 × 480	10.4	4	–	–	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	1	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	1	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	1	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	2	2 × slot for communication modules 1 × Ethernet 10/100 Mbps 1 × System port RS232C (SUCOM-A or serial printer) 1 × parallel interface (printer)
	Active color (TFT)	640 × 480	10.4	–	4 – 64	2	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	2	
	Active color (TFT)	640 × 480	10.4	–	4 – 64	2	
	Active color (TFT)	1024 × 768	15	–	4 – 64	2	
	Active color (TFT)	1024 × 768	15	–	4 – 64	2	
	Active color (TFT)	1024 × 768	15	–	4 – 64	2	
	Active color (TFT)	1024 × 768	15	–	4 – 64	2	

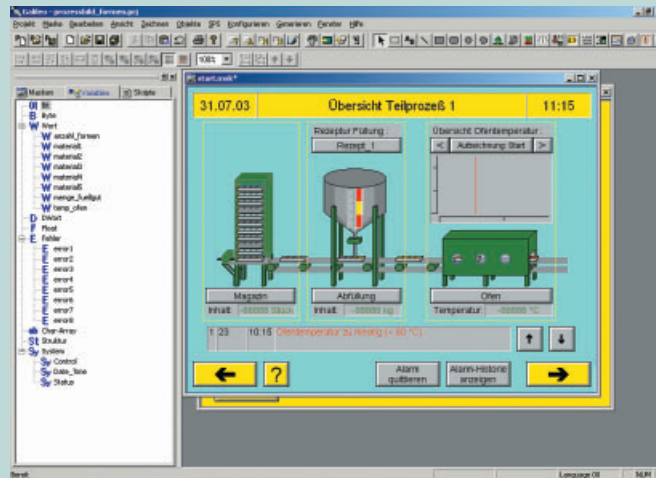
**Notes** Interfaces on board: see driver list for other connections.  
Slots for communication cards: communication cards must be ordered separately.

Device features	Front implementation	Input voltage	Type Article no.	Price See Price List	Std. pack	Notes
Passwort management, project simulation on a PC, battery-buffered real-time clock, trend display, alarm management, history memory, language selection	Aluminium, powder coated, RAL 7031 (blue-grey)	24 V DC	MV4-150-TA1 210531		1 off	–
	Stainless steel, brushed matt		MV4-150-TA1-XX1 227725			
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-450-TA1 210532			
	Stainless steel, brushed matt		MV4-450-TA1-XX1 227726			
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-170-TA1 210533			
	Stainless steel, brushed matt		MV4-170-TA1-XX1 227729			
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-570-TA5 272249			
	Aluminium, powder coated, RAL 7031 (blue-grey)		MV4-570-TA1 210535			
	Stainless steel, brushed matt	MV4-570-TA1-XX1 227731				
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-570-TA2 210560			
	Stainless steel, brushed matt		MV4-570-TA2-XX1 227732			
	Aluminium, powder coated, RAL 7031 (blue-grey)	24 V DC	MV4-670-TA1 224466			
	Stainless steel, brushed matt	24 V DC	MV4-670-TA1-XX1 227735			
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-670-TA2 224465			
	Stainless steel, brushed matt	100 – 240 V AC	MV4-670-TA2-XX1 227736			
	Aluminium, powder coated, RAL 7031 (blue-grey)	24 V DC	MV4-690-TA1 224467			
	Stainless steel, brushed matt	24 V DC	MV4-690-TA1-XX1 227737			
	Aluminium, powder coated, RAL 7031 (blue-grey)	100 – 240 V AC	MV4-690-TA2 224468			
Stainless steel, brushed matt	100 – 240 V AC	MV4-690-TA2-XX1 227738				

Memory card for project/recipe memory: the PCMCIA memory cards must be ordered separately.

HMI

HMI



### Application

The configuration software MV4-CFG-1 (Galileo) is used for the creation of application forms for all MV4 devices, and runs under Windows 98SE, ME, NT, 2000, XP. The software is supplied on CD-ROM together with German and English documentation in PDF format.

### Features

- Online project simulation on the PC
- User-definable printout forms with any variables
- Context-sensitive Help – 100% identical to documentation
- Error/history memory
- Recipe management
- Password management (200 levels, 500 users)
- Design tool for creating and managing 100 project languages
- 100 trend diagrams (32 curves per diagram) with time axis
- Zoom function in trend diagrams (in X, Y axes)
- Character sets: Roman, Cyrillic, Greek, Hebrew, Hiragana/Katakana
- Scaling of variable tags
- Dynamic limit values
- Value conversion and unit of measure conversion
- Standard keypads and user-defined keypads
- Drawing editor (line, rectangle, ellipse, polygon, text, bitmap)
- Import of 15 different graphic formats (.bmp, .tif, .jpg, .gif, ... etc.)
- Real-time clock (synchronisation with PLC clock)
- Parameter list, Script language
- Script functions (cyclic and event-controlled)

### System requirements

- IBM PC or compatible systems
- Windows 98SE, ME, NT, 2000, XP
- 50 MByte hard disk memory
- Recommended resolution XGA (at least SVGA)
- Pentium processor
- 32 MB RAM working memory
- CD-ROM drive
- PCMCIA drive (for MV4-5... and MV4-6... project programming)

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For use with		Type Article no.	Price See Price List	Std. pack
<b>MV4 accessories</b>				
Software package MV4-CFG-1-... Windows 98SE/ME/NT/2000/XP Software for configuration of all MV4 devices. Package: one CD incl. electr. documentation for the configurator and equipment manuals in English and German				
-	-	<b>MV4-CFG-1</b> 224459		1 off
Upgrades Package as for initial purchase, observe ordering conditions				
-	-	<b>MV4-CFG-1-U</b> 224460		1 off
Memory cards				
PCMCIA PC card ATA				
8 MByte Flash	MV4-5..., MV4-6...	<b>ZB4-908-SC1</b> 210542		1 off
16 MByte Flash		<b>ZB4-916-SC1</b> 210544		
32 MByte Flash		<b>ZB4-932-SC1</b> 216370		
Communication cards				
Plug-in card				
Multi-protocol card	Communication using Suconet K, SUCOM-A and more than 40 other communication protocols Electrically isolated and selectable interfaces: RS232C/RS422/RS485/TTY	<b>ZB4-601-IF1</b> 210546		1 off
Multi-protocol card	Communication through Suconet K, SUCOM-A, Siemens MPI, and more than 40 other PLC communication protocols Electrically isolated and selectable interfaces: RS232C/RS422/RS485/TTY	<b>ZB4-609-IF1</b> 210548		
PROFIBUS-DP	Communication via PROFIBUS-DP	<b>ZB4-604-IF1</b> 210547		
DeviceNet	Communication via DeviceNet	<b>ZB4-606-IF1</b> 210900		
CANopen	Communication via CANopen	<b>ZB4-607-IF1</b> 267421		
Data plug for PROFIBUS-DP and MV4 MPI interface				
• Assembly kit without cable • Pins, 9-pole				
-	PROFIBUS-DP	<b>ZB4-209-DS2</b> 206982		1 off
Connection cable for MV4 units				
Length 2 m				
With PC, serial printer	Configuration, serial printer	<b>ZB4-244-PK1</b> 210549		1 off
With PS4-300, PS4-200, PS4-150	SUCOM-A protocol (RS 232C)	<b>ZB4-237-KB1</b> 210554		
With PS4-300, PS4-200, PS4-150	Suconet-K protocol (RS485)	<b>ZB4-231-KB1</b> 200630		
With PS416	Suconet-K protocol (RS485) and SUCOM-A protocol (RS485)	<b>ZB4-233-KB2</b> 200631		
With XC100/200, length 3 m	Sucom-A protocol	<b>XT-SUB-D/RJ45</b> 262186		
Adapter				
9-pole SUB-D socket to 9-pol SUB-D socket				
-	SUCOM-A protocol (RS232C) via MV4 programming interface	<b>LT307.512.1</b> 232147		1 off

HMI



		Text operator panel					
		MI4-110-KC1	MI4-117-KC1	MI4-110-KD1	MI4-117-KD1	MI4-110-KG1	MI4-110-KG2
<b>General</b>							
Standards		IEC/EN 61131-2, EN 50178					
Ambient temperature							
Operation	°C	0 – 50	0 – 50	0 – 50	0 – 50	0 – 50	0 – 50
Storage	°C	-20/70	-20/70	-20/70	-20/70	-20/70	-20/70
Electromagnetic compatibility (EMC)		→ Page 4/59					
Degree of protection		IP65, front					
Vibration resistance	g	Constant 1g/f = 0 to 150 Hz					
Shock resistance, shock duration 11 ms	g	> 15	> 15	> 15	> 15	> 15	> 15
Keyboard/touch screen reliability	Operations	> 3000000	> 3000000	> 3000000	> 3000000	> 3000000	> 3000000
Terminal capacity	mm <sup>2</sup>	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5
Connection type		Plug-in screw terminal					
Weights	kg	1	1	1	1	1.1	1.1
Power supply							
Rated voltage	U <sub>e</sub> V DC	24	24	24	24	24	24
Admissible range	V DC	18 – 30	18 – 30	18 – 30	18 – 30	18 – 30	18 – 30
Rated current	I <sub>e</sub> mA	250	250	250	250	300	300
Fuse		Electronic					
<b>Display</b>							
Back-lighting		LED					
Type		Monochrome					
Operating life of the background lighting in 1000 hrs. (without screen saver)		–					
Colors/grey scales		–					
Lines × characters		4 × 20	4 × 20	4 × 20	4 × 20	4 × 20	4 × 20
Resolution	Pixels	120 × 32	120 × 32	120 × 32	120 × 32	120 × 32	120 × 32
Display area	mm	70 × 21	70 × 21	70 × 21	70 × 21	70 × 21	70 × 21
Screen diagonal	Inches	–					
User-definable characters		256	256	256	256	256	256
<b>Memory</b>							
Project flash memory	kByte	512	512	512	512	512	512
Recipe memory	kByte	–	–	16	16	16	–
Project memory expansion	kByte	–	–	–	–	512	512
<b>Interfaces</b>							
PLC port (RS232C/RS485)		SUCOM-A, Programming	SUCOM-A, Programming	SUCOM-A, Programming	SUCOM-A, Programming	SUCOM-A	SUCOM-A Programming
PC/printer port (RS232C)		–	–	–	–	Programming Printer connection	–
AUX port (fieldbus interface) <sup>1)</sup>		Yes	No, CAN interface is integrated	Yes	No, CAN interface is integrated	Yes	Yes

Notes <sup>1)</sup> One slot is available for modules. The modules for fieldbus connection must be ordered separately

		Graphic operator panel				
		MI4-140-KF1	MI4-140-KI1	MI4-150-KI1	MI4-450-KI1	MI4-570-KH1
<b>General</b>						
Standards		IEC/EN 61131-2, EN 50178				
Ambient temperature						
Operation	°C	0 – 50	0 – 50	0 – 50	0 – 50	0 – 50
Storage	°C	-20/70	-20/70	-20/70	-20/70	-20/70
Electromagnetic compatibility (EMC)		→ Page 4/59				
Degree of protection		IP65, front				
Vibration resistance	g	Constant 1g/f = 0 to 150 Hz				
Shock resistance, shock duration 11 ms	g	> 15	> 15	> 15	> 15	> 15
Keyboard/touch screen reliability	Operations	> 3000000	> 3000000	> 3000000	> 3000000	> 3000000
Terminal capacity	mm <sup>2</sup>	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5
Connection type		Plug-in screw terminal				
Weights	kg	1.5 incl. cable	2	1.9	1.9	2.5
Power supply						
Rated voltage	U <sub>e</sub> V DC	24	24	24	24	24
Admissible range	V DC	18 – 30	18 – 30	18 – 30	18 – 30	18 – 30
Rated current	I <sub>e</sub> mA	300	400	600	600	700
Fuse		Electronic	Electronic	2 A (slow)	2 A (slow)	Electronic
<b>Display</b>						
Back-lighting		LED	LED	CCFL	CCFL	CCFL
Type		Monochrome	Monochrome	Monochrome	STN color	TFT
Operating life of the background lighting in 1000 hrs. (without screen saver)		–	–	20	25	50
Colors/grey scales		–	–	–	16	256
Lines × characters		8 × 20	8 × 40	16 × 40	16 × 40	30 × 80
Resolution	Pixels	120 × 64	240 × 64	320 × 240	320 × 240	640 × 480
Display area	mm	66 × 33	127 × 34	121 × 91	121 × 91	212 × 159
Screen diagonal	Inches	–	–	5.6	5.6	10.4
User-definable characters		256	256	256	256	256
<b>Memory</b>						
Project flash memory	kByte	512	512	8000	8000	8000
Recipe memory	kByte	16	16	32	32	32
Project memory expansion	kByte	–	512	–	–	–
<b>Interfaces</b>						
PLC port (RS232C/RS485)		SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A
PC/printer port (RS232C)		Programming Printer connection				
AUX port (fieldbus interface) <sup>1)</sup>		Yes, only fieldbus interfaces ZB4-501-IF1, ZB4-505-IF1 are possible	Yes	Yes	Yes	Yes

Notes <sup>1)</sup> One slot is available for modules. The modules for fieldbus connection must be ordered separately



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		Touch operator panel			
		MI4-130-TA1	MI4-137-TA1	MI4-140-TA1	MI4-150-TA1
<b>General</b>					
Standards		IEC/EN 61131-2, EN 50178			
Ambient temperature					
Operation	°C	0 – 50	0 – 50	0 – 45	0 – 45
Storage	°C	-20/70	-20/70	-20/70	-20/70
Electromagnetic compatibility (EMC)		→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59
Degree of protection		IP65, front			
Vibration resistance	g	Constant 1g/f = 0 to 150 Hz			
Shock resistance, shock duration 11 ms	g	> 15	> 15	> 15	> 15
Keyboard/touch screen reliability	Operations	> 3000000	> 3000000	> 3000000	> 3000000
Terminal capacity	mm <sup>2</sup>	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5
Connection type		Plug-in screw terminal			
Weights	kg	1	1	1.3	1.4
Power supply					
Rated voltage	U <sub>e</sub> V DC	24	24	24	24
Admissible range	V DC	18 – 30	18 – 30	18 – 30	18 – 30
Rated current	I <sub>e</sub> mA	400	400	600	600
Fuse		Electronic	Electronic	Electronic	Electronic
<b>Display</b>					
Back-lighting		LED	LED	LED	CCFL
Type		Monochrome	Monochrome	Monochrome	Monochrome
Operating life of the background lighting in 1000 hrs. (without screen saver)		50	50	50	25
Colors/grey scales		–	–	–	–
Lines × characters		16 × 40	16 × 40	16 × 40	16 × 40
Resolution	Pixels	320 × 240	320 × 240	320 × 240	320 × 240
Display area	mm	77 × 58	77 × 58	121 × 91	121 × 91
Screen diagonal	Inches	3.8	3.8	5.6	5.6
User-definable characters		256	256	256	256
<b>Memory</b>					
Project flash memory	kByte	512	512	8000	8000
Recipe memory	kByte	32	32	32	32
<b>Interfaces</b>					
PLC port (RS232C/RS485)		SUCOM-A, Programming	SUCOM-A, Programming	SUCOM-A	SUCOM-A
PC/printer port (RS232C)		–	–	Programming Printer connection	–
AUX port (fieldbus interface) <sup>1)</sup>		Yes	No, CAN interface is integrated	Yes	Yes

Notes

<sup>1)</sup> One slot is available for modules.  
The modules for fieldbus connection must be ordered separately

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		MI4-450-TA1	MI4-550-TA1	MI4-160-TA1	MI4-570-TA1	MI4-580-TA1	MI4-590-TA1
<b>General</b>							
Standards		IEC/EN 61131-2, EN 50178					
Ambient temperature							
Operation	°C	0 – 45	0 – 45	0 – 45	0 – 45	0 – 45	0 – 45
Storage	°C	-20/70	-20/70	-20/70	-20/70	-20/70	-20/70
Electromagnetic compatibility (EMC)		→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59
Degree of protection		IP65, front					
Vibration resistance	g	Constant 1g/f = 0 to 150 Hz					
Shock resistance, shock duration 11 ms	g	> 15	> 15	> 15	> 15	> 15	> 15
Keyboard/touch screen reliability	Operations	> 3000000	> 3000000	> 3000000	> 3000000	> 3000000	> 3000000
Terminal capacity	mm <sup>2</sup>	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5	2 × 1.5
Connection type		Plug-in screw terminal					
Weights	kg	1.4	1.4	2.25	2.25	2.85	3.85
Power supply							
Rated voltage	U <sub>e</sub> V DC	24	24	24	24	24	24
Admissible range	V DC	18 – 30	18 – 30	18 – 30	18 – 30	18 – 30	18 – 30
Rated current	I <sub>e</sub> mA	600	600	600	700	800	1200
Fuse		Electronic	Electronic	Electronic	Electronic	Electronic	Electronic
<b>Display</b>							
Back-lighting		CCFL	CCFL	CCFL	CCFL	CCFL	CCFL
Type		Color (STN)	Color (TFT)	Monochrome	Color (TFT)	Color (TFT)	Color (TFT)
Operating life of the background lighting in 1000 hrs. (without screen saver)		25	25	25	50	50	50
Colors/grey scales		16	256	–	256	256	256
Lines × characters		16 × 40	16 × 40	30 × 80	30 × 80	40 × 100	48 × 128
Resolution	Pixels	320 × 240	320 × 240	640 × 480	640 × 480	800 × 600	1024 × 768
Display area	mm	121 × 91	121 × 91	196 × 146	218 × 159	246 × 184	304 × 228
Screen diagonal	Inches	5.6	5.6	9.6	10.4	12.1	15
User-definable characters		256	256	256	256	256	256
<b>Memory</b>							
Project flash memory	kByte	8000	8000	8000	8000	8000	8000
Recipe memory	kByte	32	32	32	32	32	32
<b>Interfaces</b>							
PLC port (RS232C/RS485)		SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A
PC/printer port (RS232C)		–	–	Programming Printer connection	–	–	–
AUX port (fieldbus interface) <sup>1)</sup>		Yes	Yes	Yes	Yes	Yes	Yes

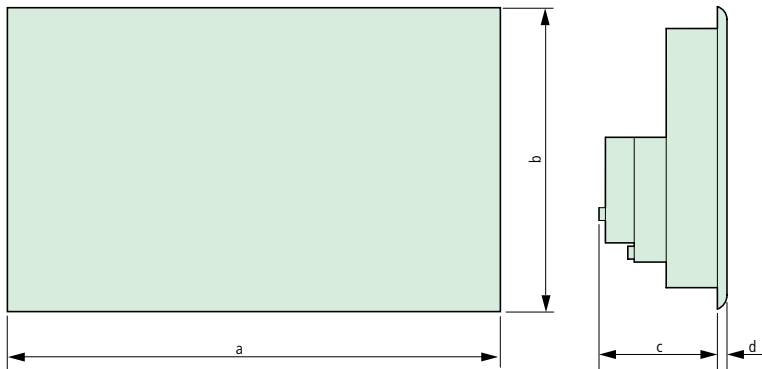
Notes

<sup>1)</sup> One slot is available for modules.  
The modules for fieldbus connection must be ordered separately

		Touch operator panel			
		MV4-150-TA1(-XX1)	MV4-450-TA1(-XX1)	MV4-170-TA1(-XX1)	MV4-570-TA5
<b>General</b>					
Ambient temperature	°C	0/50	0/50	0/50	0/50
Ambient temperature for storage	°C	20/60	20/60	20/60	20/60
Relative humidity, no condensation (IEC 60 068-2-30)	%	10 – 85	10 – 85	10 – 85	10 – 85
Shock resistance (half sinewave, 50 g/20 ms)		IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27
Vibration resistance (10 - 200 - 10 Hz/1.5 g)		IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6
Electromagnetic compatibility (EMC)		→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59
RFI voltage		–	–	–	–
RFI radiation		CISPR 11, EN 55011 Class A			
Degree of protection					
Front (NEMA 12) IEC/EN 60529		IP65	IP65	IP65	IP65
Rear		IP20	IP20	IP20	IP20
Weight	kg	Approx. 2.2	Approx. 2.2	Approx. 3.6	Approx. 3.6
<b>Display</b>					
Screen diagonal	Inches	5.7	5.7	10.4	10.4
Type		LCD passive mono-chrome (STN)	LCD passive color (STN)	LCD passive mono-chrome (STN)	LCD active color (TFT)
Resolution	Pixels	320 × 240	320 × 240	640 × 480	640 × 480
Display area	mm	115 × 86	115 × 86	212 × 158	212 × 158
Colors/grey scales		–/256	256/–	–/256	256/–
Contrast ratio (Normally)		24	25	18	30
Brightness (Normally)	cd/m²	140	110	75	70
Service life of back-lighting	Op. hours	20000	25000	25000	25000
<b>Front plate</b>					
Glass, non-reflective	mm	2	2	3	3
<b>Operation</b>					
Operation		Optical grid in infra-red wavelengths (IR-Touch)			
Resolution					
Physical	Pixels	24 × 16 (13 × 15)	24 × 16 (13 × 15)	40 × 30 (16 × 16)	40 × 30 (16 × 16)
Logical	Pixels	47 × 31 (7 × 8)	47 × 31 (7 × 8)	79 × 59 (8 × 8)	79 × 59 (8 × 8)
<b>Memory</b>					
Project/recipe memory	MByte	4 (for project and recipe data)			
<b>Power supply</b>					
Rated voltage	V	24 DC	24 DC	24 DC	24 DC
Admissible range	V	20.4 – 28.8 DC	20.4 – 28.8 DC	20.4 – 28.8 DC	20.4 – 28.8 DC
Absolute value with ripple	V DC	18.5 – 30.5	18.5 – 30.5	18.5 – 30.5	18.5 – 30.5
Nominal frequency	Hz	–	–	–	–
Power consumption	$P_{max}$ W	20	20	20	20
Fuse (externally accessible)	A slow	2.5	2.5	2.5	2.5
<b>Interfaces</b>					
Progr. port/system port/printer		RS232, not isolated or floating			
Slots for communication modules		1	1	1	1
Communication interface on board		SUCOM-A	SUCOM-A	SUCOM-A	SUCOM-A
Parallel printer interface		–	–	–	–

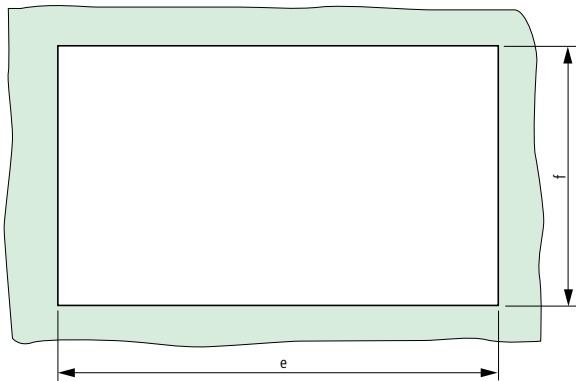
		Touch operator panel					
		MV4-570-TA1(-XX1)	MV4-570-TA2(-XX1)	MV4-670-TA1(-XX1)	MV4-670-TA2(-XX1)	MV4-690-TA1(-XX1)	MV4-690-TA2(-XX1)
<b>General</b>							
Ambient temperature	°C	0/50	0/50	0/50	0/50	0/50	0/50
Ambient temperature for storage	°C	20/60	20/60	20/60	20/60	-20/60	20/60
Relative humidity, no condensation (IEC 60 068-2-30)	%	10 – 90	10 – 90	10 – 90	10 – 90	10 – 90	10 – 90
Shock resistance (half sinewave, 50 g/20 ms)		IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27	IEC 60068-2-27	IEC 60 068-2-27	IEC 60068-2-27
Vibration resistance (10 - 200 - 10 Hz/1.5 g)		IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6	IEC 60068-2-6	IEC 60 068-2-6	IEC 60068-2-6
Electromagnetic compatibility (EMC)		→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59	→ Page 4/59
RFI voltage		–	CISPR 11, EN 55011 Class A	–	CISPR 11, EN 55011 Class A	–	CISPR 11, EN 55011 Class A
RFI radiation		CISPR 11, EN 55011 Class A					
Degree of protection							
Front (NEMA 12) IEC/EN 60529		IP65	IP65	IP65	IP65	IP65	IP65
Rear		IP20	IP20	IP20	IP20	IP20	IP20
Weight	kg	Approx. 4.8	Approx. 4.8	Approx. 5.1	Approx. 5.1	Approx. 8.8	Approx. 8.8
<b>Display</b>							
Screen diagonal	Inches	10.4	10.4	10.4	10.4	15	15
Type		LCD active color (TFT)	LCD active color (TFT)	LCD active color (TFT)	LCD active color (TFT)	LCD active color (TFT)	LCD active color (TFT)
Resolution	Pixels	640 × 480	640 × 480	640 × 480	640 × 480	1024 × 768	1024 × 768
Display area	mm	212 × 158	212 × 158	212 × 158	212 × 158	304 × 228	304 × 228
Colors/grey scales		256/–	256/–	256/–	256/–	256/–	256/–
Contrast ratio (Normally)		Min. 100	Min. 100	250	250	300	300
Brightness (Normally)	cd/m²	250	250	250	250	200	200
Service life of back-lighting	Op. hours	25000	25000	50000	50000	50000	50000
<b>Front plate</b>							
Glass, non-reflective	mm	3	3	3	3	3	3
<b>Operation</b>							
Operation		Optical grid in infra-red wavelengths (IR-Touch)					
Resolution							
Physical	Pixels	40 × 30 (16 × 16)	40 × 30 (16 × 16)	40 × 30 (16 × 16)	40 × 30 (16 × 16)	54 × 42 (19 × 18)	54 × 42 (19 × 18)
Logical	Pixels	79 × 59 (8 × 8)	79 × 59 (8 × 8)	79 × 59 (8 × 8)	79 × 59 (8 × 8)	107 × 83 (10 × 9)	107 × 83 (10 × 9)
<b>Memory</b>							
Project/recipe memory	MByte	4 – 64 (for project and recipe data, PC card as per JEIDA/PCMCIA Type 1 or 2 ATA Flash (1 PCMCIA slot))					
<b>Power supply</b>							
Rated voltage	V	24 DC	100 – 240 AC	24 DC	100 – 240 AC	24 DC	100 – 240 AC
Admissible range	V	20.4 – 28.8 DC	85 – 264 AC	20.4 – 28.8 DC	85 – 264 AC	20.4 – 28.8 DC	85 – 264 AC
Absolute value with ripple	V DC	18.5 – 30.5	–	18.5 – 30.5	–	18.5 – 30.5	–
Nominal frequency	Hz	–	50/60	–	50/60	–	50/60
Power consumption	$P_{max}$ W	max. 40	max. 40	max. 40	max. 40	max. 50	max. 50
Fuse (externally accessible)	A slow	4	1	4	1	4	1
<b>Interfaces</b>							
Progr. port/system port/printer		RS232, not isolated or floating					
Slots for communication modules		2	2	2	2	2	2
Communication interface on board		SUCOM-A	SUCOM-A	Ethernet 10 Base-T/100 Base-TX, RJ-45; SUCOM-A			
Parallel printer interface		–	–	●	●	●	●

Display and Operator Units

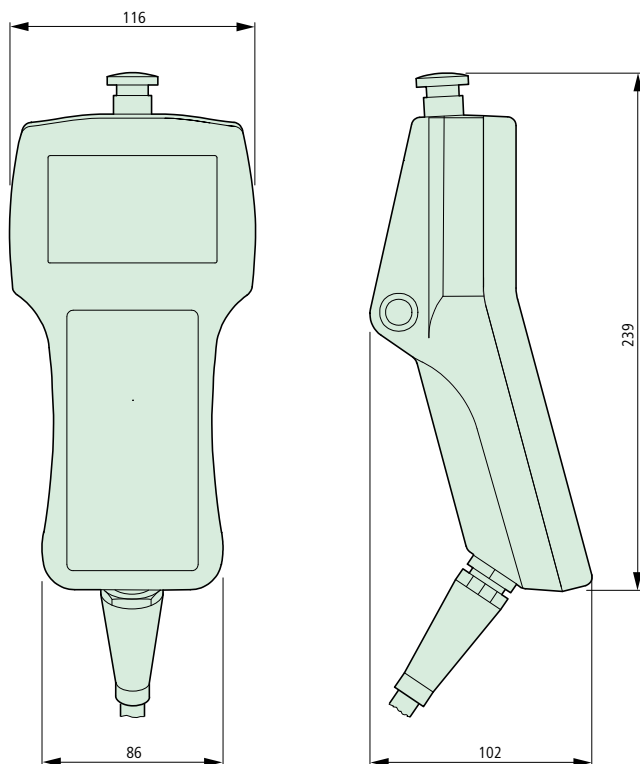


Type	a	b	c	d	e	f
MI4-110-KC1	149	109	60	5	136	96
MI4-117-KC1	149	109	60	5	136	96
MI4-110-KD1	149	109	52	5	136	96
MI4-117-KD1	149	109	52	5	136	96
MI4-110-KG1	141	176	76	5	128	163
MI4-110-KG2	141	176	76	5	128	163
MI4-140-KI1	220	176	71	5	207	163
MI4-150-KI1	275	220	80	5	262	207
MI4-450-KI1	275	220	80	5	262	207
MI4-570-KH1	311	276	80	5	292	257
MI4-130-TA1	149	109	61	5	136	96
MI4-137-TA1	149	109	61	5	136	96
MI4-140-TA1	187	147	79	5	176	136
MI4-150-TA1	187	147	91	5	176	136
MI4-450-TA1	187	147	91	5	176	136
MI4-550-TA1	187	147	91	5	176	136
MI4-160-TA1	287	232	91	5	276	221
MI4-570-TA1	287	232	91	5	276	221
MI4-580-TA1	337	267	91	5	326	256
MI4-590-TA1	392	307	101	5	381	296

Mounting dimensions



MI4-140-KF1

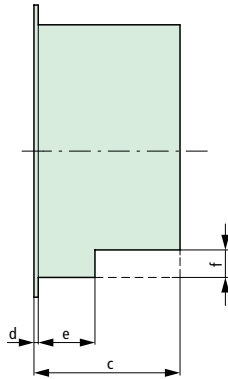
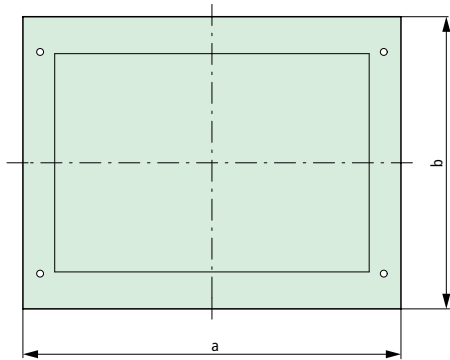


Moeller HPL0213-2004/2005

Display and Operator Units

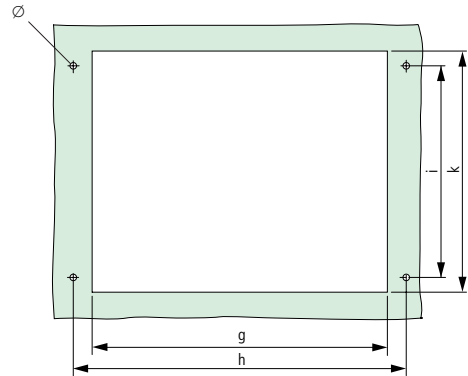
Mounting dimensions for units with holes at front at units with stud bolts

MV4 front-hole mounting



MV4-150-TA1  
MV4-450-TA1  
MV4-170-TA1

MV4-570-TA5  
MV4-570-TA1/-TA2

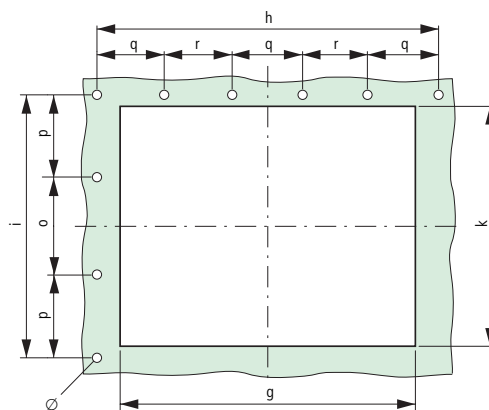
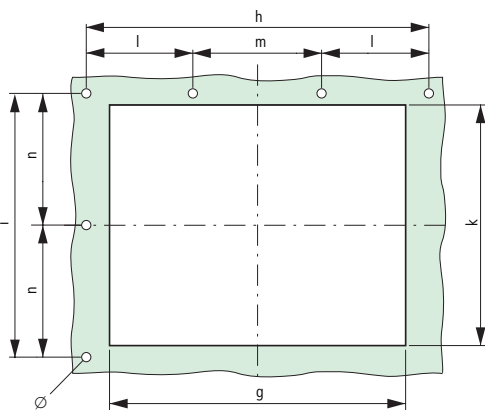


MV4 stud bolt mounting

MV4-150-TA1-XX1  
MV4-450-TA1-XX1

MV4-170-TA1-XX1  
MV4-570-TA1/-TA2-XX1  
MV4-670-TA1/-TA2-XX1  
MV4-690-TA1/-TA2-XX1

MV4-670-TA1/-TA2 (threaded stud bolts)  
MV4-690-TA1/-TA2 (threaded stud bolts)



Type	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	Ø
MV4-150-TA1	220	170	85	2.5	-	-	203	180	157	147	-	-	-	-	-	-	-	4.5
MV4-450-TA1	220	170	85	2.5	-	-	203	180	157	147	-	-	-	-	-	-	-	4.5
MV4-170-TA1	342	270	85	4	33	16	316	326	240	244	-	-	-	-	-	-	-	6
MV4-570-TA5	342	270	85	4	33	16	316	326	240	244	-	-	-	-	-	-	-	6
MV4-570-TA1	342	270	85	4	33	16	316	326	240	244	-	-	-	-	-	-	-	6
MV4-570-TA2	342	270	85	4	33	16	316	326	240	244	-	-	-	-	-	-	-	6
MV4-150-TA1-XX1	220	170	85	2.5	-	-	203	211	161	147	70.5	70	80.5	-	-	-	-	M4
MV4-450-TA1-XX1	220	170	85	2.5	-	-	203	211	161	147	70.5	70	80.5	-	-	-	-	M4
MV4-170-TA1-XX1	342	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-570-TA1-XX1	342	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-570-TA2-XX1	342	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-670-TA1-XX1	343	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-670-TA2-XX1	343	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-690-TA1-XX1	460	350	98	4	38	50	420	434	330	320	-	-	-	110	110	86.8	86.8	M6
MV4-690-TA2-XX1	460	350	98	4	38	50	420	434	330	320	-	-	-	110	110	86.8	86.8	M6
MV4-670-TA1	343	270	85	4	33	16	316	328	256	244	-	-	-	86	85	66	65	M5
MV4-670-TA2	343	270	85	4	33	16	316	328	256	244	-	-	-	53	85	66	65	M5
MV4-690-TA1	460	350	98	4	38	50	420	434	330	320	-	-	-	110	110	66	65	M6
MV4-690-TA1	460	350	98	4	38	50	420	434	330	320	-	-	-	110	110	66	65	M6

