

DATASHEET

EXOR

ZB4-505-IF2

OTHER SYMBOLS:

ZB4505IF2, ZB4505 IF2, ZB4505-IF2, ZB4 505IF2, ZB4 505 IF2, ZB4 505-IF2, ZB4-505IF2, ZB4-505 IF2, ZB4-505-IF2

**RGB ELEKTRONIKA AGACIAK CIACIEK
SPÓŁKA JAWNA**

Jana Długosza 2-6 Street
51-162 Wrocław
Poland

✉ biuro@rgbelektronika.pl

☎ +48 71 325 15 05



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MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- MI4 Touch Operator Panel

- Communication modules
- Accessories

- MI4-CFG-1 Engineering software

- Appendix

MI4 - Operator Panel : *Engineering*

Overview

- ***MI4 Text Operator Panel***

MI4 - Text Operator Panel - Display



MI4-110-KC1



**MI4-110-KG1
[MI4-110-KG2]**



**MI4-140-KI1
[MI4-140-KJ1]**



MI4-140-KF1

Display	LCD monochrome			
Background lighting	LED (Life span > 10 years)			
Contrast setting	Yes (via SYSTEM menu or functions in keypad macro editor)			
Number of colours	- (black / white)			
Lines x columns	4 x 20	4 x 20	8 x 40	8 x 20
Resolution	120 x 32 pixels	120 x 32 pixels	240 x 64 pixels	240 x 32 pixels
Display dimensions	70 x 21	70 x 21	127 x 34	66 x 33
Further features	Graphic capability (monochrome Bitmaps), scalable Fonts (4 steps), user definable characters (max. 256)			

MI4 - Text Operator Panel - Keypad



	MI4-110-KC1	MI4-110-KG1 [MI4-110-KG2]	MI4-140-KI1 [MI4-140-KJ1]	MI4-140-KF1
Keys, total	11	35	47	27
Keys, programmable	11	35	46 (Shift key not programmable)	27
Function keys (F-keys)	4	12	23 (Double function via Shift key)	9
Cursor keys	4	4 + 5	4 + 5	4
Number block	No (Input of values via cursor keys possible)	10 + 2	10 + 2	10 + 2
Other keys	Help, Clear, Enter	Clear, Enter	Shift, Clear, Enter	Clear, Enter
Peculiarities	-	-	[a)]	b)

a) Prepared for the installation of electromechanical operator units (6 x 16 mm and 1 x 22 mm diameter).

The foil must only be opened with a knife, drilling of the rear plastic enclosure is no longer required.

b) Emergency-stop switch and 2 deadman switches already installed and prewired.

MI4 - Text Operator Panel - LED, Memory



	MI4-110-KC1	MI4-110-KG1 [MI4-110-KG2]	MI4-140-KI1 [MI4-140-KJ1]	MI4-140-KF1
User LEDs, total	4	12	24 [32]	21
Project memory (Flash)	512 kB			
Recipe (batch) memory	No	16 kB [No]	16 kB	16 kB
Project memory extension	No	512 kB	512 kB	No

MI4 - Text Operator Panel - Interfaces



MI4-110-KC1



**MI4-110-KG1
[MI4-110-KG2]**



**MI4-140-KI1
[MI4-140-KJ1]**



MI4-140-KF1

PLC-PORT
(combined RS232/ RS485 interface)

1

PC / Printer PORT
(RS232 interface)

Not available

1
[Not available]

1

1

AUX PORT
(Interface for optional field bus communication module)

1

1

1

1
(Warning, only determined field bus communication modules can be used !)

Engineering via

PLC PORT

PC/Printer PORT
[PLC-PORT]

PC/Printer PORT

PC/Printer PORT

SUCOM-A via

PLC PORT

Printer connection via

Not available

PC/Printer PORT
[Not available]

PC/Printer PORT

PC/Printer PORT

MI4 - Text Operator Panel - Further Features



	MI4-110-KC1	MI4-110-KG1 [MI4-110-KG2]	MI4-140-KI1 [MI4-140-KJ1]	MI4-140-KF1
Battery	No	1 [No]	1	1
Real-time clock	Yes, but not battery buffered	Yes [Yes, but not battery buffered]	Yes	Yes
Password protect.	Yes			
Number of alarm messages	256	1024 [256]	1024	1024
Number of history alarm messages	0	256 [0]	256	256

MI4 - Text Operator Panel - Dimensions and Weights



MI4-110-KC1



**MI4-110-KG1
[MI4-110-KG2]**



**MI4-140-KI1
[MI4-140-KJ1]**



MI4-140-KF1

Dimensions W x H x D in mm	149 x 109 x 60	141 x 176 x 76	220 x 176 x 71 [275 x 220 x 77]	116 x 239 x 102
Weight in kg	1.0	1.1	2.0	1.5 (incl. cable)
Rated voltage U_e	24 V DC	24 V DC	24 V DC	24 V DC
Permissible range	18 to 30 V DC	18 to 30 V DC	18 to 30 V DC	18 to 30 V DC
Rated current I_e	250 mA	300 mA	400 mA	300 mA
Fuse	Electronic	Electronic	Electronic	Electronic
Connection cross-section	2 x 1.5 mm ²	2 x 1.5 mm ²	2 x 1.5 mm ²	2 x 1.5 mm ² (open cable end)

MI4 - Text Operator Panel - Limit Values



MI4-110-KC1



**MI4-110-KG1
[MI4-110-KG2]**



**MI4-140-KI1
[MI4-140-KJ1]**



MI4-140-KF1

Ambient temperature	0 to +50 °C
Storage temp.	-20 to +70 °C
Degree of protection, front	IP 65
Keypad reliability	> 3.000.000 switch operations
Standards	IEC/EN 61131-2 EN 50178
Approvals	UL / CSA (MI4-140-KF1: in preparation)

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- ***MI4 Graphic Operator Panel***

MI4 - Graphic Operator Panel - Display



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1



MI4-470-KH1



MI4-570-KH1

Display	LCD STN	LCD STN	LCD STN	LCD STN	LCD TFT
Background display	CCFL				
Contrast setting	Yes (via functions in keypad macro editor)				No
Number of colours	Black/white	16	Black/white	16	256
Lines x columns	16 x 40	16 x 40	30 x 80	30 x 80	30 x 80
Resolution	320x240 pixels	320x240 pixels	640x480 pixels	640x480 pixels	640x480 pixels
Display dimensions	121 x 91 / 5.6 "	121 x 91 / 5.6 "	194 x 146 / 9.6 "	212 x 159 / 10.4 "	212 x 159 / 10.4 "
Further features	Graphic capability (monochrome / colour Bitmaps), scalable Fonts (4 steps), user definable characters (max. 256), True-Type-Fonts in objects				

MI4 - Graphic Operator Panel - Keypad



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1



MI4-470-KH1



MI4-570-KH1

Keys, total	57	57	50	50	50
Keys, programmable	56 (Shift key not programmable)	56 (Shift key not programmable)			
Function keys (F-keys)	23 + 10	23 + 10			
Cursor keys	4 + 5				
Number block	10 + 2				
Other keys	Clear, Enter	Clear, Enter			
Peculiarities	a)	a)			

a) 10 function keys beside the display, permanently inscribed with F24 to F33.

MI4 - Graphic Operator Panel - LED, Memory



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1



MI4-470-KH1



MI4-570-KH1

User LEDs, total

24

24

**Project memory
(Flash)**

8 MB
(SSFDC card)

**Recipe (batch)
memory**

32 kB

**Project memory
extension**

No

Remark: SSFDC - Sony Smart Floppy Disc Card , also known as a Smart Media Card.

MI4 - Graphic Operator Panel - Interfaces



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1



MI4-470-KH1



MI4-570-KH1

PLC-PORT
(combined RS232/RS485 interface)

1

PC / Printer PORT
(RS232 interface)

1

AUX-PORT
(Interface for optional field bus communication module)

1

Engineering via

PC/Printer PORT

SUCOM-A via

PLC PORT

Printer connection via

PC/Printer PORT

MI4 - Graphic Operator Panel - Further Features



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1








MI4-470-KH1



MI4-570-KH1

Battery	1
Real-time clock	Yes
Password protection	Yes
Number of alarm messages	1024
Number of history alarm messages	1024
Screen saver	Yes

MI4 - Graphic Operator Panel - Dimensions and Weights

					
	MI4-150-KI1	MI4-450-KI1	MI4-170-KH1	MI4-470-KH1	MI4-570-KH1
Dimensions W x H x D in mm	275 x 220 x 80	275 x 220 x 80			
Weight in kg	1.9	1.9			
Rated voltage U_e	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
Permissible range	18 to 30 V DC	18 to 30 V DC	18 to 30 V DC	18 to 30 V DC	18 to 30 V DC
Rated current I_e	600 mA	600 mA			
Fuse	2 A slow-blow	2 A slow-blow	Electronic	Electronic	Electronic
Connection cross-section	2 x 1.5 mm ²	2 x 1.5 mm ²	2 x 1.5 mm ²	2 x 1.5 mm ²	2 x 1.5 mm ²

MI4 - Graphic Operator Panel - Limit Values



MI4-150-KI1



MI4-450-KI1



MI4-170-KH1



MI4-470-KH1



MI4-570-KH1

Ambient temperature	0 to +50 °C
Storage temp.	-20 to +70 °C
Degree of protection, front	IP 65
Keypad reliability	> 3.000.000 switch operations
Standards	IEC/EN 61131-2 EN 50178
Approvals	UL / CSA (MI4-170/-470/-570-KH1: in preparation)

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- ***MI4 Touch Operator Panel***

MI4 - Touch Operator Panel - Display



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}

MI4-160-TA1

MI4-470-TA1
[MI4-570-TA1]

MI4-580-TA1

MI4-590-TA1

Display	LCD STN mono [LCD STN colour] {LCD TFT}	LCD STN mono	LCD STN colour [LCD TFT]	LCD TFT	LCD TFT
Background lighting	CCFL				
Contrast setting	Yes, with STN devices (via keypad macro editor). All devices temperature compensated.				
Number of colours	Black/white [16] { 256 }	Black/white	16 [256]	256	256
Lines x columns	16 x 40	30 x 80	30 x 80	40 x 100	48 x 128
Resolution	320 x 240 pixels	640 x 480 pixels	640 x 480 pixels	800 x 600 pixels	1024 x 768 pixels
Display dimensions	121 x 91 / 5.6 "	196 x 146 / 9.6 "	218 x 159 / 10.4 "	246 x 184 / 12.1 "	304 x 228 / 15.0 "
Further features	Graphic capability (monochrome Bitmaps), scalable Fonts (4 steps), user definable characters (max. 256)				

MI4 - Touch Operator Panel - Touch, Memory



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}



MI4-160-TA1



MI4-470-TA1
[MI4-570-TA1]



MI4-580-TA1



MI4-590-TA1

Touch technology	Analogue resistive
Number of touch objects	The number can be calculated from the product of lines and columns, as each touch object must be at least one character in size (Status: MI4-CFG V2.0).
Type of touch objects	Panel key, Print key, ASCII characters, illuminated push-buttons, step switches, general command keys as well as direct value input
Project memory (Flash)	8 MB (SSFDC card)
Recipe (batch) memory	32 kB
Project memory expansion	No

Remark: SSFDC - Sony Smart Floppy Disc Card , also known as a Smart Media Card.

MI4 - Touch Operator Panel - Interfaces



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}



MI4-160-TA1



MI4-470-TA1
[MI4-570-TA1]



MI4-580-TA1



MI4-590-TA1

PLC PORT
(combined RS232/RS485 interface)

1

PC / Printer PORT
(RS232 interface)

1

AUX PORT
(Interface for optional field bus communication module)

1

Engineering via

PC/Printer PORT

SUCOM-A via

PLC PORT

Printer connection via

PC/Printer PORT

MI4 - Touch Operator Panel - Further Features



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}

MI4-160-TA1

MI4-470-TA1
[MI4-570-TA1]

MI4-580-TA1

MI4-590-TA1

Battery	1
Real-time clock	Yes
Password protection	Yes
Number of alarm messages	1024
Number of history alarm messages	1024
Screen saver	Yes
Buzzer	Yes

MI4 - Touch Operator Panel - Dimensions and Weights



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}

MI4-160-TA1

MI4-470-TA1
[MI4-570-TA1]

MI4-580-TA1

MI4-590-TA1

Dimensions
W x H x T in mm

187 x 147 x 91

287 x 232 x 91

287 x 232 x 91

337 x 267 x 91

392x307x101

Weight
in kg

1.4

2.25

2.25

2.85

3.85

Rated voltage U_e

24 V DC

24 V DC

24 V DC

24 V DC

24 V DC

Permissible range

18 to 30 V DC

18 to 30 V DC

18 to 30 V DC

18 to 30 V DC

18 to 30 V DC

Rated current I_e

600 mA

600 mA

700 mA

800 mA

1200 mA

Fuse

Electronic

Electronic

Electronic

Electronic

Electronic

Connection cross-section

2 x 1.5 mm²

2 x 1.5 mm²

2 x 1.5 mm²

2 x 1.5 mm²

2 x 1.5 mm²

MI4 - Touch Operator Panel - Limit Values



MI4-150-TA1
[MI4-450-TA1]
{MI4-550-TA1}



MI4-160-TA1



MI4-470-TA1
[MI4-570-TA1]



MI4-580-TA1



MI4-590-TA1

Ambient temperature	0 to +45 °C
Storage temp.	-20 to +70 °C
Degree of protection, front	IP 65
Touch reliability	> 3.000.000 switch operations
Standards	IEC/EN 61131-2 EN 50178
Approvals	UL / CSA in preparation

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- MI4 Touch Operator Panel
- ***Communication modules***

Communication Modules for Connection to the Field Bus



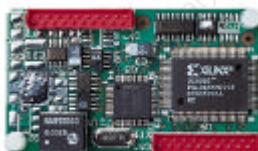
Suconet K
ZB4-501-IF1 (187.5 kBaud and 375 kBaud)



PROFIBUS DP
ZB4-504-IF1 (to 9600 Baud to 12 MBaud)
ZB4-504-IF2 (to 9600 Baud to 1.5 MBaud)



Siemens MPI
ZB4-505-IF1 (to 1.5 MBaud, with galvanic isolation)
ZB4-505-IF2 (to 1.5 MBaud, without galvanic isolation)



Device Net
ZB4-506-IF1



CAN Open
ZB4-507-IF1

Field Bus Connection - List of Drivers

List of Drivers

MI4

PLC manufacturer	Protocol	Interface	Remark
Allen-Bradley	DeviceNet	ZB4-506-IF1	SLC500 ¹⁾
Allen-Bradley	PROFIBUS-DP	ZB4-504-IF1	SLC500 with PROFIBUS-DP Card ¹⁾
Moeller	Suconet K	ZB4-501-IF1	PS4 Series, PS416 Series ¹⁾
Moeller	SUCOM-A	on board	PS4 Series, PS416 Series
Moeller	PROFIBUS-DP	ZB4-504-IF1	LE4-504-BS1, PS416-NET-400 ¹⁾
Siemens	MPI	ZB4-505-IF1 or ZB4-505-IF2	S7-31x Series, S7-41x Series
Siemens	PROFIBUS-DP	ZB4-504-IF1	S7-CPU with PROFIBUS-DP Interface ¹⁾
Other manufacturer	PROFIBUS-DP	ZB4-504-IF1	General PROFIBUS-DP Driver
Other manufacturer	CANopen	ZB4-507-IF1	General CANopen Driver

¹⁾ Data handling block with Multiplex functionality available.

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- MI4 Touch Operator Panel

- Communication modules
- **Accessories**

MI4 - Accessories

MI4 Accessories List

	Description	Type
Memory module	512 kB Flash RAM for MI4-110-KG1/-KG2 and MI4-140-KI1/-KJ1	ZB4-512-SF1 200857
Memory card	8 MB (SSFDC) for all Graphic and Touch Operator Panels	ZB4-908-SF1 223100
Drive for memory card	For connection to a PC parallel port for quick project download	ZB4-510-EG1 230617
Bus terminating resistor	(Suconet K) Bus termination for the last last station on line, plug connector version	ZB4-043-AD1 203512
Battery	Spare battery for memory data backup	ZB4-280-BT1 203513
Insert labels	Insert labels free for user inscription for all MI4 devices except Touch Operator Panels, 10 off	ZB4-301-BS2 230610

MI4 - Zubehör

MI4 Accessories List

	Description	Type
Protective seals	for Touch Operator Panel 5.6" for MI4-150/450/550-TA1, 10 off	ZB4-501-GZ3 230611
Protective seals	for Touch Operator Panel 9.6" and 10.4" for MI4-160/470/570-TA1, 10 off	ZB4-501-GZ4 230612
Protective seals	for Touch Operator Panel 12.1" for MI4-580-TA1, 10 off	ZB4-501-GZ5 230613
Protective seals	for Touch Operator Panel 15" for MI4-590-TA1, 10 off	ZB4-501-GZ6 230614
Hook	Bracket for MI4-140-KF1	ZB4-502-GZ1 230615
Bracket type hook	Magnetic bracket for MI4-140-KF1	ZB4-502-GZ2 230616

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- MI4 Touch Operator Panel
- Communication modules
- Accessories
- ***MI4-CFG-1 Engineering software***

MI4-CFG-1 Engineering Software - General Characteristics

- Display of system conditions and process variables via numeric data fields, bargraphs or text messages.
- Input of setpoint values via numeric data fields
- Display and storage of alarms with date and time (alarm list, event list [Fault history register])
- Recipe processing and recipe memory (not MI4-110-KC1/-KG2)
- Real-time clock, battery buffered (not MI4-110-KC1/-KG2)
- Time synchronization (with PLC and/or other MI4) and further functions via RDA and mailbox
- Language switchover (activated via MI4 and/or PLC)
- Password protection (Assignment of up to 8 different access authorization levels)
- Support for a serial printer (not MI4-110-KC1/-KG2) for message print out, alarm list and fault history register printout
- Keypad macro editor
- Representation of Bitmaps and access to internal symbol library

MI4-CFG-1 Engineering Software - New Characteristics of Version 2.0 (from June 2001)

- Display of trend graphs with cursor and x-y zoom functions
(only on Graphic and Touch Operator Panels)
- Display of analog instruments with simple to define parameters
(only on Graphic and Touch Operator Panels)
- Modifiable min./max. limit variables via the PLC
- Modifiable scaling of variables via the PLC
- Extended project report
- Fast download of projects on SSFDC memory cards via the SSFDC drive which is available as an accessory

MI4-CFG-1 Engineering Software - New Characteristics of Version 3.0 (from 4th Quarter 2001)

- 32 Bit version with full support of the current functions under WIN 95/98/ME/NT/2000
- Online project overview
- Refined graphic symbol library with even more graphics, which can also be scaled
- Drafting of static objects (lines, circles, polygons) directly on the page
- Pixel related sizing and offset of objects

Engineering with older MI4 devices will still be possible. Projects which have been created with previous versions can still be processed.

MI4 - Operator Panel : *Engineering*

Overview

- MI4 Text Operator Panel
- MI4 Graphic Operator Panel
- MI4 Touch Operator Panel

- Communications module
- Accessories

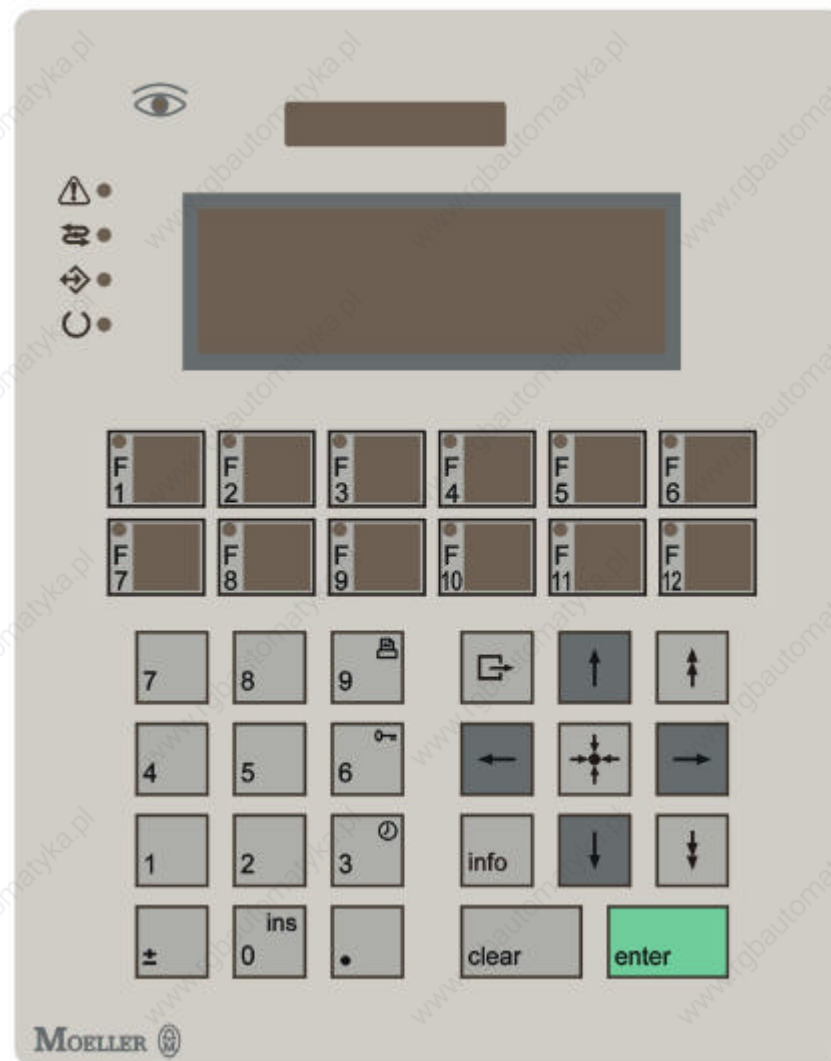
- MI4-CFG-1 Engineering Software

- ***Appendix***

MI4-110-KC1 - Keypad View



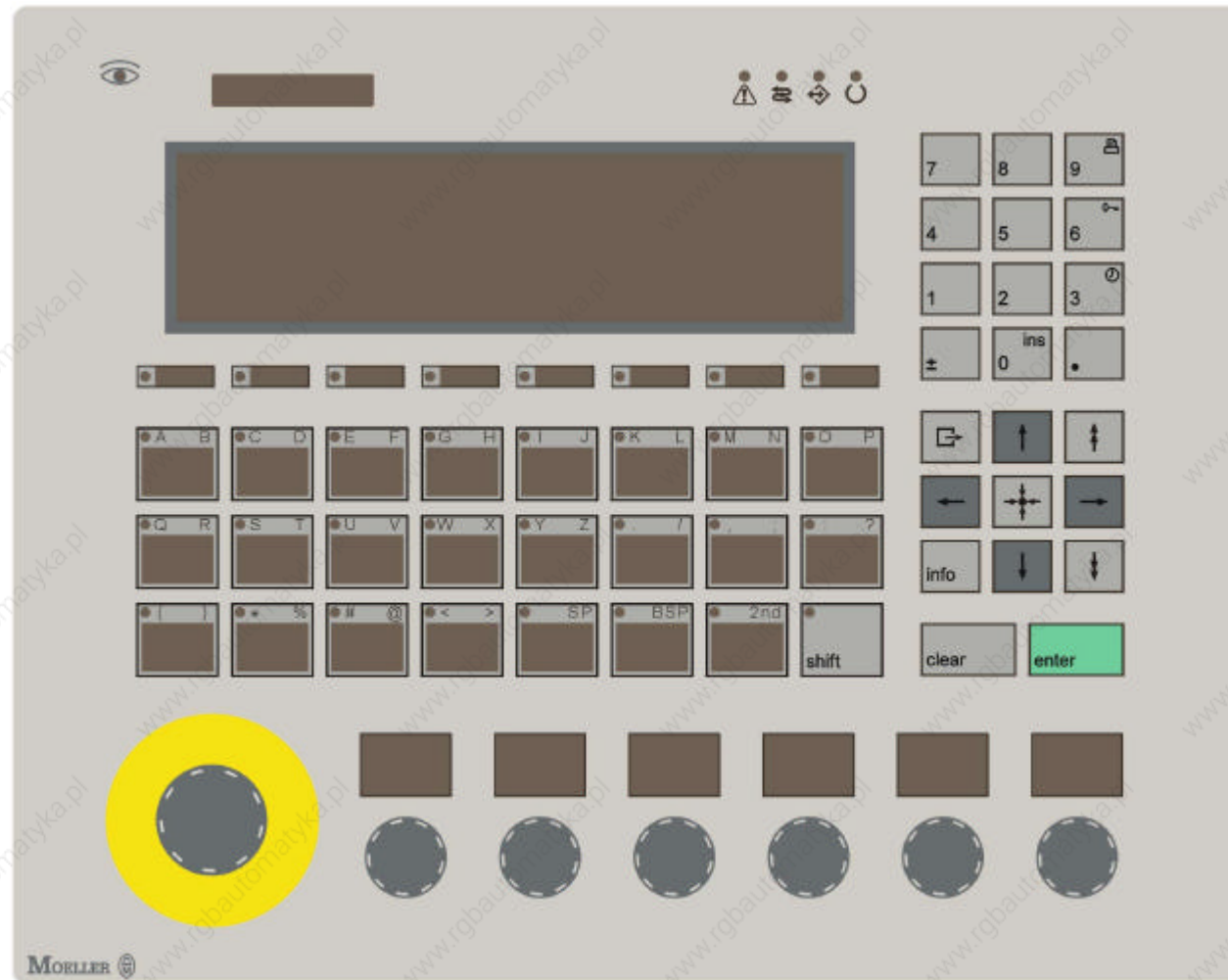
MI4-110-KG1/2 - Keypad View



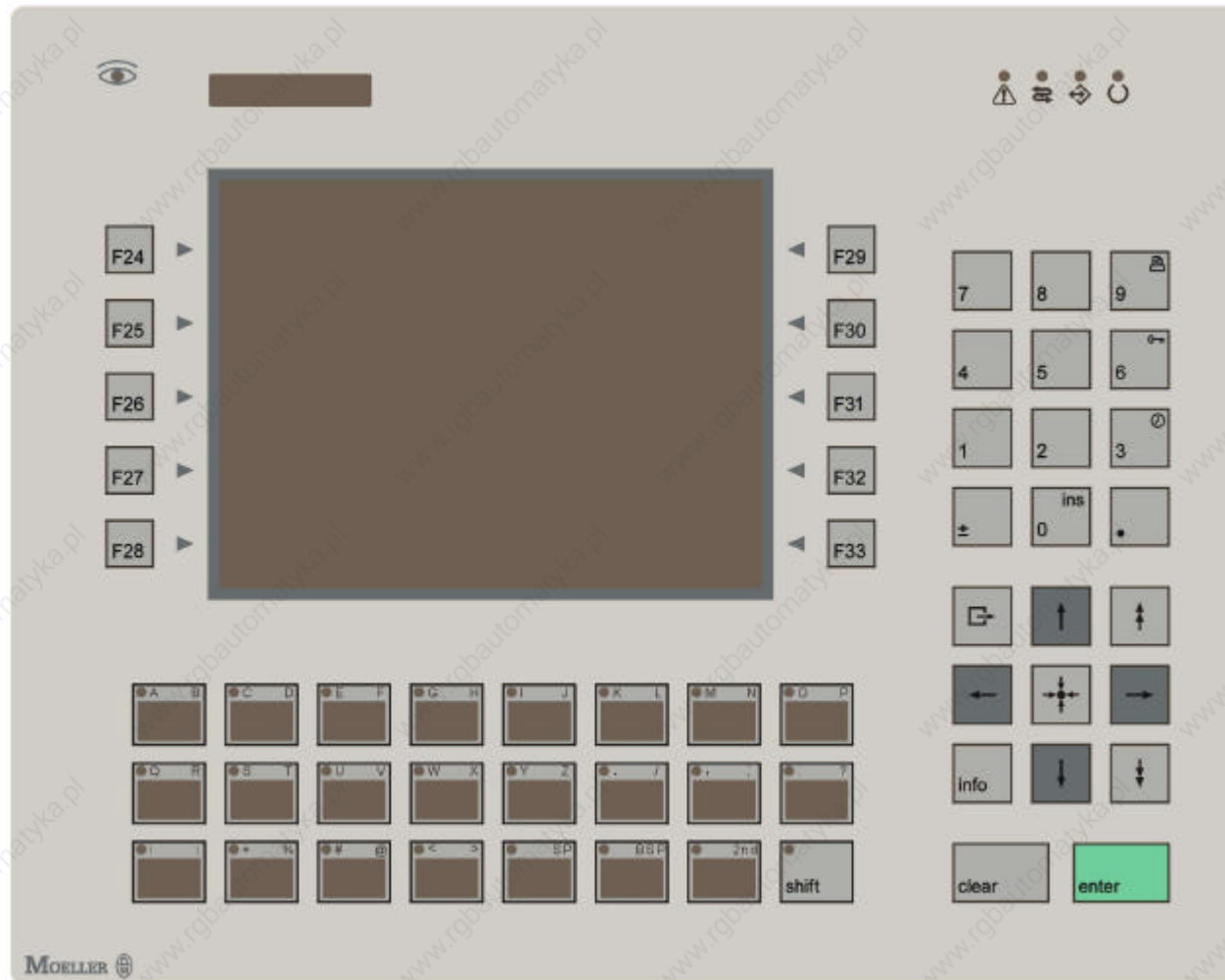
MI4-140-KI1 - Keypad View



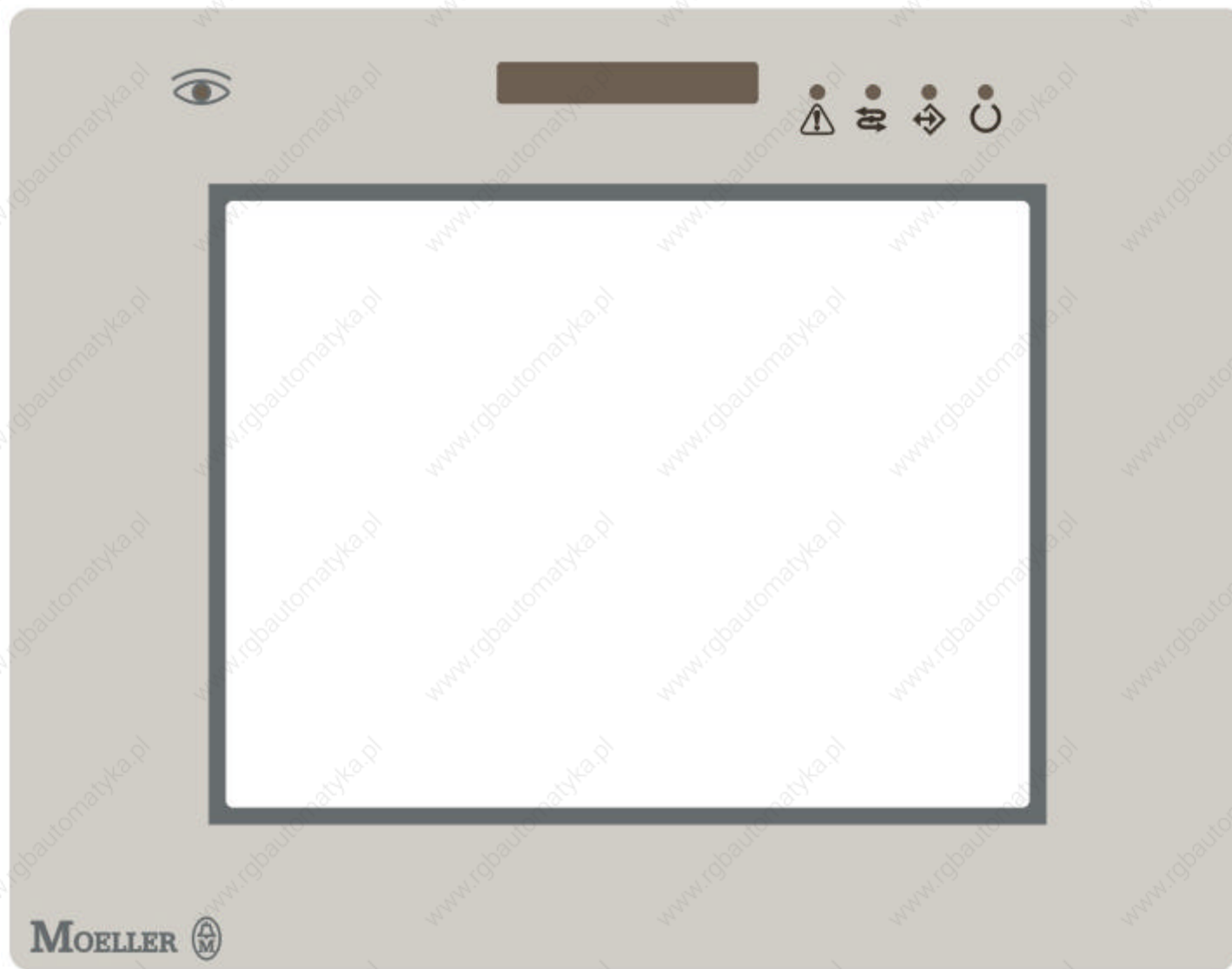
MI4-140-KJ1 - Keypad View



MI4-150/450-KI1 - Keypad View



MI4-150/450/550-TA1 - Detailed View



MI4-xxx-yyy - Rear View

