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# Operating and observing

## Terminal MMIC 702 and HMI 712



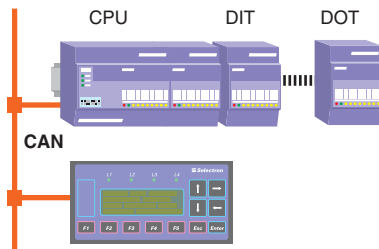
### Characteristics and benefits

- Operating and observing.
- Warnings.
- Status indicators.
- Suitable for industrial use thanks to IP 65 protection (front side).
- Front panel or DIN rail mounting.
- CAN interface.

### Function

#### Terminal MMIC 702 and HMI 712

The terminals are controlled via CAN and are easy to program by means of a programming tool. A library with all necessary functions as e.g. text display or cursor positioning is available for the data exchange. The LED's and the keys can be programmed in an easy way as normal digital I/O's.



### Accessories

DIN rail fixation set, Article number 44159001

Technical data	MMIC 702	HMI 712
Keyboard		
Number of keys	11	11
Function keys	5 (label inserts)	5 (label inserts)
Display		
Display format	4 x 20 characters	4 x 20 characters
Character size	5 mm	5 mm
Type	LCD backlighted	LCD backlighted
Character set	ASCII (Euro)	ASCII (Euro)
Bus connection	CAN (ISO/DIS 11898)	CAN (ISO/DIS 11898)
Protocol	SeleCAN	CANopen ( CiA DS 301/V3.x)
Communication interface	–	–
Supply Voltage UC	24 Vdc	24 Vdc
Power consumption	350 mA max.	200 mA max.

General		
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Protection mode	IP 65 (front side)	IP 65 (front side)
Dimensions		
Front (W x H x D)	144 x 72 x 50 mm	144 x 72 x 50 mm
Installation (W x H x D)	136 x 66 x 46 mm	136 x 66 x 46 mm
Weight	300 g	300 g

Ordering data		
Article number	44150003	44150103

Detailed information in system manual article number 43930129

# Operating and observing

## Terminal MMI 751



### Characteristics and benefits

- Operating and observing.
- Warnings.
- Status indicators.
- Suitable for industrial use thanks to IP 65 protection (front side).
- Front panel or DIN rail mounting.
- RS 232 interface.

### Function

#### Terminal MMI 751

The terminals are controlled via RS 232 and are easy to program by means of a programming tool. A library with all necessary functions as e.g. text display or cursor positioning is available for the data exchange.

Technical data	MMI 751
<b>Keyboard</b>	
Characters	VT 100
Number of keys	24
Function keys	5 (label inserts)
<b>Display</b>	
Display format	4 x 20 characters
Character size	5 mm
Type	LCD backlight
Character set	ASCII (Euro)
Bus connection	–
Protocol	–
Communication interface	RS 232C
Supply voltage UC	24 Vdc
Power consumption	200 mA max.
<b>General</b>	
Ambient temperature (operation)	0 ... +55 °C
Protection mode	IP 65 (front side)
<b>Dimensions</b>	
Front (B x H x T)	144 x 144 x 70 mm
Installation (B x H x T)	136 x 136 x 60 mm
Weight	600 g
<b>Ordering data</b>	
Article number	44150004

Detailed information in system manual article number 43930129

# Operating and observing

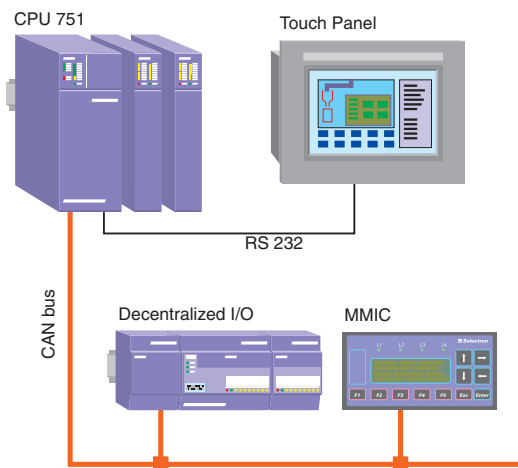
## Touch Panel GF-0 / GF-1



### Characteristics and benefits

The touch panel offers a fast, clear and reliable supervision and operation surface. The intuitive and therefore fast operation convinces at all applications. Thus the units allow a top level image quality without any compromises and a low tiring operation. A secure data readout and a correct reaction of the service staff is of prime importance at high automated state of the art machines and systems. Direct touch operation and an information on the system status easy to recognise for the operator from a certain distance supports the availability of even very complex processes. The functionality is guaranteed even at high dirt accumulation and hard environmental conditions.

- Clear and realistic operation
- For rugged industrial environments
- Still functions even when subject to high levels of contamination, good chemical resistance.
- Scratch-resistant anti-reflective glass front
- Infrared Touch
- Diagnosis (supply, touch, communication)
- Protection class IP 65 on front side.
- Brilliant image display, easy to read
- Very fast operating times
- Generous memory concept.
- Easy and logical handling of the generating software for the preparation of the operation
- Saving of time at the projecting and realisation of projects
- Direct project simulation on the PC
- High presentation quality (1/4 VGA resp. VGA with 256 colours resp. 256 grey-scale)



### Function

#### Touch Panel GF-0 / GF-1

The touch panel communicates via the RS 232 / RS 422 interface with the CPU 7x controller. The operation is easy to realise by using the PC generating software GALILEO. The panel supports functions as drawing elements, bitmaps, mask commutation, switches, multiple switches, signal displays, value inputs, value displays, bar graphs, curve representations, receipts, error messages window, text window and divers special functions. For the data exchange via the worldwide standardised MODBUS RTU protocol the necessary functions for the PLC are available as library (see solution packages MODBUS-RTU). According to the communication protocol the touch panel has to be completed with the respective interface board (see part multi protocol board MPB-TP).

<b>Technical data</b>	<b>GF-0, 5.7" LCD mono</b>	<b>GF-0, 5.7" STN color</b>
Display	5,7" STN mono	5,7" STN color
Colours	256 greyscales	256 colours
Resolution	¼-VGA (320 x 240)	¼-VGA (320 x 240)
Front	glass anti-reflective	glass anti-reflective
Touch	Infrared	Infrared
Memory	4 MByte	4 MByte
<b>Interfaces</b>		
System port	1 RS-232 Project download and printer	
Interface slots	1 for MPB1-TP MULTI PROTOCOL BOARD	
Supply voltage UC	24 Vdc	24 Vdc
Power consumption	0,5 A	0,5 A

<b>General</b>		
Ambient temperature (operation)	0 ... +55 °C	0 ... +55 °C
Protection mode	IP 65 (front side)	IP 65 (front side)
<b>Dimensions</b>		
Front (B x H)	220 x 170 mm	220 x 170 mm
Rear side (B x H x T)	201 x 144 x 83 mm	201 x 144 x 83 mm
Weight	ca. 2,2 kg	ca. 2,2 kg

<b>Ordering data</b>	<b>Article number</b>	<b>Article number</b>
without Protocolboard	44150202	44150203

<b>Other types on request</b>	<b>GF-0 5.7" EL</b>
Display	5,7" EL mono
Colours	amber/black
Resolution	¼-VGA (320 x 240)

	<b>GF-0 10.4" LCD mono</b>	<b>GF-0 10.4" STN color</b>
Display	10,4" STN mono	10,4" TFT color
Colours	256 greyscales	256 colours
Resolution	VGA (640 x 480)	VGA (640 x 480)

	<b>GF-1 10.4"</b>	<b>GF-1 14"</b>
Display	10,4" TFT LCD color	13,8" TFT LCD color
Colours	256 colours	256 colours
Resolution	VGA (640 x 480)	VGA (640 x 480)

## Operating and observing

### Multi Protocol Board MPB1-TP



#### Characteristics and benefits

- Connection to processor module CPU 72x&662&85x.
- Supports MODBUS RTU protocol.
- Galvanic separated interfaces.
- RS 232 / RS 422

#### Function

##### Multi Protocol Board MPB1-TP

An intelligent operation panel needs to correspond to a flexible concept as well as allowing a coupling to various networking structures and controllers.

The multi protocol module MPB offers the highest possible communication flexibility thanks to the selectable and galvanic separated interfaces.

#### Technical data

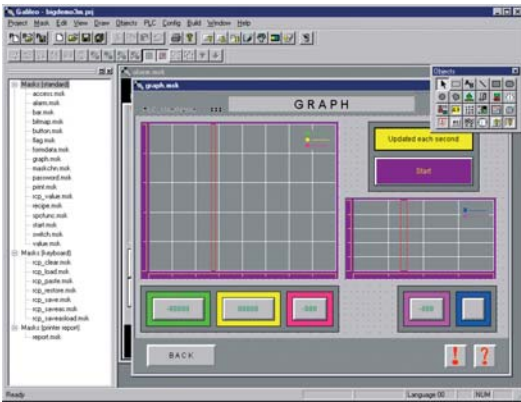
#### MPB1-TP Multi Protocol Board

Interface	RS 232 / RS 422
Connection	D-Sub connector 9-pole
Protocol	MODBUS RTU

#### Ordering Data

Article number	44150201
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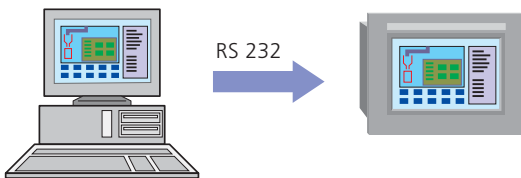
## Operating and observing GALILEO software



### Characteristics and benefits

The software tool GALILEO is a parametering tool for the screen masks of the touch panels. This software is used for creating the operating and visualization screens needed specifically for a system. In spite of its very simple and logical setup, GALILEO can be used for both simple value display projects and complex high-end applications for the upper system sector. The display of importable bitmaps offers a 1 : 1 display of objects as machines, system controls, buildings, etc. Pre-designed operation and display elements are easily positioned, assigned to the symbolic variables and completed with an individual text or with symbols. The up-to-date Windows handling leads to a shortened projecting time and reduces the learning period.

- Establishing of transparent and close to reality operating instructions.
- Easy and logical handling of the software.
- Reduction of time at projecting and realisation of projects.
- Direct project simulation on the PC.
- Different character sets including Hebraic and Greek.
- Licence costs arise only once.
- Hundred possibilities of language conversions.
- Import of graphics and images (bmp, jpg, tif, pcx, wmf etc.).
- Pre-designed objects (switches, displays, keyboards, bars, curves, alarms).
- All that remains is to set the recipe parameters.



Technical data	GALILEO Software
Library	Management of projects, masks and images
Drawing editor	Line, rectangle, rounded rectangle, ellipse, polygon, text
Import	Bitmaps with format and colour adaptation for 256 colours
Objects	Bitmaps, mask switch over, switches, multiple switches, signal displays, value inputs, value displays, bar graphs, curve representations, receipts, error message window, text window and diverse special functions as e.g. language switch-over
Object functions	Adjustment, magnification, reduction, object preview and simulation of the switching status, display of the object types and position
Service functions	Windows handling: Opening, memorising, cut-out, copying, print-out of masks and allocations, adjustment of drawing patterns, import and export etc.
Test functions	Direct project simulation on the PC
Minimum PC requirements	
Hardware	Pentium
Operating system	Windows 95, 98, NT, 2000
RAM	> 16MB
Harddisk	> 40MB
Interface	RS 232
Monitor	VGA graphic board and colour monitor with a resolution of 640 x 480 and 256 colours (recommended is a resolution of minimum 800 x 600)

Ordering data	Article number
GALILEO English/German	44150204 (incl. manual)
CCA 705-GF	44170043 cable for download, 2 m