

## HUMAN MACHINE INTERFACES

### HMI Control Units Facilitate Communication Between Operator and Machine

HMI control units make systems and their functions transparent, facilitating a process-oriented dialogue between operators and machine. They enable the user to monitor and change their parameters as required. Installation is simple as the HMI units are installed directly at the machine, with no additional modules required for connection to the PLC.

All the information required is at your fingertips, providing maximum transparency for all system processes and with an IP65 rating (IP67 for GOT1000) the HMIs can be used under heavy-duty conditions.

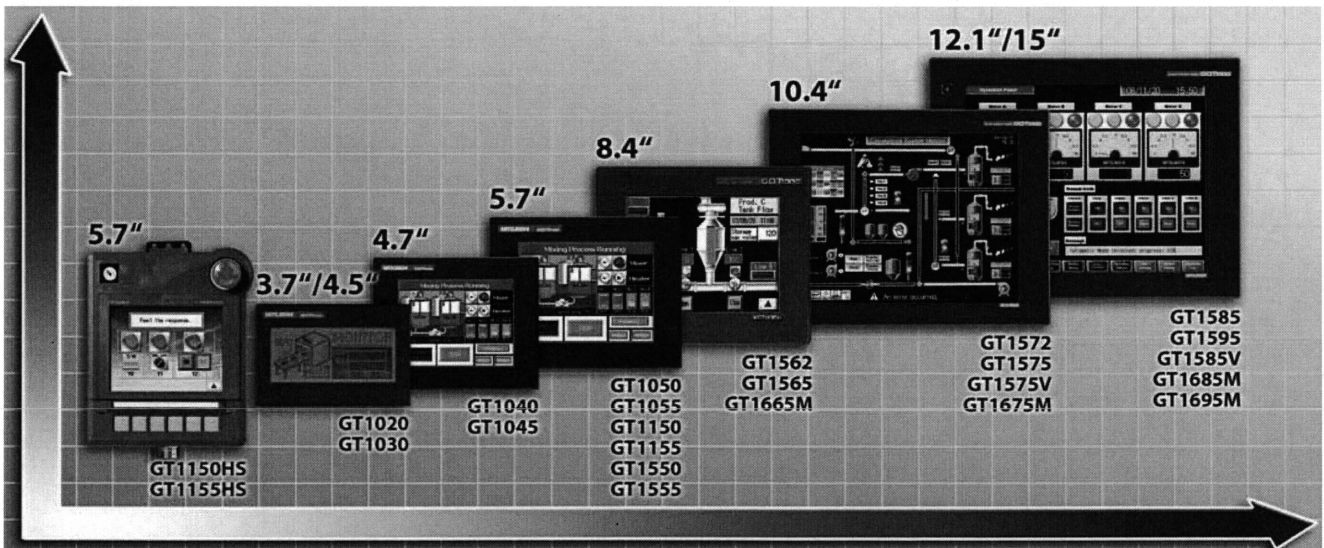
Mitsubishi offers two ranges of Human Machine Interfaces (HMI), the E Series range

and the GOT range. These HMIs can be text or graphic and key or touch based. The graphs below are showing the full range of both main ranges of HMIs.

### GOT Series Range

The GOT series is the ultimate in control unit quality and performance. The impressive array of functions, monitor sizes, and simple

touchscreen operation give users everything they want and need.

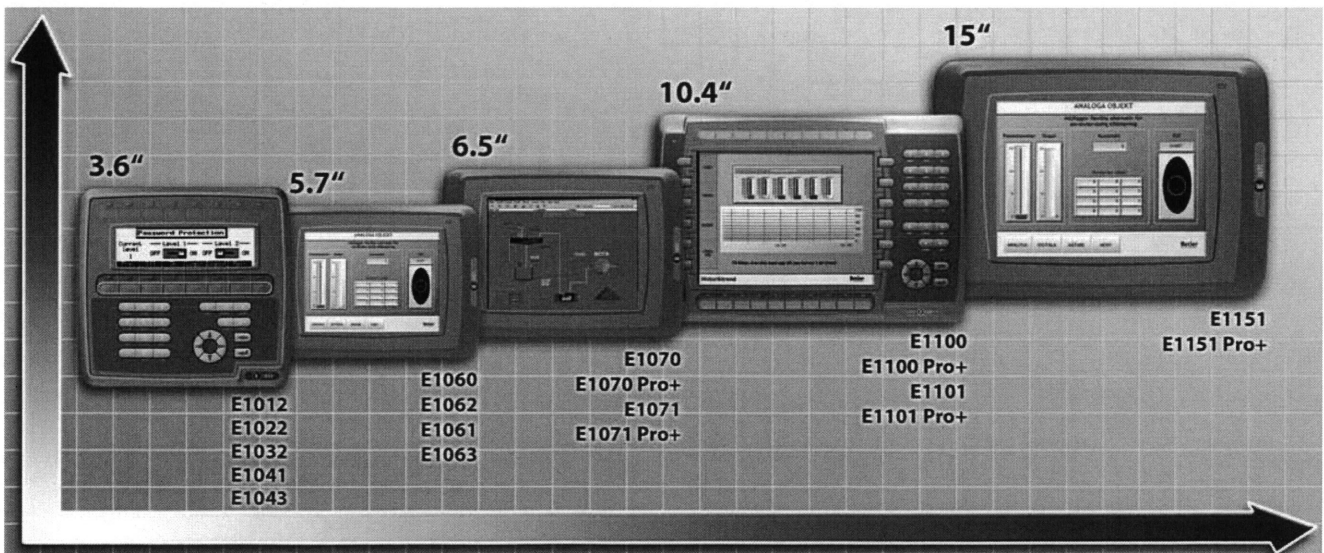


### E Series Range

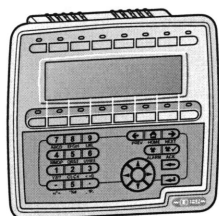
The E Series is a superb example of successful industrial design. All units are graphic

terminals. Users can select between models with functions keys and high-end touchscreen

terminals. Both variants are available with different monitor sizes.

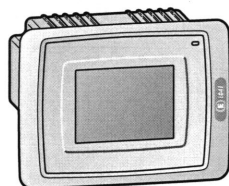


**E1012**  
**E1022**  
**E1032**



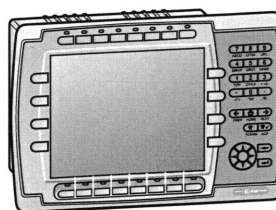
The **E1012**, **E1022** and **E1032** have programmable function keys and a separate keypad. The graphic-capable displays illustrate symbols, alarms, line diagrams and text in arbitrary sizes. Formulas, text and changes in the sequence program can be done directly via the keys.

**E1041**  
**E1043**



The **E1041** and **E1043** terminals have a 3.5" TFT touch screen (65,536 colours or 16 grey scales). Recipes, text and editing changes are entered via keys. Password levels protect the system against unauthorised access, while sixteen separate alarm groups keep you informed on all-important developments. The unit features two PLC ports, a USB host port to connect mouse, keyboard, printer and USB memory as well as an integrated Ethernet interface. Profibus/DP is available via a separate extension module.

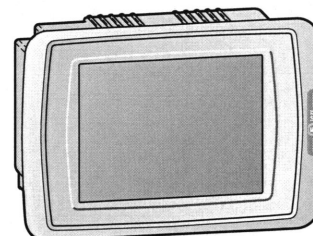
**E1060**  
**E1062**



The **E1060** and **E1062** units provide a 5.7" TFT display with 65,536 colours or 2 colours (blue/white). Both models feature screen-oriented function keys for user-friendly operation.

The **E1061** and **E1063** terminals have a 5.7" TFT touch screen (65,536 colours or 16 grey scales). Recipes, text and editing changes are entered via touch keys on the display.

**E1061**  
**E1063**



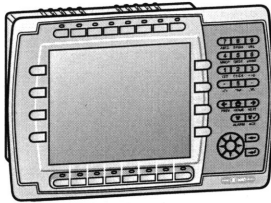
More features of the **E1060** to **E1063** are: Recipes, text and editing changes are entered via keys. Password levels protect the system against unauthorised access, while sixteen separate alarm groups keep you informed on all-important developments.

Each unit features two PLC ports, one USB host port to connect mouse, keyboard, printer and USB memory sticks as well as an integrated Ethernet interface.

Profibus/DP is available via a separate extension module.

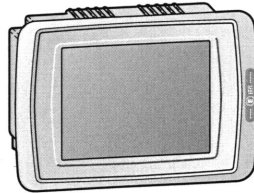
Specifications		E1012 / E1022	E1032	E1041 / E1043	E1060 / E1062	E1061 / E1063
Display unit	type	LCD monochrome	LCD monochrome	TFT colour / TFT grey scale	TFT colour / TFT grey scale	TFT colour / TFT grey scale
	dimensions (mm)	89.6 x 17.9 / 90.2 x 24.0	135 x 36	75 x 54 (3.5")	120 x 91 (5.7")	145 x 110 (5.7")
	text (lines x characters)	User definable	User definable	User definable	User definable	User definable
	character height (mm)	User definable, Windows fonts	User definable, Windows fonts	User definable, Windows fonts	User definable, Windows fonts	User definable, Windows fonts
	graphical resolution (pixels)	160 x 32 / 240 x 64	240 x 64	320 x 240	320 x 240	320 x 240
Power supply	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	
Internal memory capacity	512 kB	12 MB	12 MB	12 MB	12 MB	
Flash memory	—	32 MB (Intel Strata Flash)	32 MB (Intel Strata Flash)	32 MB (Intel Strata Flash)	32 MB (Intel Strata Flash)	
Keyboard type	Membrane	Membrane	Touch-panel	Membrane	Touch-panel	
Function keys	internal	6	8	Touch keys	16	Touch keys
	external	—	—	—	—	—
LED indicators	6 (integrated in keys)	16 (8 integrated in keys)	1 (Power ON)	16 (8 integrated in keys)	1 (Power ON)	
Interfaces	serial	RS232C, RS422/RS485	RS232C, RS422/RS485	RS232C, RS422/RS485	RS232C, RS422/RS485	RS232C, RS422/RS485
	parallel	—	—	—	—	—
	others	—	USB	USB	USB	USB
Interface slot for optional cards	1	1	1	1	1	
Real-time clock	Integrated	Integrated	Integrated	Integrated	Integrated	
Network communication possibilities	Ethernet (TCP/IP) (optional)	Ethernet (TCP/IP), Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet (TCP/IP), Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet (TCP/IP), Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet (TCP/IP), Modbus TCP, MPI (all integrated); Profibus/DP (optional)	
IP Rating (front panel)	IP 66	IP 66	IP 66	IP 66	IP 66	
Dimensions WxHxD (mm)	155 x 114 x 40 / 155 x 155 x 41	202 x 187 x 63	156 x 119 x 63	275 x 168 x 63	201 x 152 x 63	
Weight (kg)	0.4 / 0.5	0.9	0.56	1.1	0.87	
Order information	Art. no.	202084 / 202085	169297	169298 / 169299	216254 / 216306	216305 / 216307
Accessories		Programming software E-Designer (refer to page 6), cables and interface adapters (refer to page 76)				

**E1070**  
**E1070 Pro+**



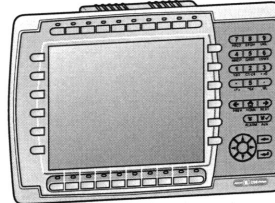
The operator terminal **E1070** offers a 6.5" TFT display with 65,536 colours and a resolution of 640 x 480 pixels. 16 freely programmable function keys facilitate the inputs directly at the terminal. The 6.5" TFT colour display of the **E1071** with 65,536 colours provides a user-friendly touch screen operation. Recipes, text and editing changes are entered via touch keys.

**E1071**  
**E1071 Pro+**



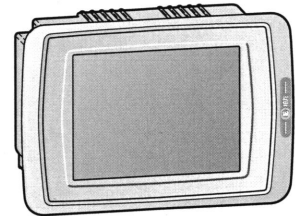
The operator terminal **E1100** offers a 10.4" TFT display with 65,536 colours and a resolution of 800 x 600 pixels. Freely programmable function keys facilitate the inputs directly at the terminal. The operator terminals **E1101** and **E1151** provide a user-friendly TFT colour touchscreen. The E1101 offers a resolution of 800 x 600 pixels on a 10.4" screen, the E1151 provides a 15" screen with 1024 x 768 pixels.

**E1100**  
**E1100 Pro+**



All **E1000** operator terminals on this page provide two PLC ports, a USB host port to connect mouse, keyboard, printer and USB memory as well as an integrated Ethernet interface. Profibus/DP is available via a separate extension module. The internal memory of 12 MB can be expanded. The integrated password protection protect the system against unauthorised access, and sixteen separate alarm groups keep you informed on all-important developments.

**E1101, E1101 Pro+**  
**E1151, E1151 Pro+**  
**DT1151**



Using an **E1000 Pro+** operator terminal gives the user all the functionality of the standard E1000 family but also makes it possible to view external files such as PDF files, HTML pages and PowerPoint presentations directly on the screen of the operator terminal. The **DT1151** is an industrial monitor with a 15" TFT-LCD touch screen, designed to be mounted in a cabinet and connected to an industrial PC. The monitor is optimized for a max. resolution of 1024 x 768 pixels.

Specifications		E1070 / E1070 Pro+	E1071 / E1071 Pro+	E1100 / E1100 Pro+	E1101 / E1101 Pro+, E1151 / E1151 Pro+, DT1151
Display unit	type	TFT	TFT	TFT	TFT
	dimensions (mm)	134 x 100 (6.5")	134 x 100 (6.5")	211 x 158 (10.4")	211 x 158 (10.4") , 304 x 228 (15")
	text (lines x characters)	User definable	User definable	User definable	User definable
	character height (mm)	User definable, Windows fonts	User definable, Windows fonts	User definable, Windows fonts	User definable, Windows fonts
graphical resolution (pixels)		640 x 480	640 x 480	800 x 600	800 x 600 , 1024 x 768
		24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)	24 V DC (20 – 30 V)
Power supply		12 MB (expandable)	12 MB (expandable)	12 MB (expandable)	12 MB (expandable)
Internal memory capacity		2 (compact flash 4 – 1024 MB)	2 (compact flash 4 – 1024 MB)	2 (compact flash 4 – 1024 MB)	2 (compact flash 4 – 1024 MB)
Memory card (intern./extern.)		Membrane	Touch-panel	Membrane	Touch-panel
Keyboard type	internal	16 (8 with integrated LEDs)	Touch keys	20 (10 with integrated LEDs)	Touch keys
Function keys	external	Max. 64 (optional with MAC-E-Key16)	Max. 64 (optional with MAC-E-Key16)	Max. 64 (optional with MAC-E-Key16)	Max. 64 (optional with MAC-E-Key16)
		18	1 (Power ON)	20	1 (Power ON)
LED indicators	serial	RS232C, RS422, RS485	RS232C, RS422, 485	RS232C, RS422, RS485	RS232C, RS422, 485
Interfaces	parallel	—	—	—	—
	others	USB	USB	USB	USB
		1	1	1	1
Interface slot for optional cards	Real-time clock	Integrated	Integrated	Integrated	Integrated
Network communication possibilities		Ethernet TCP/IP, Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet TCP/IP, Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet TCP/IP, Modbus TCP, MPI (all integrated); Profibus/DP (optional)	Ethernet TCP/IP, Modbus TCP, MPI (all integrated); Profibus/DP (optional)
IP Rating (front panel)		IP65	IP65	IP65	IP65
Dimensions WxHxD (mm)		285 x 177 x 62	219 x 154 x 61	382 x 252 x 64	302 x 228 x 64 , 398 x 304 x 60
Weight (kg)		1.3	1.1	2.3	2.0 / 3.7
<b>Order information</b>	Art. no.	156096 / 203301	156097 / 203302	156098 / 203303	156099 / 203324 156100 / 203325 / DT1151: 203326
<b>Accessories</b>		Programming software (refer to page 5), cables and interface adapters (refer to page 76)			