Process PCs for process control

MTL670 SERIES

Hazardous-area touch-screen computers and monitors



- **Designed for the process industry environment:**
  - **All round NEMA 4X/IP66 protection**
  - **shock mounted**
  - **chemically resistant toughened glass touch screen**
  - **1g operating vibration**
  - **15g operating shock**
- **Certified for location in Zone 2 and Division 2 hazardous areas**
- **Customisable TouchSurround™ with 10", 14" or 15" colour display**
- **Compact size for optimum location for process operators**
- **Near Field Imaging™ (NFI) the most robust touch screen available**
- **Flexible mounting options – panels, booms, racks**
- **Pentium® or AMD processor, up to 256Mb RAM and 6Gb hard drive**
- **Easy connection to I/O local area networks (LANs) and Ethernet™**
- **MTL678M touch-screen monitor connects to standard PC in safe area**

The MTL670 Series hazardous area touch-screen computers are small, light, self-contained industrial computers that deliver rugged, flexible computing architecture, to the process industry. This makes them ideal for use in chemical and pharmaceutical manufacturing applications, oil exploration, production and refining. Easy connection of MTL670 Series hazardous-area computers to I/O local area networks (LANs) and Ethernet™, coupled with the abundance of process automation software for PCs, allows rapid transfer of process information to and from control computer systems throughout a plant.

An MTL678M touch-screen monitor provides rugged, touch-screen inputs in the hazardous area, together with the flexibility to connect to a VGA connector and serial communications port on a standard PC in the safe area.

The MTL670 models are compact and sealed to IP66 and NEMA 4X standards making them ideal for locating close to the process. Their small size allows for valuable space saving in the operating environment, often eliminating the requirement for high cost panels. They resist moisture, chemicals, dust, extreme temperatures, shock and vibration. Boom, panel, wall, rack, or desk mounting options allow installation flexibility.

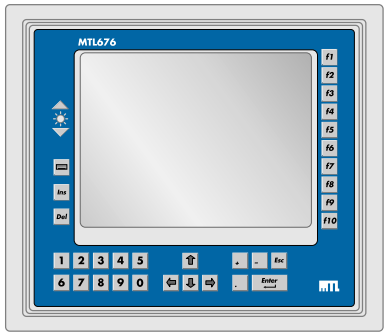
The MTL670 Series computers and monitors meet T4, FM and CSA requirements for use in Class1, Division 2 Groups ABCD, hazardous locations and TÜV requirements for Zone 2, IIC, hazardous areas.

A touch screen is more intuitive than other input devices; faster and more rugged than a keyboard or mouse. It is more user friendly and less training is required to use a touch screen.

The QuickAccess™ system is designed to simplify installation and unit maintenance. The front access QuickLatch™ uses a standard Allen key so the front of the unit can be opened to access the backlight, and to install ISA cards and custom underlays — all without disturbing the mounting or dismantling the unit. The rear access QuickHatch™ provides a hinged hatch for easy connection of I/O local area networks, Ethernet links and RS232/422/485 communications. Alternatively the QuickHatch service panel can easily be removed to access the connectors. The extended hatch option may be used in place of the standard hatch plate to accommodate large connectors and software keys.

TOUCHSURROUND

The TouchSurround extends the touch sensitive area beyond the display for a much larger and more versatile interactive area which can be tailored to reflect applications perfectly. This provides key input capabilities using the same rugged, NFI touch technology as the display area, suitable for tough process environments. The key functions are customisable including any combination of up to 40 ASCII or special character strings supported by a PC. This allows programming of short cut keys for



Standard TouchSurround

TouchSurround™, Near Field Imaging™, QuickAccess™, QuickLatch™ and QuickHatch™ are trademarks of Dynapro Technologies Inc.
Pentium® is a registered trademark of the Intel Corporation. Ethernet™ is a trademark of Xerox Corporation

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commonly used actions such as closing an active window or acknowledging an alarm.

The TouchSurround can also be customised with different key positions, touchable picture symbols, icons or buttons that match a user's application software. This contributes to increased functionality and ease-of-use of the operator interface.

NEAR FIELD IMAGING

Near field imaging provides

- Uncompromising touch accuracy
- Chemical/abrasive resistant screen
- Continual self calibration
- Optical clarity
- Safety glass construction

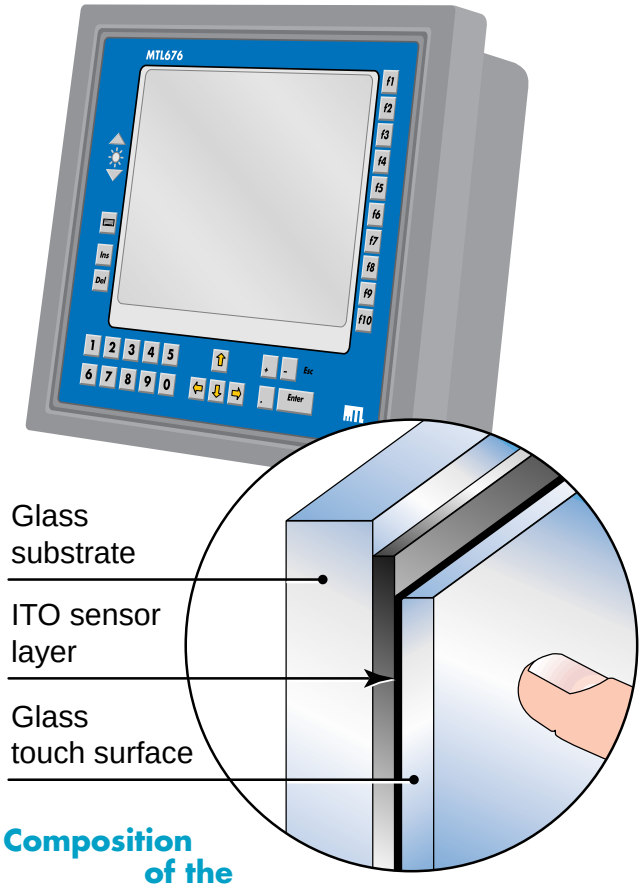
Notes: *'Near field' refers to the electrostatic field that is local to the point of contact.*
'Imaging' refers to a digital signal processing technique which allows the discrimination of single, compared to multiple, points of contact.

INTEGRATION

The computers and monitors are designed to integrate into both control networks and plant-wide networks for monitoring and control of I/O devices while also exchanging data with MIS/ERP systems. The built-in Ethernet interface provides immediate connectivity to one of the most common networks on the plant floor.

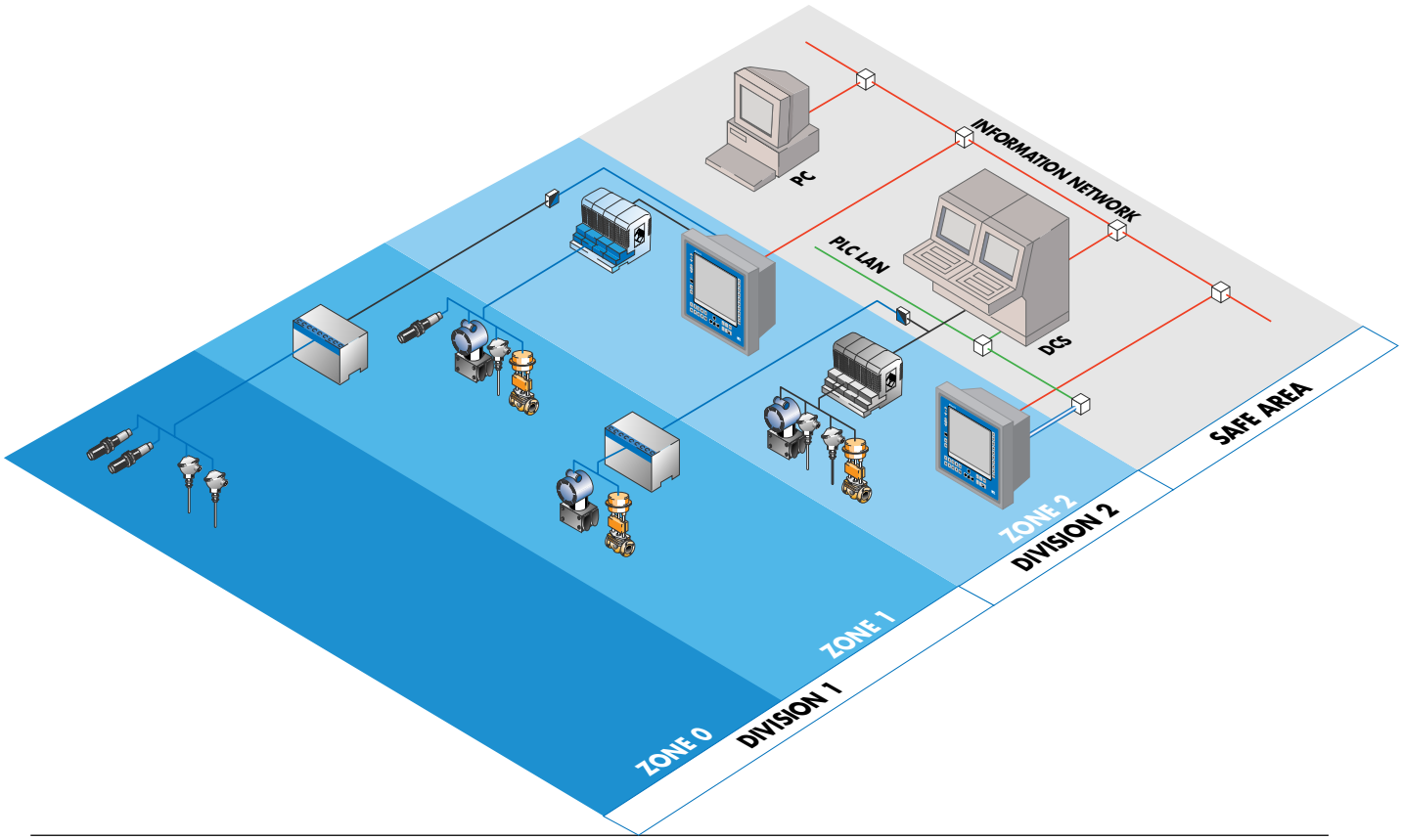
Two ISA slots provide for a wide range of expansion cards. The parallel port and the two serial ports round off the computer connectivity options.

Note: Contact MTL for details of hazardous area certification of ISA cards.



Composition of the touch screen

Plan of a typical process showing MTL670 Series touch-screen computers mounted 'close to the process' in Zone 2.



MTL670 SERIES SPECIFICATIONS



	MTL675-CE	MTL676	MTL678M (Monitor)	MTL679
Flat panel display				
Size and type:	10.4" TFT	10.4" TFT	13.8" TFT	15.0" TFT
Resolution:	640 x 480 VGA	640 x 480 VGA	1024 x 768 XGA	1024 x 768 XGA
Brightness:	300 nits (candela/m^2)	300 nits (candela/m^2)	200 nits (candela/m^2)	200 nits (candela/m^2)
Backlight life:	25,000 hours	50,000 hours	10,000 hours	50,000 hours
Video memory	1Mb	2Mb		2Mb
Computer				
Processor:	Pentium® 133MHz	AMD K-6 350MHz or Pentium® 266MHz	N/A	AMD K-6 350MHz or Pentium® 266MHz
Memory:	Standard: 16Mb RAM Option: 16 to 128Mb	Standard: 64Mb RAM Option: 32 to 256Mb		Standard: 64Mb RAM Option: 32 to 256Mb
Storage:	20Mb solid state drive	Min. 6.0Gb hard drive Solid state drive options*		Min. 6.0Gb hard drive Solid state drive options*
Operating systems	Windows® CE	Windows® 95* Windows® 98 WindowsNT® Windows® 2000§	Windows® 95* Windows® 98 WindowsNT® Windows® 2000§	Windows® 95* Windows® 98 WindowsNT® Windows® 2000§
Connectivity				
Expansion card slots:	2 ISA , 3/4 length (9.5") size‡	1 ISA , 1 ISA/PCI combo‡	MTL678M monitor is supplied with the following two ports for connection to a standard PC:	1 ISA , 1 ISA/PCI combo‡
Serial port A:	1 x RS-232E/422/485, DB-25 (male), software configurable	1 x RS-232E†, DB-25 (male)		1 x RS-232E†, DB-25 (male)
Serial port B:	1 x RS-232E†, DB-9 (male)	1 x RS-232E†, DB-9 (male)	1 x 15-pin female D-connector (VGA)	1 x RS-232E†, DB-9 (male)
Parallel port:	1 x DB-25 (female)	1 x DB-25 (female)		1 x DB-25 (female)
USB port:	None	1 x USB port		1 x USB port
Keyboard:	5-pin female DIN connector	PS/2 port		PS/2 port
Floppy drive port:	26-pin female D-type connector for external floppy disk drive, 3.5 inch 1.44Mb floppy disk	26-pin female D-type connector for external floppy disk drive, 3.5 inch 1.44Mb floppy disk	1 x 9-pin male D-connector (RS-232 for touch screen data)†	26-pin female D-type connector for external floppy disk drive, 3.5 inch 1.44Mb floppy disk
Ethernet support:	Onboard RJ-45 10 BaseT and DC-15 AUI connector	Onboard RJ-45 10/100 BaseT connector		Onboard RJ-45 10/100 BaseT connector
Electrical				
Power supply - ac:	90-264V ac, 47-63Hz	90-264V ac, 47-63Hz	90-264V ac, 47-63Hz	90-264V ac, 47-63Hz
Power supply - dc*	10.5-30V dc	11-20 & 18-36V dc	10.5-30V dc	11-20 & 18-36V dc
Weight:	Short : 9.0 kg (20 lb) Long : 10.0 kg (22 lb)	Short : 8.4 kg (18.5 lb) Long : 9.0 kg (19.9 lb)	10.0 kg (22 lb)	10.6 kg (23.4 lb)

* Available with custom products. Contact MTL for details.
† RS-422/485 options available. Contact MTL for details.
‡ Contact MTL for details of hazardous area certification of expansion cards.
§ Contact MTL for availability.

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MTL670 SERIES COMMON SPECIFICATION

COMMON SPECIFICATION

Location
Zone 2,IIC, T4 hazardous areas
Class 1, Div 2, Grps A–D, T4 hazardous locations

TouchSurround
Standard or customised
User changeable

Software features

Touch-screen driver
Microsoft® mouse compliant emulation

TouchSurround button definition
Allows user key definition

Backlight saver
Backlight switches off after definable period of inactivity
Reactivated by touching the screen

Touch-screen configuration
Config for double touch, beeping, drag and drop and repeat rates

Brightness control
Optimises brightness for the environment and extends the backlight life

Battery
Lithium, 3Volt - operating life of > 7 years

Environmental

Shock and vibration
Horizontal, vertical and transverse axis cycle time: 15 minutes

Vibration	**operating**	**non-operating**
5 to 57Hz (displacement)	0.15mm	0.38mm
58 to 2000Hz (acceleration)	1.0g	2.5g
Shock	**operating**	**non-operating**
Acceleration:	15g	30g
Pulse duration:	11ms	11ms

Temperature

Operating temperature:	0°C to 50°C
Storage temperature:	-25°C to 60°C

Humidity
95% non-condensing

Max altitude

Operating:	2,000 metres (6,560 feet)
Storage:	12,192 metres (40,000 feet)

Dust and moisture resistance
The units are rated NEMA 250, Type 4X (section 4.7) and NEMA 250, Type 12 (section 4.12) and are approved by:
CSA C22.2 No. 94-M91 encl. 4X, encl. 12.
UL 50 type 4X, 12 enclosure.
IP66, per IEC529 (1989), "Degrees of Protection Provided by Enclosures"

Materials of construction

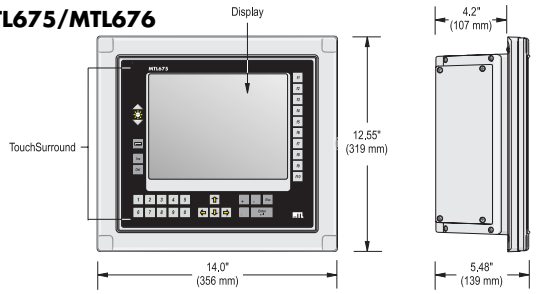
Case material:	diecast aluminium
Case finish:	baked powder polyester
Screen:	toughened glass

Chemical resistance
The touch screen resists all chemicals that can safely be used with glass. Chemicals having no adverse effect on the case and touch screen include:
Acetic acid (5%)
Acetone/MEK 50/50
Butylacetate
Ethenol/isopropanol 50/50
Hydrochloric acid (concentrated)
Gasoline
Mineral oil
Petroleum oil
Sodium hydroxide (40%)
Trichloroethane

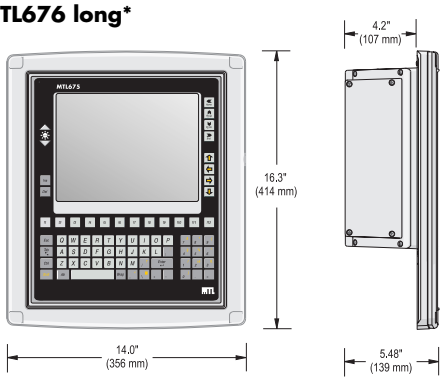
Microsoft® is a registered trademark of Microsoft® Corporation

DIMENSIONS

MTL675/MTL676

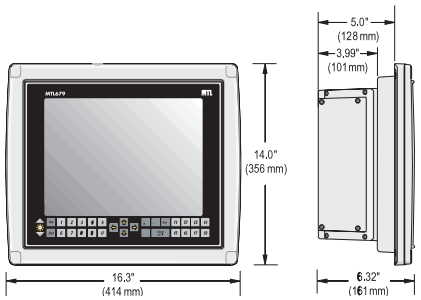


MTL675/MTL676 long*

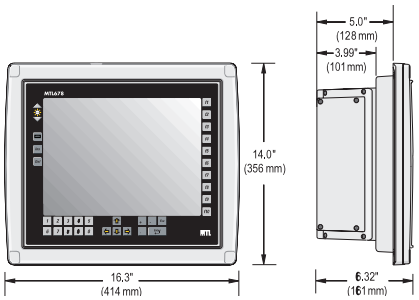


** Options available with custom product*

MTL679



MTL678M



APPROVALS

Authority	**Canada (CSA)**	**Germany (TÜV)**	**USA (FM)**
Standard	C22.2 No. 0 - M1991 0.4 - M1982 94 - M1991 142 - M1987 213 - M1987 E79 - 15-95	prEN50021: 1997-07 IEC 79-15: 1987	3600 General Requirements 3611 Non-incendive
Approved for	Class 1, Div 2 Groups A-D Ex nA IIC T4 T_{amb} = 50°C	Ⓔx II 3G Ex nV II T4 or Ex nA II T4 T_{amb} = 50°C	NI/1/2/ ABCD, T4 T_{amb} = 50°C
Model no.	**Certificate/file no.**		
MTL675	LR101536-32	TÜV98 ATEX 1270X†	J.I.3D5A4.AX
MTL676	*	*	*
MTL679	*	*	*
MTL678M	LR101536-41	TÜV99 ATEX 1410X	J.I.3002686

** Certificate pending. Contact MTL for information. † See certificate for conditions of use.*
Note: The equivalent Dynapro model numbers for MTL670 Series are:
MTL675 — Ergotouch 3015; MTL676 — ET 3215; MTL678M — ET 300; MTL679 — ET 3255.

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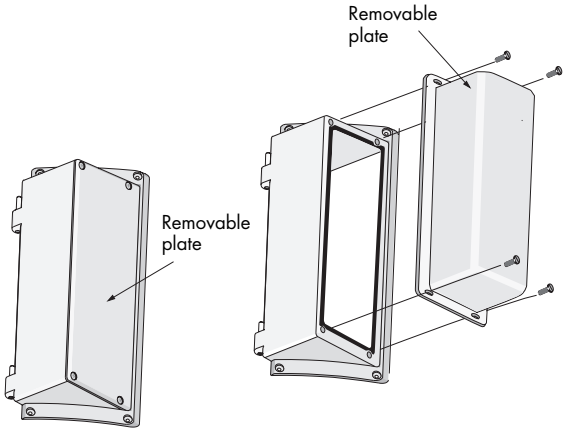
MTL670 SERIES ACCESSORIES

ACCESSORIES

EXH67 Extended hatch

The extended hatch provides extra space to accommodate bulky connectors/fittings, while retaining the NEMA 4X/IP66 integrity provided by the standard hatch. It is supplied with four 3/16- x 3/8-inch screws (cross-head), hatch access seal and installation instructions.

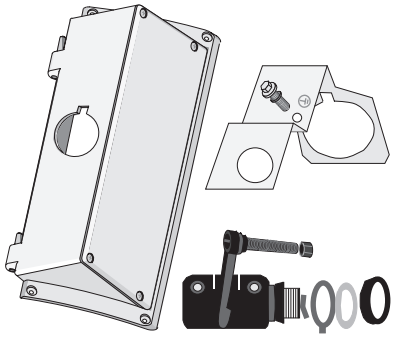
Note: *The MTL670 Series units are supplied with standard NEMA 4X/IP66 protected hatch cover plates. Specify EXH67 if the extended cover is required to replace the standard cover plate.*



Standard hatch **Extended hatch**

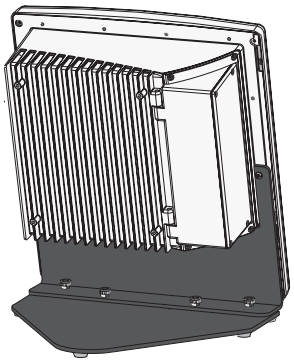
BMH67 Boom mount kit - standard hatch/ BME67 Boom mount kit - extended hatch

The boom mount kit enables MTL670 Series units to be mounted on a post, boom or suspension arm. The boom hatch is available in two sizes to accommodate regular or bulky connectors/fittings. The boom mount kit comes with standard or extended hatch cover, ac conduit bracket, 3/16- x 1/4-inch ac grounding screw, rose boom coupling (NEMA 12/IP52 only), post or boom coupling, eight 3/16- x 3/8-inch screws (cross-head), hatch access seal and installation instructions.



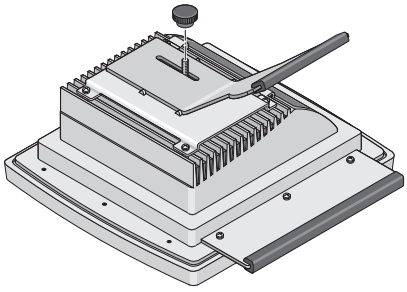
DSK675 Desktop stand

This desktop stand enables the MTL675 and MTL676 to be mounted on a desk, bench or tabletop, an option ideal for demonstrations or development. The two piece stand fits both long and short enclosures and comprises of a base, stand, foam pad (installed), four plastic knob nuts, four 5/16- x 3/8-inch screws (cross-head), and installation instructions.



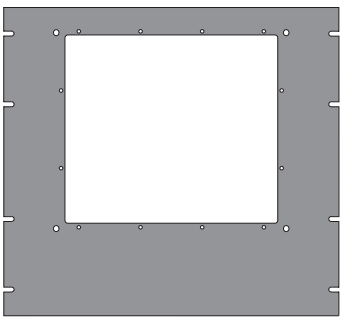
DSK678 Desktop stand

This desktop stand enables the MTL678M and MTL679 to be mounted on a desk, bench or tabletop and comprises of a pivot plane, mounting bracket and an angle bracket which can be adjusted by means of a screw knob.



RPK675/RPK678 19-inch rack mount kit

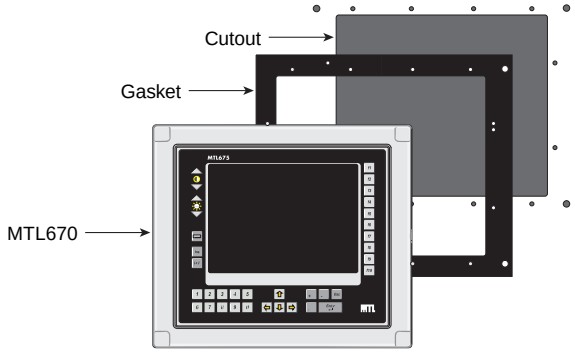
The rack mount kit enables the MTL670 Series to be mounted in a standard 19-inch industrial rack. The kit fits both long and short enclosures and consists of the 19-inch rack panel (colour: black), eight 5/16-inch clip nuts, eight 5/16- x 5/8-inch slot screws, eight 5/16-inch countersunk washers, twelve 5/16-inch flat washers, twelve 5/16-inch lock washers, twelve 5/16- x 1/2-inch screws (cross-head) and installation instructions.



ACCESSORIES (continued)

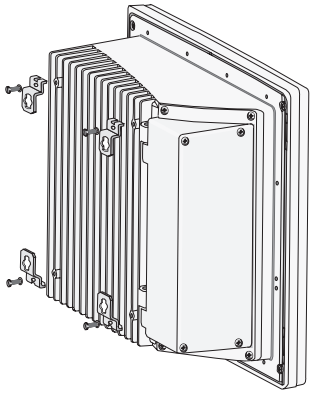
IPK675/IPK678 panel kit

The panel kit is a gasket which mounts between the MTL670 Series bezel and the wall or panel. When properly installed, the gasket provides a NEMA 4X/IP66 seal around the front of the unit. The kit comprises a panel seal, twelve 5/16-inch lock washers, twelve 5/16-inch flat washers, twelve 5/16- x 1/2-inch screws (cross-head), twelve 5/16- x 3/4-inch screws (cross-head) (provided for different panel thicknesses) and installation instructions.



SUR67 Wall hanging kit

The wall hanging kit enables the MTL670 Series to be mounted on a flat, vertical surface without a cut-out. A set of brackets attached to the rear of the unit enable it to be hung on screws or bolts affixed to the surface. The kit comprises four mounting brackets, four 5/16-inch lock washers, four 5/16-inch screws (cross-head) and installation instructions.



FDC67 External floppy drive cable

The external floppy drive cable connects the 26-pin connector on the MTL670 to a standard connector on a 3.5-inch 1.44Mb floppy drive unit.

CAB67 MTL678M cable sets

A CAB67 cable set connects the MTL678M mounted in the hazardous area to a PC mounted in the safe area. Each cable set contains two cables: an analog VGA cable (15-pin, high density, D-type, male to male) and an RS232 data cable (9-pin, D-type, male to female). The sets are available in four lengths.

	Cable length(m)	cable length (feet)
CAB67-3	3	10
CAB67-7	7.5	25
CAB67-15	15	50
CAB67-30	30	100

TO ORDER, SPECIFY:

MTL675-CE	computer with 10" display/Windows® CE
MTL676-98	computer with 10" display/Windows® 98
MTL676-NT	computer with 10" display/WindowsNT®
MTL676-2000	computer with 10" display/Windows® 2000
MTL678M	Monitor with 14" display
MTL679-98	computer with 15" display/Windows® 98
MTL679-NT	computer with 15" display/WindowsNT®
MTL679-2000	computer with 15" display/Windows® 2000
CAB67-3	3m cable set for MTL678M
CAB67-7	7.5m cable set for MTL678M
CAB67-15	15m cable set for MTL678M
CAB67-30	30m cable set for MTL678M
EXH67	Upgrade to extended hatch
BMH67	Boom mount kit - standard hatch
BME67	Boom mount kit - extended hatch
DSK675	MTL675/676 desktop stand
DSK678	MTL678M/679 desktop stand
RPK675	MTL675/676 19" rack mount kit
RPK678	MTL678M/679 19" rack mount kit
IPK675	MTL675/676 panel kit
IPK678	MTL678M/679 panel kit
SUR67	Wall hanging kit
FDC67	External floppy drive cable
BRK675	MTL675 backlight replacement kit
BRK676	MTL676 backlight replacement kit
BRK678	MTL678M backlight replacement kit
BRK679	MTL679 backlight replacement kit

Note: Contact MTL for user customisation