

# MTL670 Series Touch Screen Computers & Monitor

- ◆ Designed for the process industry environment
- ◆ Certified for Zone 2 and Division 2
- ◆ Touch screen
- ◆ Customisable TouchSurround™
- ◆ 10", 14" or 15" colour display
- ◆ Compact size
- ◆ Near Field Imaging™ (NFI)
- ◆ Flexible mounting options
- ◆ Pentium® processor
- ◆ Easy connection (LAN)
- ◆ MTL678M touch screen monitor

## - Overview

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 Class 1, 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.

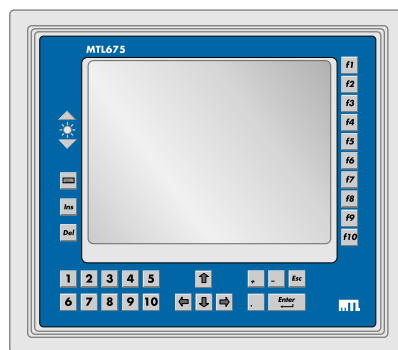
## TOUCHSURROUND

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 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.

*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*



Standard Touch Surround

## 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.*

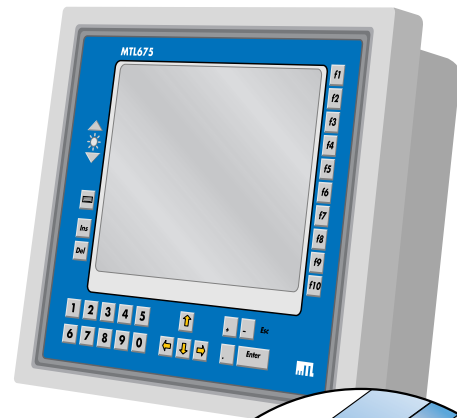
*'Imaging' refers to a digital signal processing technique which allows the discrimination of single, compared to multiple, points of contact.*

## INTEGRATION

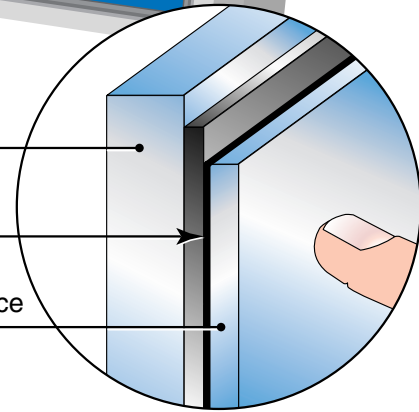
The computers and monitors are designed to integrate into both control networks and plant-wide networks for monitoring and control of I/O devices while also exchanging data with MIS/ERP systems. The built-in Ethernet interface provides immediate connectivity to one of the most common networks on the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

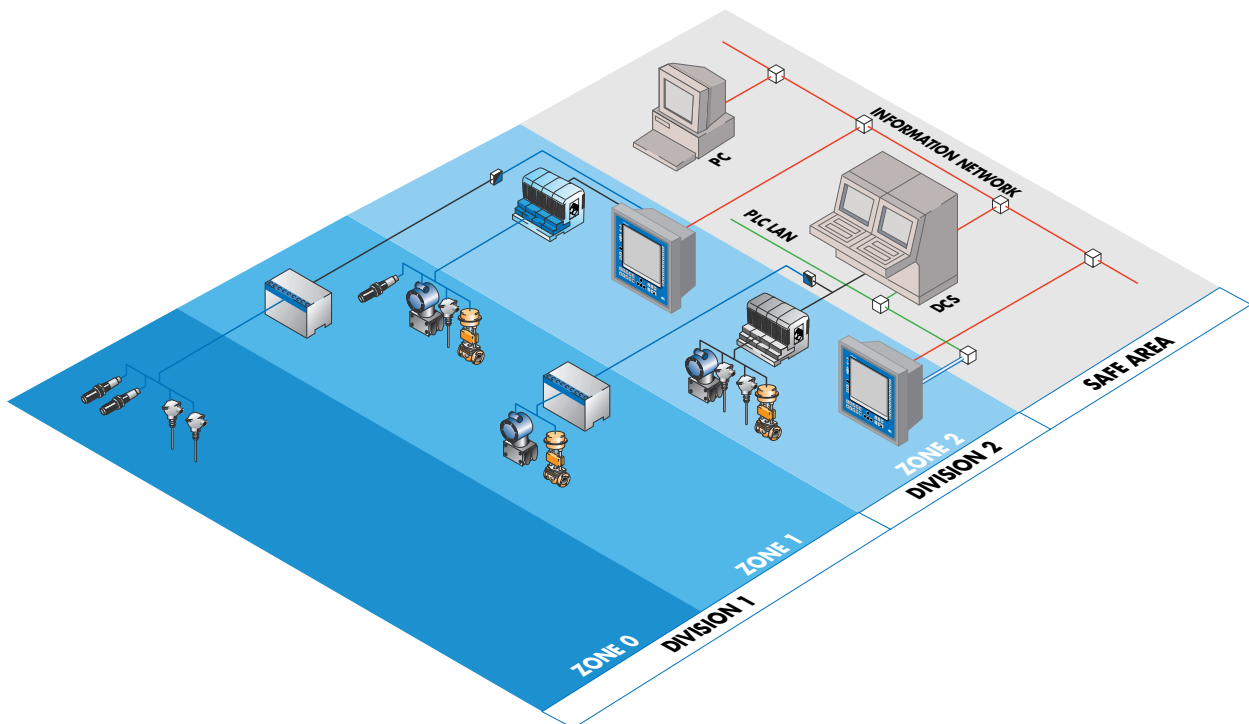


Glass substrate  
ITO sensor layer  
Glass touch surface



**Composition of the touch screen**

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



# MTL 670 Series Touch Screen Computers & Monitor

## Specifications



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

‡ Contact MTL for details of hazardous area certification of expansion cards.

† RS-422/485 options available. Contact MTL for details.

§ Contact MTL for availability.

Microsoft®, Windows® 2000, Windows® 98, Windows® 95, Windows® CE and WindowsNT® are registered trademarks of Microsoft® Corporation  
Pentium® is a registered trademark of Intel Corporation

# MTL 670 Series Touch Screen Computers & Monitor

## 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

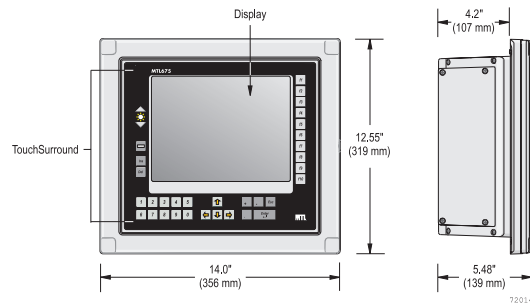
### Chemical resistance

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:

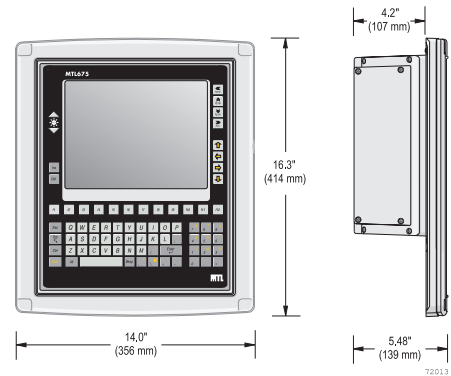
|                                  |                        |
|----------------------------------|------------------------|
| Acetic acid (5%)                 | Gasoline               |
| Acetone/MEK 50/50                | Mineral oil            |
| Butylacetate                     | Petroleum oil          |
| Ethenol/isopropanol 50/50        | Sodium hydroxide (40%) |
| Hydrochloric acid (concentrated) | Trichloroethane        |

### DIMENSIONS

#### MTL675/MTL676

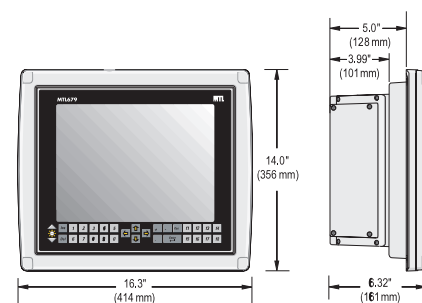


#### MTL675/MTL676 long\*

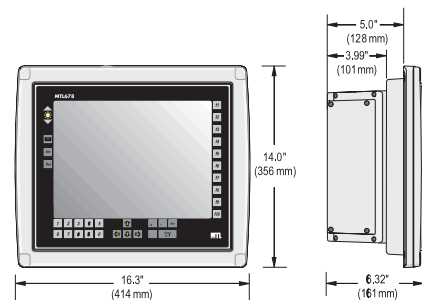


\* Options available with custom product

#### MTL679



#### MTL678M



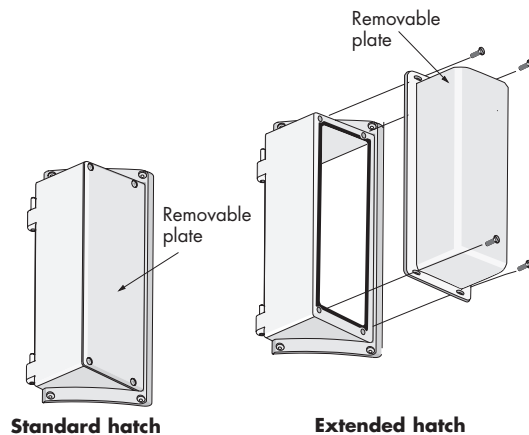
# MTL 670 Series Touch Screen Computers & Monitor

## Accessories

### EXH67 Extended hatch

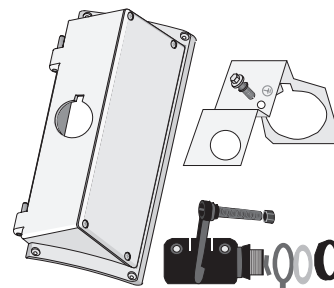
The extended hatch provides extra space to accommodate bulky connectors/fittings, while retaining the NEMA 4X/IP66 integrity provided by the standard hatch. It is supplied with four 3/16- x 3/8-inch screws (cross-head), hatch access seal and installation instructions.

*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.*



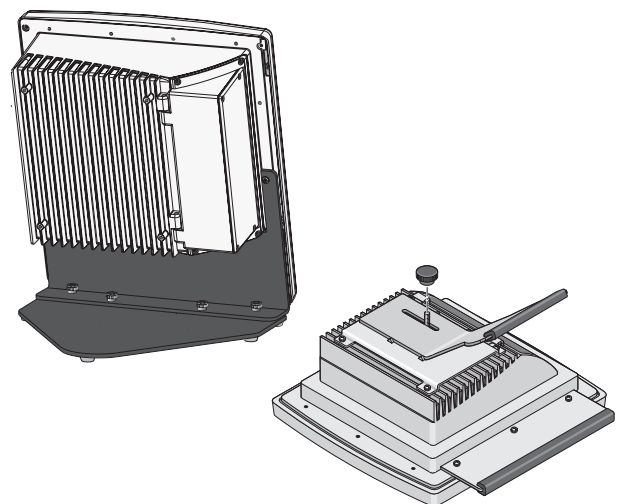
### BMH67 Boom mount kit - standard hatch/ BME67 Boom mount kit - extended hatch

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.

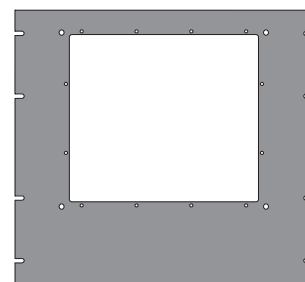


### DSK678 Desktop stand

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.

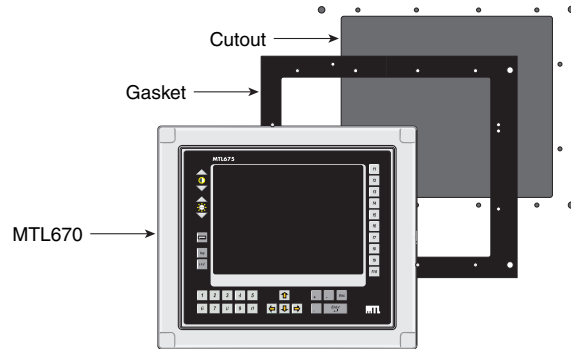


# MTL 670 Series Touch Screen Computers & Monitor

## Accessories (continued)

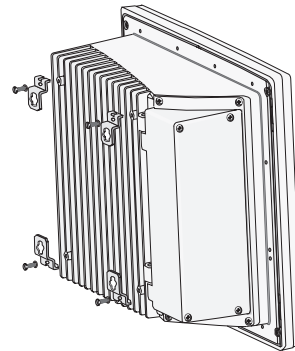
### IPK675/IPK678 panel kit

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                 |

# MTL 670 Series Touch Screen Computers & Monitor

## APPROVALS

| Authority           | Canada (CSA)  | Germany (TÜV)  | USA (FM)  |
|---------------------|---|--|---|
| <b>Standard</b>     | C22.2 No. 0 - M1991<br>0.4 - M1982<br>94 - M1991<br>142 - M1987<br>213 - M1987<br>E79 - 15-95 | prEN50021:<br>1997-07<br><br>IEC 79-15:1987                          | 3600 General Requirements<br>3611 Non-incendive |
| <b>Approved for</b> | Class 1, Div 2<br>Groups A-D<br>Ex nA IIC T4<br>T <sub>amb</sub> = 50PC                       | Ex II 3G<br>Ex nV II T4 or<br>Ex nA II T4<br>T <sub>amb</sub> = 50PC | NI/1/2/<br>ABCD, T4<br>T <sub>amb</sub> = 50PC  |
| <b>Model no.</b>    | <b>Certificate/file no.</b>   |  |   |
| <b>MTL 675</b>      | LR101536-32   | TÜV98 ATEX 1270X†  | J.I.3D5A4.AX                                    |
| <b>MTL 676</b>      | *   | *  | *   |
| <b>MTL 679</b>      | *   | *  | *   |
| <b>MTL 678M</b>     | 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.

## TO ORDER, SPECIFY:

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