Tough SmartMarquee™ Marquee with the...

Read, Calculate, Compare PLC tags and Perform...

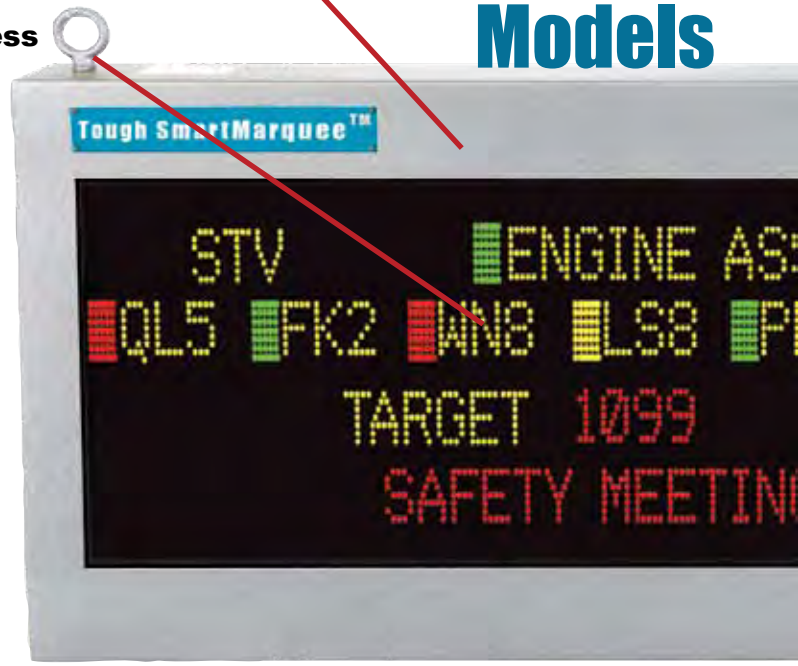
Industrially Robust, NEMA 4X, Class I, Div II choice of Aluminium or Stainless Steel Marquees

UTICOR Tough

Matched LEDs for Uniform Brightness

Uticor uses specially matched LEDs for its marquee product lines. Hence, the brightness of LEDs remain uniform over the life of marquee, making it pleasant to look at.

10 Models



Tough yet Energy Efficient

Even though built tough like a tank, the new Tough SmartMarquees from Uticor are extremely energy efficient and use typically 1/3rd the power of our competitors

Higher Temperature Rating, 60° C

Highly efficient Tough SmartMarquee consume less power and thus less heat allowing it to operate at higher temperatures.

96 Hour Burn-in

In addition to matched LEDs, Uticor products goes through a 96 hour burn-in period to eliminate infant mortality of thousand of LEDs in a typical marquee

Quality - 3 year Warranty

The high quality manufacturing process translates in years of trouble free service with consistent looking display. Uticor reliable manufacturing allows us to offer a THREE YEAR warranty on all it's marquee products.

Scroll and Blink your Messages

With Tough SmartMarquee, display your messages Stationary, Scrolling or Blinking based on the embedded codes in an ASCII string.

International Character Set

Take advantage of Tough SmartMarquee's International character set to display your messages in multiple international languages. This option is switch selectable to allow message display in U.S. English, French, Danish, Swedish, German, Cyrillic or Japanese Kana!

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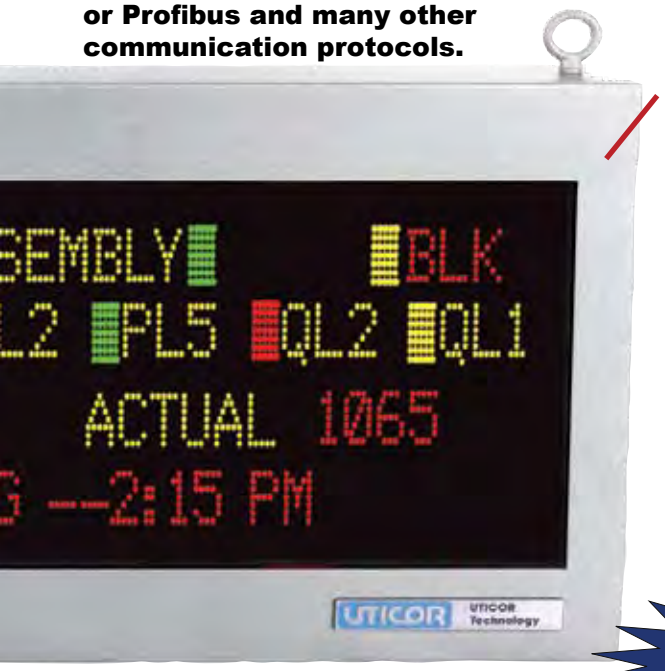
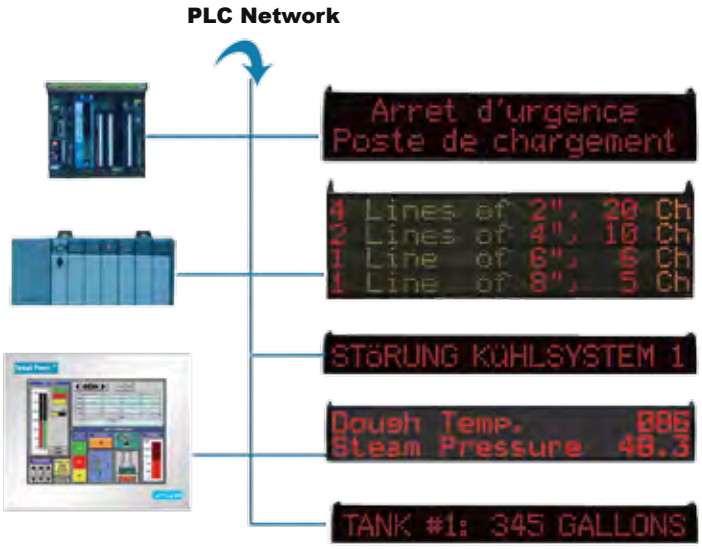
...Intelligence of an HMI

...Complex Math Operations, Generate Alarms

Easy to Apply and Network

No ladder logic change required when adding a display to communicate Machine/Process status and alarms to plant floor as long as the data is available in PLC. Network using ASCII (RS422), Ethernet, DeviceNet, DH+/RIO, Mobus RTU, Modbus+, CCLink, DH 485, Modbus TCP/IP, SRTP or Profibus and many other communication protocols.





Connects to Major PLCs and Networks

Uticor Tough SmartMarquees connects to Allen Bradley, Modicon, Siemens, Mitsubishi, DH+, Profibus, etc.

Mixed Charcter Heights on the Same Line

Displays mixed character sizes on the same line! Other marquees limit you to use just one character per line, which means you cannot use 2", 4", 6" or 8" character sizes on the same line.

Exclusive

Tough SmartMarquees with the Intelligence of Toughpanels & Drivers for Most PLCs & Networks

Tough SmartMarquee master model has Uticor's HMI CPU built-in, allowing the Marquee to perform complex logic while interfacing to two PLC/Network protocols at the same time. It also allows sending Marquee messages over internet/intranet

Tough SmartMarquee ™

Uticor Marquees, rated No.1, are Designed Tough...

25 year Market Leadership

Uticor Marquees are a class in themselves. They have been used in plants through-out the world particularly in the automotive, steel, tyre, canning, brewery and cement plants. Tens of thousands of Uticor Marquees have worked flawlessly in General Motor, Ford, Chrysler, Mitsubishi and Toyota plants displaying crucial information to plant personnel in their press and paint shops. **The word Uticor is synonymous with high class automotive marquees.** Uticor has consistently ranked among the very Top suppliers of Alpha-numeric message displays.

Uticor Marquees have the reputation of surviving an inadvertent forklift hit inside a plant. In fact many plant personnel will tell you that Uticor's famous PMD3000, with a heavy duty steel construction, not only survive a forklift hit, it was the forklift that got damaged.

Survives a forklift hit!

HALT-HASS Tested

Uticor Products go through HALT (Highly Accelerated Life Test) to identify and eliminate components/areas likely to fail prematurely. HALT-HASS process simulates product life over the next 20 years of operation.

96 Hour Burn-in

In addition to matched LEDs, Uticor products goes through a 96 hour burn-in period to eliminate infant mortality of thousand of LEDs in a typical marquee. If you pay close attention, for example at airports, you would see that quite often a marquee would have developed dark spots on some characters. A 4 line 40 Character marquee has 7,680 individual LEDs. Even a 0.05% infant mortality (typical of LEDs and other optoelctronic semiconductors) could have four bad LEDs. 96 hour burn-in assures heating out the weak LEDs before the Tough SmartMarquee is shipped to you.

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Tough SmartMarquee ™

Designed for Durability, Energy Efficiency and High Temp.

Tough SmartMarquee Maintains Uniform Brightness Over Life! HOW?

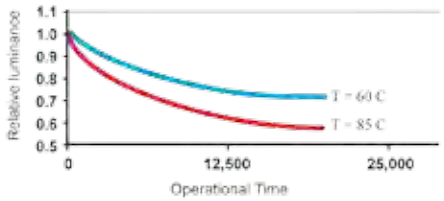
The luminous intensity of an LED depends upon the current going through it. It is also a known fact that the luminous intensity degrades over a period of time. If the current flowing through each one of the 3840 LEDs in the competitor's marquee shown to the right varies even as much as 10% and the luminous intensity differs even as much as 20%, the result would be a sign that will look great when first installed but would need replacement within a few years because some of the LEDs would be dimmer than others or simply burnt out.

In order to avoid this dilemma and have the marquee look as good as when first installed, Tough SmartMarquees accomplish this feat by:

1. Using Matched Luminous Intensity LEDs
2. Carefully controlling the current through each LED
3. Reduce switching current losses to almost nothing
4. Use very efficient, 95% plus, switching power supplies
5. Perform a 96-hour burn-in test under power to weed out marginal LEDs

Uticor after 10 Years

Competitor's Marquee after 10 Years



LED Luminous Intensity Aging Curve

Energy Efficient, 1/3rd of the Power Consumption

When designing a marquee, one of the biggest challenges is to manage the power. Even though each LED may need only 10 mA of steady state current or 80-100 mA of peak current, the number of LEDs in even a small marquee is quite large.

For example, a 2 line 20 character tri-color sign has 1920 Red and 1920 Green LEDs and could theoretically draw a steady state current of 3840 x 10 mA or 38 amps, even though not all LEDs will be "on" at the same time. However, you can expect a current of 25 amps.

Most competitive marquees use rather inefficient power supplies and would thus use approximately 200 watts. That is a lot of power which results in a significant increase in internal temperature causing them to design **Thermal Overloads** or sometimes even **Fans** to keep the marquee cool. AB's Inview or Adaptive marquees for example are rated at 55° C but have an automatic **dimdown** at 55° C and an automatic shutdown at 70° C.

Not so with Uticor Tough SmartMarquee! With AVG's innovation and vertical integration strength, we have designed the Tough SmartMarquee to consume 1/3rd of typical power and have used a very efficient power switching system (Patent Pending) without sacrificing the LED luminous intensity. This innovative and efficient design automatically results in reducing the weight of Tough SmartMarquee.

RESULT:
NO OVER HEATING
NO THERMAL SHUTDOWN
Full operation up to 60° C Ambient!

You'll Get Outstanding Quality, Features, Price and...

Mixed Character Heights on the Same Line

Tough SmartMarquee is capable of displaying mixed character sizes on the same line! Other marquees limit you to use just one character size per line, which means you cannot use 2", 4", 6" or 8" character sizes on the same line.

Here is an Example!

Say we have a 2 Line, 20 Character per line marquee.
It can display either 2 lines of 20 2" characters, or 1 line of 10 4" characters.

The message you want to display is:

Temp. Zone 1: 454

And you want to see the temperature "454" 200 feet away, using 4" characters. With competitors' marquees you either scroll your message or are forced to get a much bigger marquee at more than double the cost.

Not with Tough SmartMarquee!

Since you can mix character heights, you can achieve your objective by displaying the message like this:

This allows Temperature "454" to be visible 200 feet away and still have a 20 character 2" Marquee.

Scroll and Blink Your Messages!

With Tough SmartMarquee, messages displayed can be Stationary, Scrolling or Blinking based on the embedded codes in an ASCII string. Left-scroll messages feature "smooth scrolling", that is, letters move one LED at a time. Each portion of a letter will illuminate every dot in that row when it scrolls across the display. Upward-scrolling messages actually do not scroll at all. Rather, they "wipe on" to the display in an upward fashion. The first section of message lines appear, then the display pauses, clears, and displays the next section of text.

Tough SmartMarquee's non-scrolling messages can contain blinking characters whereas scrolled messages cannot have blinking characters. The time interval for 'on' and 'off' states of a blinking message can also be controlled.

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...Performance From the Tough SmartMarquee Family!

International Character Set

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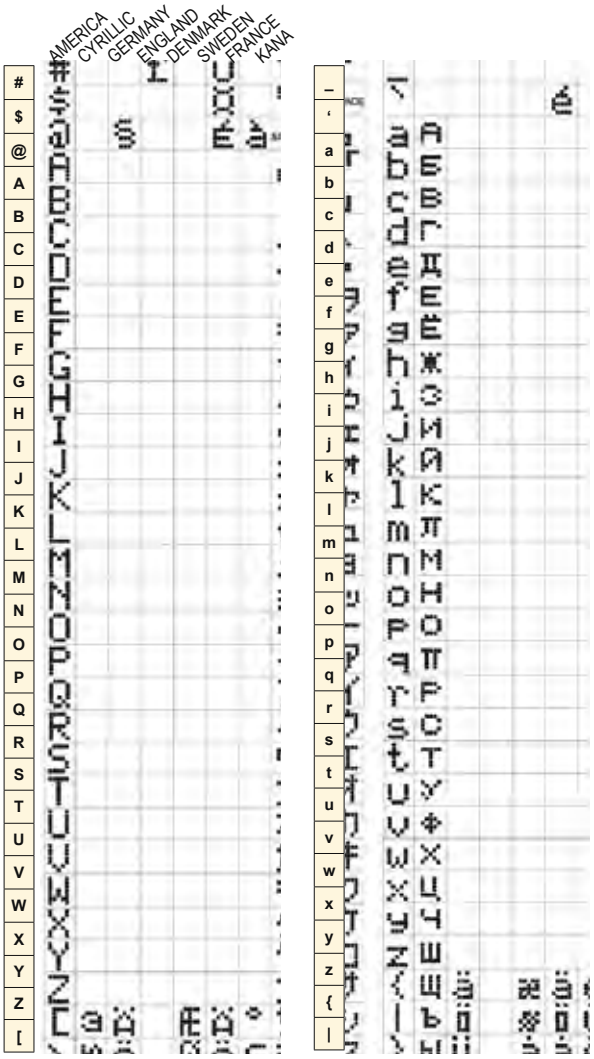


Full 5x8 Dotmatrix Character

Uticor Marquees uses a full 5x8 Dotmatrix LED block. Unlike some others, we do not compromise the appearance of the marquee by using a 5x5 LED block to reduce cost

5x8, 1 for space

5x5

Tough SmartMarquee™

Master Marquee with Toughpanel HMI CPU

Message Database

With Tough SmartMarquee, messages displayed can be Stationary, Scrolling or Blinking based on the embedded codes in an ASCII string. These messages along with their display characteristics are stored inside the Tough SmartMarquee. The number of messages stored are practically unlimited. Messages can be imported from and exported to an Excel spread sheet

Alarms & Alarm Database

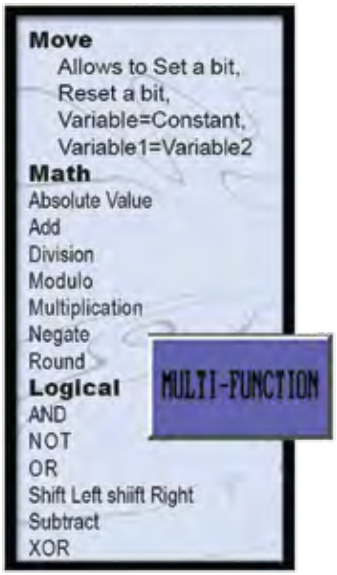
Tough SmartMarquees offer a sophisticated Alarm system. It allows you to monitor events (bits), and values (registers). The values can be monitored for a variety of conditions (=, >, <, in/out of range). The alarms can be selectively displayed, printed and/or logged. The alarms are also stored in a separate alarm database which can also be imported from or exported to Excel spread sheet.

Connects to most Major PLCs and Networks

Uticor Tough Master Marquees connect to Allen Bradley, Modicon, Siemens, Mitsubishi, DH+, Profibus, etc. Essentially all drivers serial as well as Network that are available on Toughpanels are also incorporated into master Tough SmartMarquees.

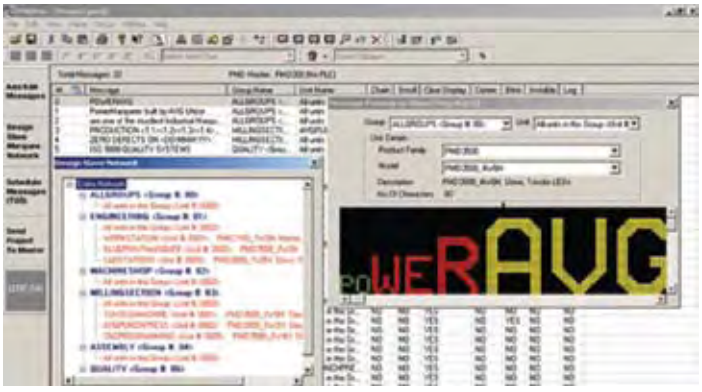
Math-logic/Multi-function Buttons, Overlapping Objects

Master Tough SmartMarquees offer a sophisticated control, called the Multi-function Object. As the name implies, this Object allows you to perform multiple functions, including Mathematical and Logical operations on PLC data. For example, you can set/reset multiple bits & transfer constants or variables or expressions to tags. Remarkably, this Benefit allows a user to perform up to 20 operations with one Object. Master Tough SmartMarquee also allows you to perform these Multiple functions under the PLC control a very useful feature to offload mathematical & logical computations from the ladder logic to the Marquee.



Software

Master Tough SmartMarquees are programmed using an easy, Windows based programming software. This software contains message import/export capabilities to other applications.



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Tough SmartMarquee™

Slave Marquee needing ASCII or PMD commands

Slave Tough SmartMarquees need to have the message to be displayed communicated to the marquee. These marquees do not have message storage capability except the last message sent to it. The message protocol can either be simple ASCII or PMD protocol that has been extensively used for Uticor Marquees. ASCII or PMD selection is made by the user through a DIP switch on the back panel of the Marquee.

Slave Tough SmartMarquees can also be ordered with Ethernet, DeviceNet, or Profibus communication interface built-in.
This allows you to connect multiple Slave Tough SmartMarquee over any of these networks and reduces hard wiring costs.

ASCII String directly from PLC

Most PLCs have the capability of generating ASCII string for e.g. Allen Bradley SLC and Micrologic series have AWT ASCII write command, Mitsubishi FX series PLCs have RS (FNC 80) and Siemens S7 series have SMT string generator instructions.

Use AWT ASCII Write with:

SLC 5/03 OS301, OS302
SLC 5/04
SLC 5/05
MicroLogix 1200 Series B
MicroLogix 1500 Series B

Connect MicroLogix to RS232 port of Slave Tough SmartMarquee.

ASCII String over Ethernet

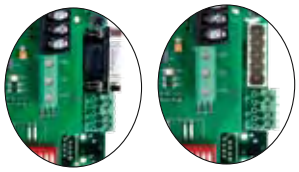
ASCII strings can be also sent to the Slave Tough SmartMarquees over Ethernet medium using TCP/IP protocol.

PMD Input from Uticor 3100 Master Marquee or PMD External Message Controller

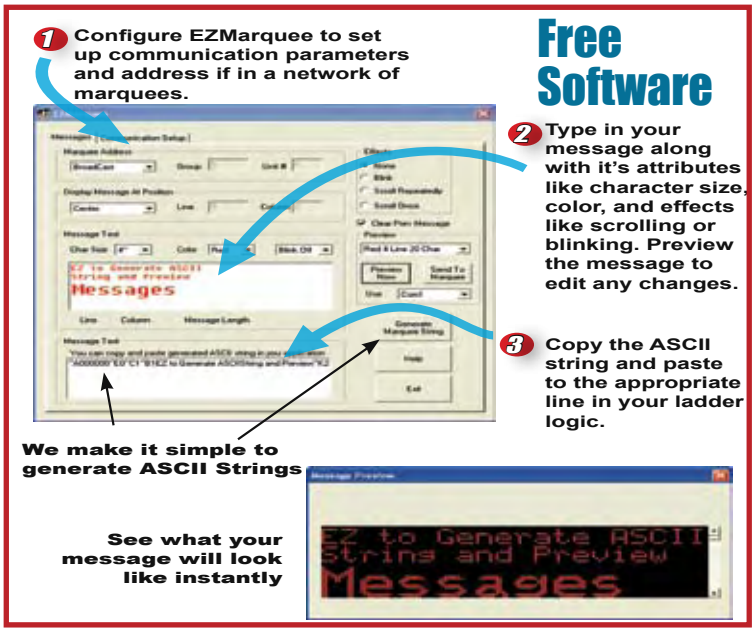
The Slave Tough SmartMarquees can also accept message strings in PMD protocol. This protocol has additional advantages of being able to blink a single character or word, have a chained message, invisible message or a circular message que.

ASCII String from DeviceNet or Profibus

Profibus DeviceNet



Slave Tough SmartMarquee models when ordered with built-in DeviceNet or Profibus interface provides DeviceNet or Profibus connectivity. This interface provides a digital, multi-drop network that can be used for communicating with DeviceNet or Profibus enabled controllers and I/O devices. These slave interfaces accept ASCII strings from their respective masters. DeviceNet control system provides a single point of connection both for configuration and support for I/O as well as explicit messaging.
The Profibus communication interface also has an auto-detect feature for the baud rate of the Profibus network.



Tough SmartMarquee™

Applying Tough SmartMarquee could not be Simpler!

A New Breed of Marquees from the No.1 recognised name.

Uticor Marquees are known for their high quality, uniformly bright LEDs, connectivity to major PLC networks, and robustness.

Besides the construction and appearance of a marquee display, one must consider the ease or relative complexity of system implementation. Most marquees offered by our competitors require significant change in PLC ladder logic to display messages or alarms with embedded PLC variables. This requires alteration or modification to the current PLC program. Most control engineers do not want to modify the PLC program for fear of introducing an inadvertent error or bug in the program which could cause serious downtime. The Uticor Tough SmartMarquee eliminates the need for any PLC program change whatsoever! It becomes another node on the PLC network which reads and writes to PLC registers just like another touchpanel or HMI. In fact the Tough SmartMarquee CPU is the same as the one used in Uticor Toughpanels.

1. A simple to use windows based program with message management configuration tools and export/import features.
2. Making application of marquees yet easier by adding the ability to display messages without touching PLC program.
3. Flexible data embedding in messages by allowing you to embed any random registers in the messages.
4. Use Internet/Intranet to View and Control messages

Add a Marquee to a PLC Network without Changing PLC Program

Tough SmartMarquee now allows you to add a display to communicate Machine/Process status and alarms to plant floor without having to make any changes to PLC program (as long as the data is available in PLC).

- **Easiest to Apply**

No Ladder Logic Change

- **Connectivity**

Major PLC Networks

- **Matched LEDs**

Uniformly Bright Displays

- **Quality**

4 Years Warranty

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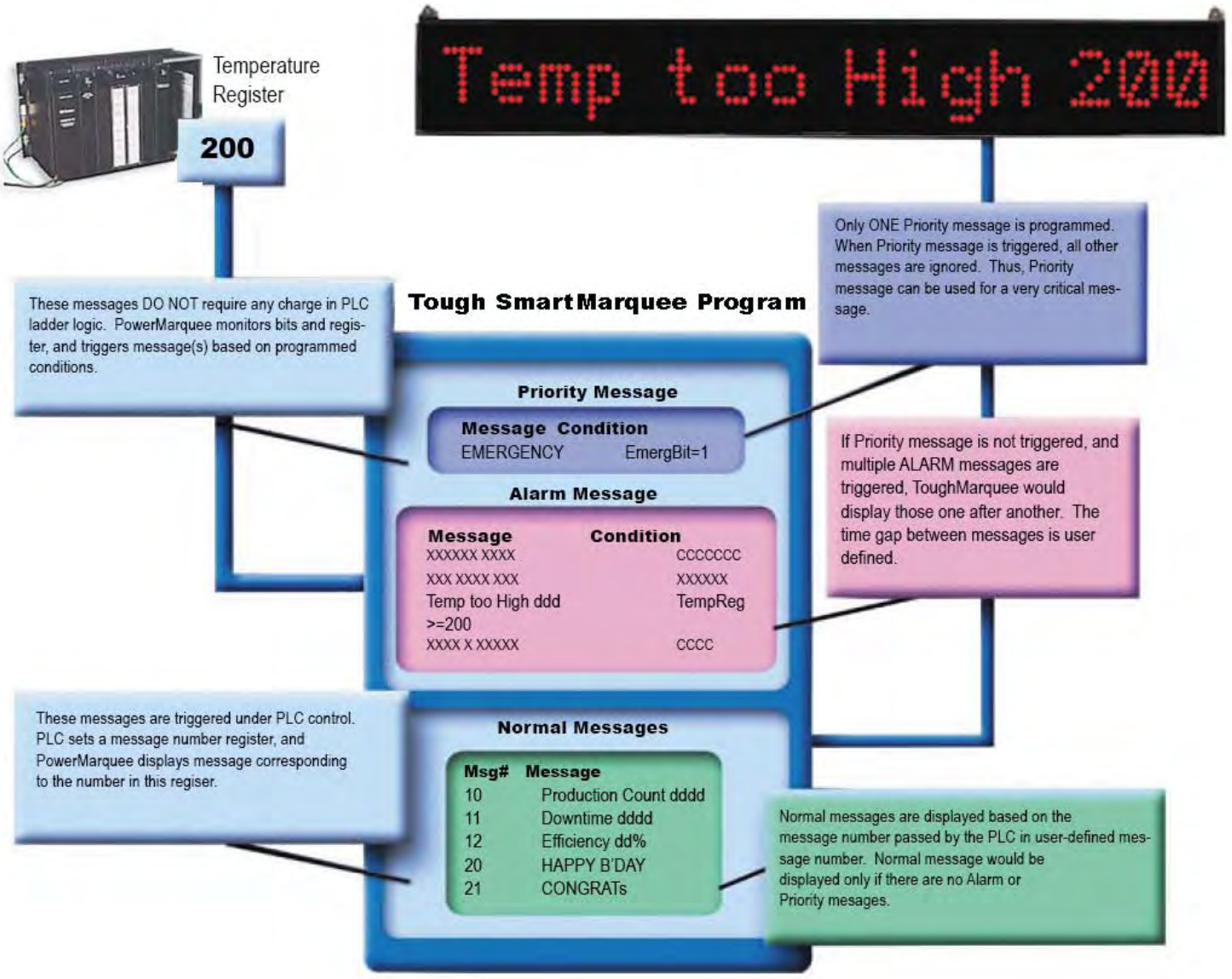
How Does Tough SmartMarquee do it?

Tough SmartMarquee has 3 types of messages, as shown in the figure below.

Tough SmartMarquee allows you to program a (single) Priority Message along with a condition (such as Bit is set, a register is beyond a value or outside a range, etc). Tough SmartMarquee would continuously monitor the programmed variable, and display this message when the condition is met. No other message is displayed when priority message is displayed, so this is used for only critical messages.

The second types of messages are Machine/Process Status & alarm messages. Like the priority message, user needs to program message display conditions. You can program any number of such messages. If multiple messages need to be displayed, Tough SmartMarquee would cycle through these messages.

The normal messages are programmed along with a message number, and which of the programmed message needs be displayed is controlled by the PLC. Only for this type of message, you will have to provide logic in the PLC. The Priority and Status/Alarm messages DO NOT NEED to do anything with the PLC program.



Tough SmartMarquee™

Introducing Internet Connectivity

Remotely Monitor/Control Messages over Internet/Intranet half-way across the world without leaving your desk !!

Tough SmartMarquees have an exclusive unique feature that allows you to view and control the contents of your Tough SmartMarquee including any PLC tags and of course messages over the internet. View and control Marquee messages over the internet from your PC as if your PC was directly connected to the Marquee on the factory floor. **This is also a great tool for management/quality personnel in any plant to monitor production over intranet.**

With this Unique Innovative feature you can get as creative as you want.
You can for example:

1. Convey work schedules
2. Send operator instructions
3. Monitor production data
4. Monitor quality data

Tough SmartMarquee™

Cost Effective Outdoor Marquee Models

SunLight Readable, NEMA 4X Class I DIV II Enclosure -20° C to 60° C Ambient Temperature Specification

These Outdoor Tough SmartMarquees can display messages readable from hundreds of feet away even under bright light conditions. Uticor outdoor Marquees have been applied with a wide variety of outdoor applications in Quarries, Mines, Cement Plants and Steel Mills. The electronics inside the Tough SmartMarquee is designed to operate reliably under extreme temperature of -20° C to 60° C. In addition the LED sign is housed in a durable enclosure that can withstand rain, sleet, snow and sometimes even desert storms.

A Semi leaving the Quarry after loading his truck with the right type and weight of Hard Rock

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Tough SmartMarquee ™

Master/Slave modes of Operation

Marquee Configurations

Master Marquees STORE user-programmed messages. These marquees have PLC interfaces, and INITIATE communications with PLCs to monitor various PLC registers. Based on PLC register values, and programmed messages, Master Marquees display messages. Master Marquees can also drive Slave Marquees.

PLC

Control Network e.g. DH+, Ethernet I/P etc.
Tough SmartMarquee acts as an Intelligent device on one of the network nodes.

Master Tough SmartMarquee

Slave Marquees DO NOT STORE message, and do not initiate communications with other intelligent devices, such as PLCs. These Marquees display characters received on their serial port. The slave marquees are typically driven by another Master marquee, PLC, a message controller or some other intelligent device, such as a PC.

IPC with SCADA Software or a Master PLC sending ASCII strings

Ethernet IP, Modbus TCP/ IP, UT IP, RS485/422/232, DeviceNet or Profibus

Slave Tough SmartMarquees

Message Controllers, like Master Marquees, store messages and communicates with the PLC. Message controllers are used to drive slave marquees. One message controller can drive several slave marquees. UPM-MC message controllers have some additional features described on the page 55.

PLC

Message Controller

Control Network

UPM-MC message controller

Ethernet RS485/ 422/232

Slave Tough SmartMarquee