

TORO

Count on it.

MICRO-MASTER Touch® Series



MICRO-MASTER Touch®
- the newest addition
to the Toro range of
agricultural irrigation
controllers.

MICRO-MASTER Touch® Series

MICRO-MASTER Touch®, the newest addition to the Toro® range of agricultural irrigation controllers, is packed full of new features and enhancements including expandable station counts, support for chemical injection and multiple pump sets and filter banks.

All displayed on a full colour, LCD touch screen, Micro-Master Touch will easily upgrade your existing system and support wireless communication with field based units - meaning no trenching and no wire, saving you time and money.



Features and Benefits

- **Modular design**

Designed with flexibility in mind, the master controller is supplied with one 8 station module as standard and is expandable up to 32 stations. Each master unit is capable of communicating with up to four remote units meaning, with Micro-Master Touch, your irrigation system can have up to 160 stations.

- **Remote units**

Remote units can be placed up to 1.2 km away (wired link) and up to 7 km (radio link) from the master controller. Additional remote units can be added without the need to expand the master controller. Units can be powered by either 240 VAC or 12 VDC via a solar panel.

- **RADIO-MASTER for Touch™**

Up to 19 x 8 station field modules can be added to your irrigation system, each capable of communicating wirelessly back to the Master unit - meaning no trenching and no wire, saving you time and money. Also suitable for areas prone to lightning strikes.

- **Expand your irrigation system**

Easily increase the capabilities of your irrigation system by adding expansion or digital and analogue input modules. All available in configurations of 8.

- **Flexible communication options**

Build an irrigation system that suits you by taking advantage of the wide choice of available communication options. Choose from RS232, R485, USB, Radio, Modem, Ethernet and Wireless communication modules (for use when software becomes available).

- **LCD Touch screen display**

No more buttons or small display screens! The Micro-Master Touch controller has a large LCD touch screen to help you navigate your way around. Includes a stylus for ease of use.

- **USB**

USB port allows for controller firmware upgrades, storing programmes for future use and for controller activity logging.

- **Multiple Pump Sets**

Pump set support for up to eight sets of pumps. Each pump set consists of four pumps with each pump allocated to any station output. Each pump set can be enabled or disabled.

- **Multiple Filter Banks**

Filter bank support for up to eight banks of Filters. Each filter bank consists of eight separate filters with individual filter runtimes. Each filter can be assigned to any station or output.

Specifications and Features

- 8 - 32 stations per unit in increments of 8
- System maximum of 5 units of 32 = 160 total
- 8 station field nodes
- 4 station + 4 digital input field modules
- 4 station + 4 analogue input modules
- Up to 40 simultaneous stations (8 per unit)
- 32 multi station programs (concurrent)
- 160 single station programs
- Manual Watering - spot or walkthrough
- Up to 8 pump sets of 4 pumps
- Up to 8 filter banks of 8 filters
- Injection support for up to 8 chemicals
- 32 Flowmeters + 32 Aggregate
- Up to 168 digital inputs
- Up to 160 analogue inputs
- 1 tipping rain bucket (pulse output)
- Maximum of 32 rules
- Remote unit communication options - RS485, Radio (900 MHz)
- Radio range – up to 3 x 7 km hops
- Firmware upgrades via in-field USB
- Designed and manufactured in Australia

Chemical Injection

Chemical injection support for up to eight chemicals. Chemicals may have their own flow meter and injection can be paused during filter operation.

Sensors

Micro-Master Touch has the ability to have a maximum of 152 sensor inputs via either 8 station digital or 8 station 4-20 mA analogue modules.

Life Support

Each 8 station module is capable of stand-alone user definable operations in the event of front panel failure.

Powerful rules capability

Programmable from the controller, up to four arguments can be set for a rule to trigger events such as program start/stop/hold and non-irrigation events like water transfer and tank filling. Micro-Master Touch has a maximum capacity for 32 rules.

Ordering Information

Model	Description
Master Units	
MMTOUCH-MST8	Micro-Master Touch Master Unit, 8 Station
MMTOUCH-MST16	Micro-Master Touch Master Unit, 16 Station
MMTOUCH-MST24	Micro-Master Touch Master Unit, 24 Station
MMTOUCH-MST32	Micro-Master Touch Master Unit, 32 Station
Remote Units	
MMTOUCH-REM8	Micro-Master Touch Remote Unit, 8 Station
MMTOUCH-REM16	Micro-Master Touch Remote Unit, 16 Station
MMTOUCH-REM24	Micro-Master Touch Remote Unit, 24 Station
MMTOUCH-REM32	Micro-Master Touch Remote Unit, 32 Station
Expansion Modules	
MMTOUCH-STN	Micro-Master Touch 8 Station Expansion Module
MMTOUCH-DIG	Micro-Master Touch 8 Digital Input Expansion Module
MMTOUCH-ANL	Micro-Master Touch 8 Analogue Input Expansion Module
MMTOUCH-485E	Micro-Master Touch RS485 Slave Expansion Module
Communication Modules	
MMTOUCH-485C	Micro-Master Touch RS485 Communication Module
MMTOUCH-USB	Micro-Master Touch USB Communication Module
MMTOUCH-ETH	Micro-Master Touch Ethernet Communication Module
MMTOUCH-232	Micro-Master Touch RS232 Communication Module
MMTOUCH-MDM	Micro-Master Touch Modem Communication Module
MMTOUCH-WIF	Micro-Master Touch WiFi Communication Module
Radio-Master for Touch	
RMT200	Radio-Master for Touch Radio Expansion Module
RMT100	Radio-Master for Touch Central Transceiver
RMT800	Radio-Master for Touch 8 Station Field Module
RMT440A	Radio-Master for Touch 4 Station + 4 Analogue Input Field Module
RMT440D	Radio-Master for Touch 4 Station + 4 Digital Input Field Module
RMT-ANT	Radio-Master for Touch Antenna

Dimensions

- 300 W x 220 H x 130 D

Electrical Specifications

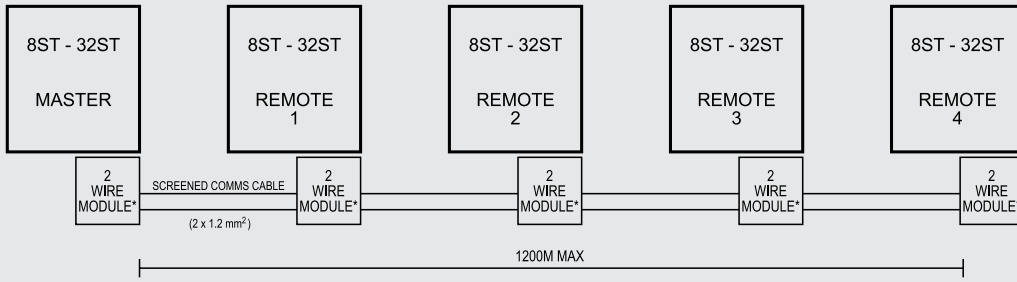
- **Input power:** 240 VAC, 50 HZ, 12 VDC
- **Output power:**
 - Station capacity: 24 VAC at 2.0 Amp max or 12 VDC at 2.0 Amp max
 - Pump start capacity: 24 VAC at 1.0 Amp max or 12 VDC at 1.0 Amp max
 - Total controller capacity: 24 VAC at 2.0 Amp max or 12 VDC at 2.0 Amp max
- **Surge protection:**
 - Mains: Surge protection 2500 Amps surge for 20 microseconds
 - Station outputs: Field surge protection 4500 Amps surge for 20 microseconds
 - Inputs: Surge protection 100 Amps surge for 20 microseconds 50 Hz induced voltage 10 V RMS Max
- **Meets Australian Electrical Safety & EMC standards**

Warranty

- 1 year

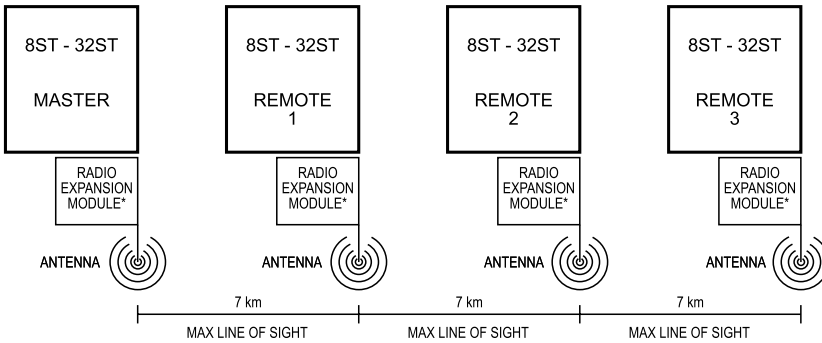
Schematics

WIRED LINK



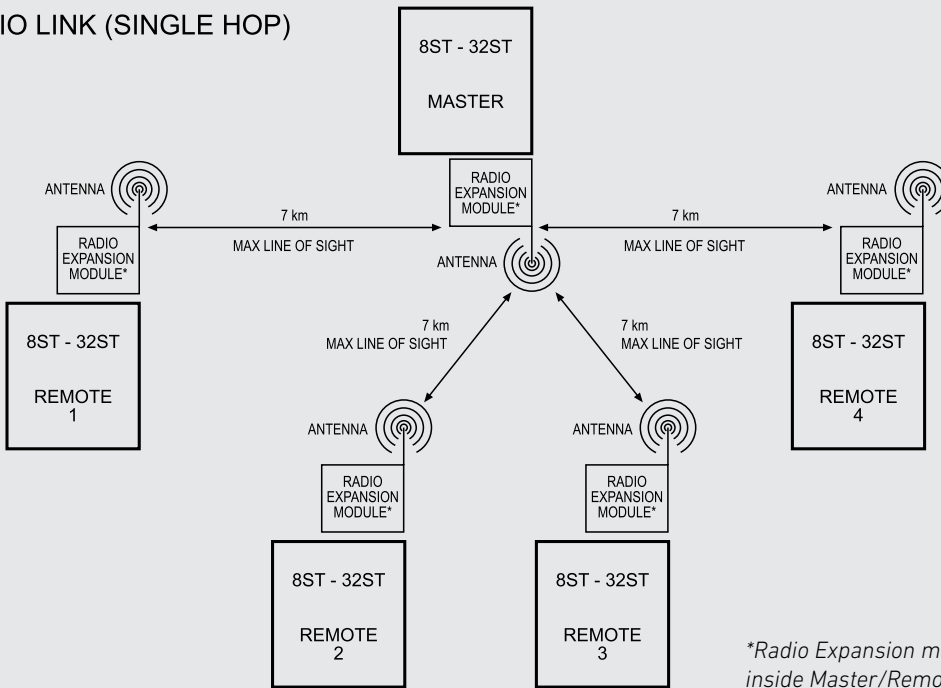
*2 wire module mounts inside Master/Remote

RADIO LINK (MULTIPLE HOP)



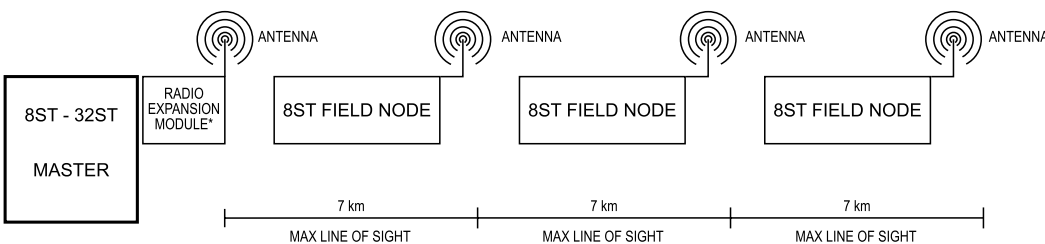
*Radio Expansion module mounts inside Master/Remote

RADIO LINK (SINGLE HOP)



*Radio Expansion module mounts inside Master/Remote

RADIO-MASTER FOR TOUCH



*Radio Expansion module mounts inside Master

- Up to 19 field nodes, each with a max line of sight range of 7 km, can communicate wirelessly back to the master.
- Up to 3 field nodes, each with a max line of sight range of 7 km, can hop sequentially, increasing the overall communication range to 21 km.