Application

The Radio-Master™ VHF Spread Spectrum data transceiver system has been designed specifically for use with the Micro-Master® range of controllers only.

For use in irrigation systems where cable installation cost are high or not appropriate.

Features

- Uses VHF to broadcast data
- No telemetry licence needed
- Transceivers come with their own radio address to avoid interference from nearby sites
- Central PC control or stand-alone controller compatible
- All transceivers fitted with an internal 12 volt 2 amp hour battery
- Radio network continually tests the online integrity of all radios and reports results to central log.

  Parameters include:-
  – Field strength (noise and signal levels)
  – Power supply and standby battery conditions
  – Ambient temperature
  – Latch mode of the solenoid coil*

- Range - up to 5 kms depending on the height of antenna above ground, line of sight and obstructions between transmit and receive sites. Can be increased by up to 10 kms if a transceiver acts as a repeater for another unit. (Note: A signal can only be routed through one repeater ie. only two units in the chain)

- All units fitted with

  – On/Off switch to isolate unit

  – bayonet connection fitting for aerial cable

RM100 Central Transceiver

- For use with the Micro-Master® 4000, 4500, 4500 Plus and 5000
- Connected to the central PC via RS232 to serial port connection. Supplied with 1.5 metres of RS232 cable with connections (RM100 only required if central software is used)
- Transmits to Slave transceiver (RM200)

- Can act as a repeater
- IP55 enclosure
- Supplied with 240 VAC to 12 VDC 0.5 amp plug pack to charge battery
- Requires a RM-105 Stainless steel omni-directional aerial (supplied with 5 m of cable) and a RM-104 aerial mounting kit to mount to pole or wall

Dimensions	
H	195mm
W	150mm
D	80mm

Allow 50 mm clearance under for cable entry

RM200 and RM500 Slave Transceiver

- RM200 for use with the Micro-Master® 4000, 4500 and 4500 Plus
- RM500 for use with the Micro-Master® 5000
- Connected to the Micro-Master® controller via RS485 interface of the controller. Supplied with 1.0 metre of RS485 cable with connections
- Transmits to Node transceiver (RM400)
- Can act as a repeater
- IP55 enclosure
- Up to 5 controllers can be connected to the same RM200 using the RS485 interface. (Only one controller communicating at a time)
- Requires either a RM-101 (240 VAC to 12 VDC 0.5 amp plug pack) or a RM-103, (12 Volt 4 watt solar panel and mounting kit) to charge the battery
- Requires a RM-105 Stainless steel omni-directional aerial (supplied with 5 m of cable) and a RM-104 aerial mounting kit to mount to pole or wall
- Communicates with RM100 (where installed)

Dimensions	
H	195mm
W	150mm
D	80mm

Allow 50 mm clearance under for cable entry

* Baccara 2 wire latch and Bermad S-985, 3 wire latch coils only.

Company policy is one of constant improvement and therefore changes in specifications may be made without notice and without incurring liability.Please refer to www.toro.com.au
Toro Australia Pty Ltd, 53 Howards Road, Beverly, South Australia, 5009. Phone 1300 130 898, fax (08)8243 2488. A.B.N 47 001 310 443

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RM400 and RM800 Node Transceiver

- For use with the Micro-Master® 4000, 4500, 4500 Plus and 5000
- Connected directly to the field valve solenoids
- Receives and transmits from/to the Slave transceivers RM200, RM500
- Can act as a repeater
- IP55 enclosure
- Up to 4 or 8, 12 VDC, 2 wire latching coils can be connected to the same RM400 or RM800
- On/Off buttons for manual operation of valves
- When connected to Bermad, 3 wire, or Bacarra 2 wire 3 way, 12 VDC latching solenoids, the transceiver will sense if the coil has latched and report back to the Micro-Master®
- Requires a RM-103, (12 Volt 4 watt solar panel and mounting kit) to charge the battery
- Requires a RM-105 Stainless steel omni-directional aerial (supplied with 5 m of cable)
- 12 VDC Latching Pump Start Relay designed specifically for the Radio-Master. Connect to one of the terminals of the RM400 or RM800 field node.

Dimensions

H	175mm
W	215mm
D	80mm

Allow 50 mm clearance under for cable entry

- LED displays transmit and receive signal, power on and valve on/off
- The solenoids should be installed within 10 metres of the transceiver unit. Where possible mount the solenoids directly underneath the transceiver on a hydraulic supply bar and run hydraulic tube to the valve
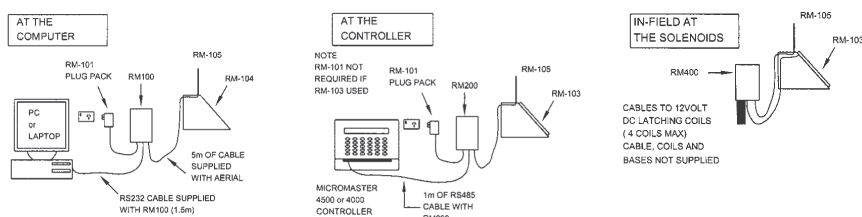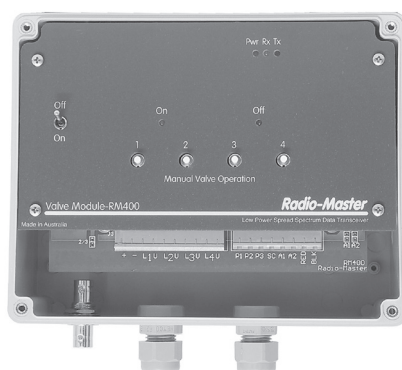
RM-103 Solar panel and Aerial Mounting Kit

The RM-103 consists of a 12 volt DC, 4 watt solar panel with 5 metres of cable, (for connection to the RM200, RM400 or RM800) and a galvanised sheet metal support bracket for mounting the aerial. The aerial and solar panel are mounted on the panel on site.

Ordering Information	
Code	**Description**
RM100	Radio-Master Central Transceiver - RS232 (at PC)
RM200	Radio-Master Field Transceiver - RS485, suit Micro-Master® 4000, Micro-Master® 4500, 4500 Plus
RM400	Radio-Master Node - 4 Station Output, 2 Wire Latch, requires RM-101 or RM-103 to charge battery
RM500	Radio-Master Field Transceiver - RS485 suit Micro-Master® 5000
RM800	Radio-Master Node - 8 Station Output, 2 Wire Latch, requires RM-101 or RM-103 to charge battery
	Note: 1. RM100,RM200 and RM400 requires additional antenna (RM-105) 2. RM100, RM200 and RM400 includes rechargable battery (RM-102) 3. RM100, supplied with Plug Pack (RM-101) 4. RM200 requires an additional power source, i.e. RM-101 or RM-103 5. RM400 requires an additional power source, i.e. RM-103
RM-101	240 Volt - 12 Volt 0.5 Amp Plug Pack
RM-102	2.0 AH Rechargable Lead Acid Standby Battery
RM-103	12 Volt 4 Watt Solar Panel and Aerial Mounting Kit
RM-104	Mounting kit only for Solar panel and aerial
RM-105	Stainless Steel Omni-Directional Antenna - 5 metre Cable
RM-106	RM400 Mounting Kit
RM-107	12 Volt 4 Watt Solar Panel only
RM-110	10 metre Coaxial Antenna Extension Cable
RM-120	20 metre Coaxial Antenna Extension Cable
RM-130	30 metre Coaxial Antenna Extension Cable
RM-401	12 Volt DC latching Pump Start Relay
S-985	Coil and Base, 3 Way, 3 Wire 12-50 VDC Latching