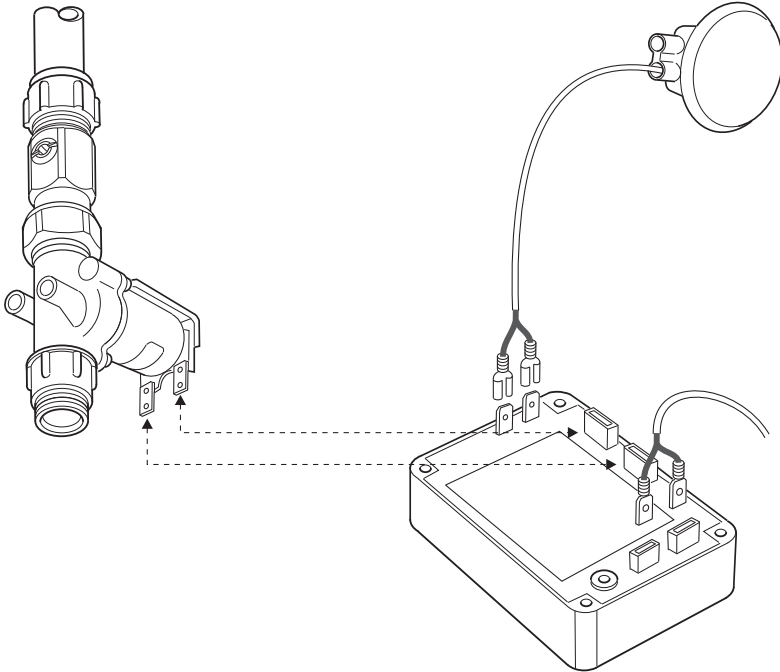# Mono Control Systems

MC120, MC122, MC124, MC125, MC126 and MC129

PRODUCT MANUAL

IMPORTANT

Installer: This manual is the property of the customer and must be retained with the product for maintenance and operational purposes.

TABLE OF CONTENTS

page

INTRODUCTION

The Rada Mono Control Systems range of electronic products combine to produce a controlled washroom environment offering a high degree of energy and water conservation.

There are several Mono Control Systems suitable for use in a washroom environment:

- The Mono Control System operates at 12 V AC via a transformer with a 230V supply with a range of sensors and electronic control modules that interface to suit showering, handwashing and urinal flushing applications.
- A solenoid valve linked to the electronic control module controls the water flow.

The appropriate electronic control module, sensor and solenoid valve are all available in a convenient 'Operating System' package.

DESCRIPTION

Sensor Range

There are two generic types of No-touch sensor:

- Active infra-red sensors where a transmitted infra-red beam of light is reflected back to the sensor by the proximity of a hand.
- Passive infra-red sensors where the sensor receives infra-red heat from a person in the detection area.

Rada Pulse 120/122 and 129

The sensor encloses an active sensor and is designed to be installed within the shower, urinal, W.C or washbasin area.

All electrical connections are totally sealed and the systems operate at a very safe low voltage.

The sensor can be fixed to the wall using two fixing screws (supplied).

A mounting plate is an **optional accessory**, intended to be used when wall mounting the Rada Pulse 120/122/129 sensor onto difficult walls or surfaces, or when extra security screws need to be used.

Rada Pulse Ceiling Sensor 124 Washbasin, 125 Single Urinal, 126 Group Urinal

The ceiling sensor is a passive sensor that can be used to a washbasin or urinal area.

All electrical connections within the sensor are totally sealed, and the systems operate at a very safe low voltage.

Electronic Control Modules (ECM)

There is a range of ECM's designed to control the Mono Control Operating Systems. The purpose of the ECM is to:

- To operate the remote mounted sensor.
- To operate the solenoid valve.
- To allow timing and flow control adjustment to the operating systems to be programmed in.
- To allow a visual indication as to the timing in use.

Solenoid Valve

The Rada SV1015 1/2" solenoid valve for pipework mounting is used with each Mono Control Operating System.

Transformers (supplied seperately)

Specification:

Model variants	302 supplies 1 Mono
	308 supplies 8 Mono's
	316 supplies 16 Mono's

MONO CONTROL SYSTEMS

There are three elements to each Mono Control System :

1. Sensor (with which the user activates the timed flow of water)
2. Electronic Control Module (time setting functions)
3. Solenoid valve (water flow control).

Single Urinal Application

MC122/125 Operating System

The MC122/125 Operating System comprises :

OR

- a wall mounted Rada Pulse122 Infra-red sensor unit or a Rada Pulse 125 ceiling mounted Infra-red sensor unit.

- MC122/125 Electronic Control Module.

- a 1/2" Solenoid Valve with 15 mm compression fittings and ball valve.
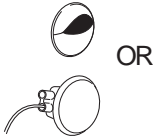
The MC122/125 Operating System is an advanced washroom control system which combines the established water and energy saving advantages of timed flow controls with hygienic 'no-touch' activation. The MC122/125 Operating System is designed specifically to meet the requirements of economic and hygienic urinal flushing.

The infra-red sensor and solenoid valve connect to the electronic control module, allowing flow timing to be programmed for the outlet. The flow timing can be programmed between 3 and 10 seconds (pre-flush is also available).

Group Urinal Applications

MC 126 Operating System

The MC126 Operating System comprises :

- a ceiling mounted Rada Pulse 126 Infra-red Sensor Unit.

- a MC126 Electronic Control Module.

- a 1/2" Solenoid Valve with 15 mm compression fittings and ball valve.

The MC126 Operating System is an advanced washroom control system which combines the established water and energy saving advantages of timed flow controls with hygienic 'no-touch' activation. The MC126 Operating System is designed specifically to meet the requirements of economic and hygienic urinal flushing.

The infra-red sensor and solenoid valve connect to the electronic control module, allowing flow timing to be programmed for the outlets. The flow timing can be programmed between 3 and 15 seconds. Delays of between 30 seconds and 3 minutes are also programmable.

Single Washbasin Application

MC124 Operating System

The MC124 Operating System comprises :

- a ceiling mounted Rada Pulse 124 Infra-red sensor unit.

- a MC124 Electronic Control Module.

- a 1/2" Solenoid Valve with 15 mm compression fittings and ball valve

The MC124 Operating System is an advanced washroom control system which combines the established water and energy saving advantages of timed flow controls with hygienic 'no-touch' activation. The MC124 Operating System is designed specifically to meet the requirements of economic and hygienic washbasin use.
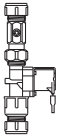
The infra-red sensor and solenoid valve connect to the electronic control module, allowing flow timing to be programmed for the outlets. The flow timing can be programmed between 1 and 16 seconds.

Showering and Washbasin Applications

MC 120/129 Operating System

The MC120/129 Operating System comprises :

- a wall mounted Rada Pulse120 Infra-red sensor unit or a Rada Pulse 129 wall mounted Infra-red sensor unit.

- a MC120/129 Electronic Control Module

- 1/2" Solenoid Valve with 15 mm compression fittings and ball valve.

The MC120/129 Operating System is an advanced washroom control system which combines the established water and energy saving advantages of timed flow controls with hygienic 'no-touch' activation. The MC120/129 Operating System is designed specifically to meet the requirements of economic and hygienic shower and washbasin use.
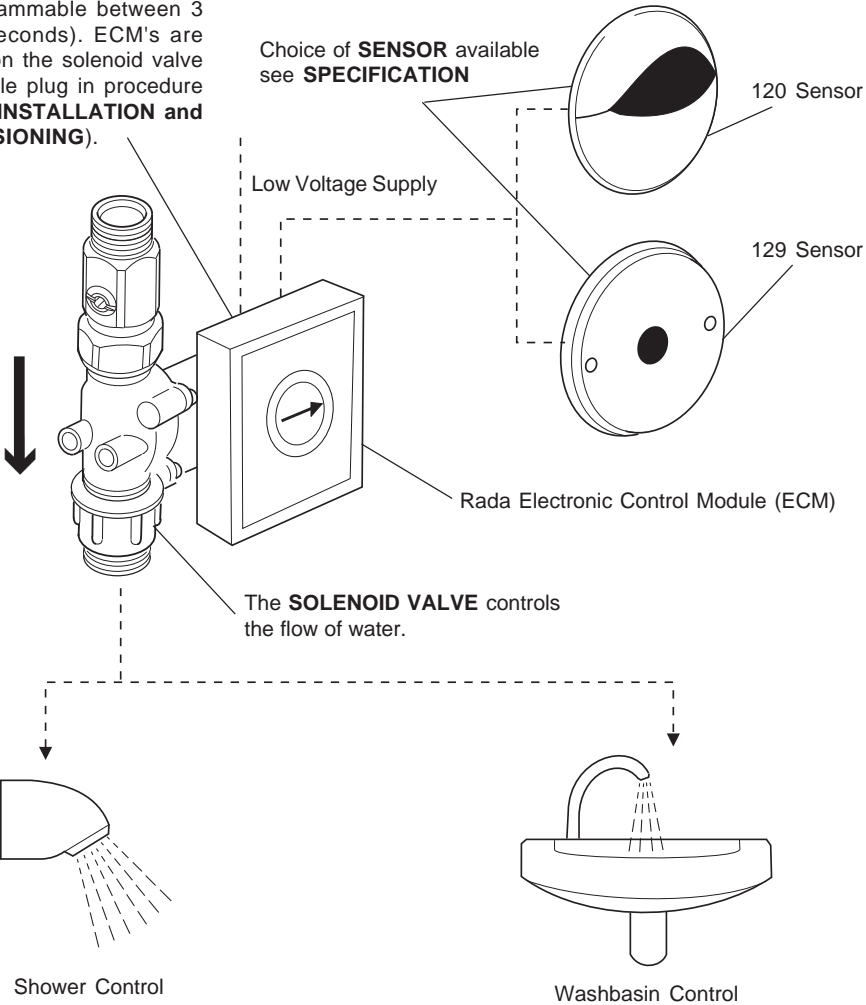
The infra-red sensor and solenoid valve connect to the electronic control module, allowing flow timing to be programmed for the outlets. The flow timing can be programmed between 3 and 75 seconds.

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SCHEMATIC DIAGRAMS

MC120/129 Operating Systems

Water flows for the length of time set on the ECM, after which the flow of water is automatically shut off (programmable between 3 and 75 seconds). ECM's are installed on the solenoid valve by a simple plug in procedure (Refer to **INSTALLATION and COMMISSIONING**).

The **SENSOR** detects the presence of the user.
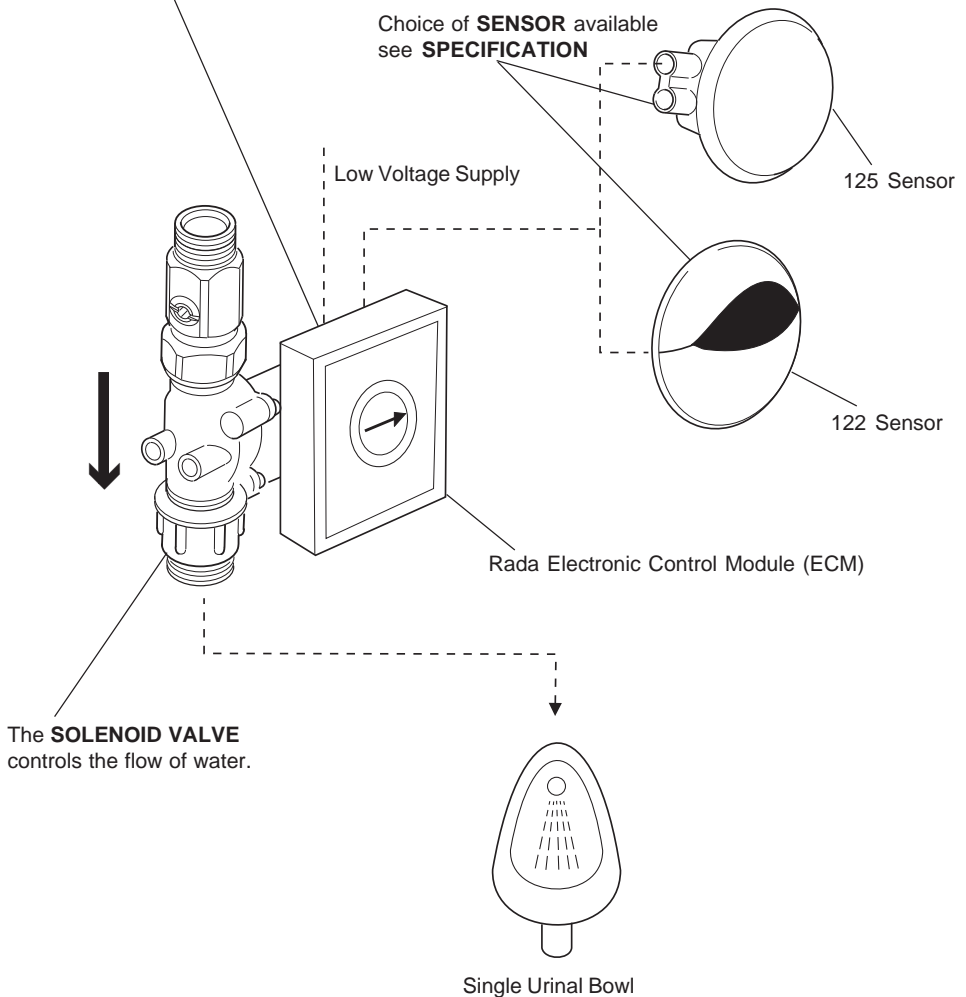
Choice of **SENSOR** available see **SPECIFICATION**

120 Sensor

Low Voltage Supply

129 Sensor

Rada Electronic Control Module (ECM)

The **SOLENOID VALVE** controls the flow of water.

Shower Control

Washbasin Control

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MC122/125 Operating System

Activation of the sensor causes the **ECM** to initiate **the pre-determined flush cycle (programmable between 3 and 10 seconds). Pre-flush is also avaiable (Refer to COMMISSIONING).**

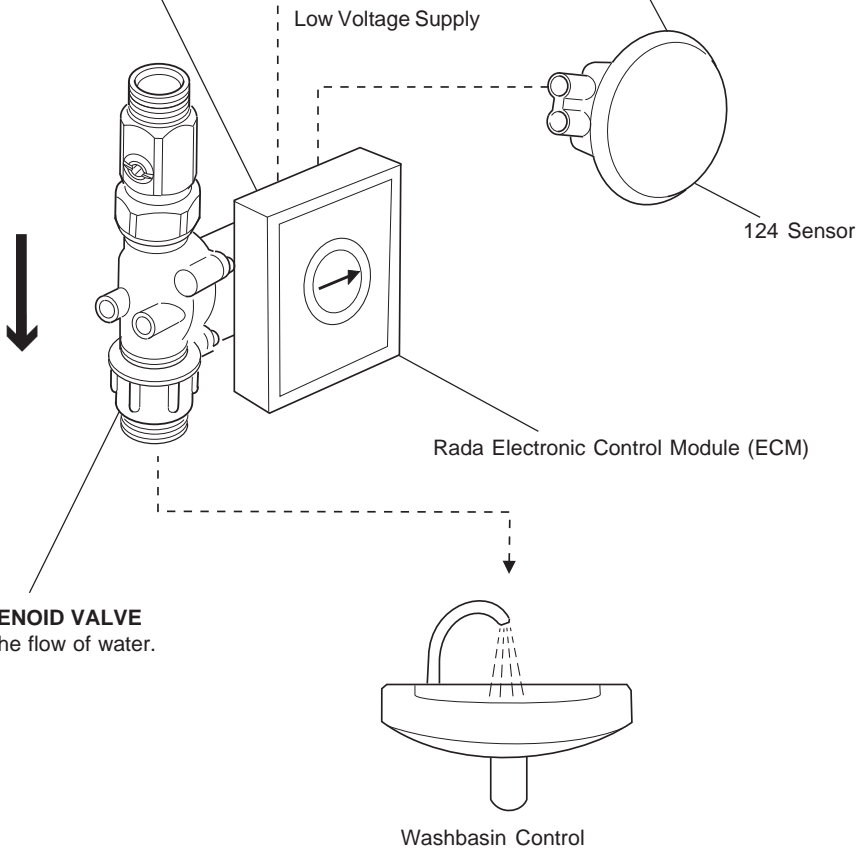The **SENSOR** detects the presence of the user.

Choice of **SENSOR** available see **SPECIFICATION**

Low Voltage Supply

125 Sensor

122 Sensor

Rada Electronic Control Module (ECM)

The **SOLENOID VALVE** controls the flow of water.

Single Urinal Bowl

MC124 Operating System

Activation of the sensor instructs the **ECM** to open the solenoid valve. Once activated, the water flow continues for a pre-determined period between 1 and 16 Seconds (Refer to COMMISSIONING).
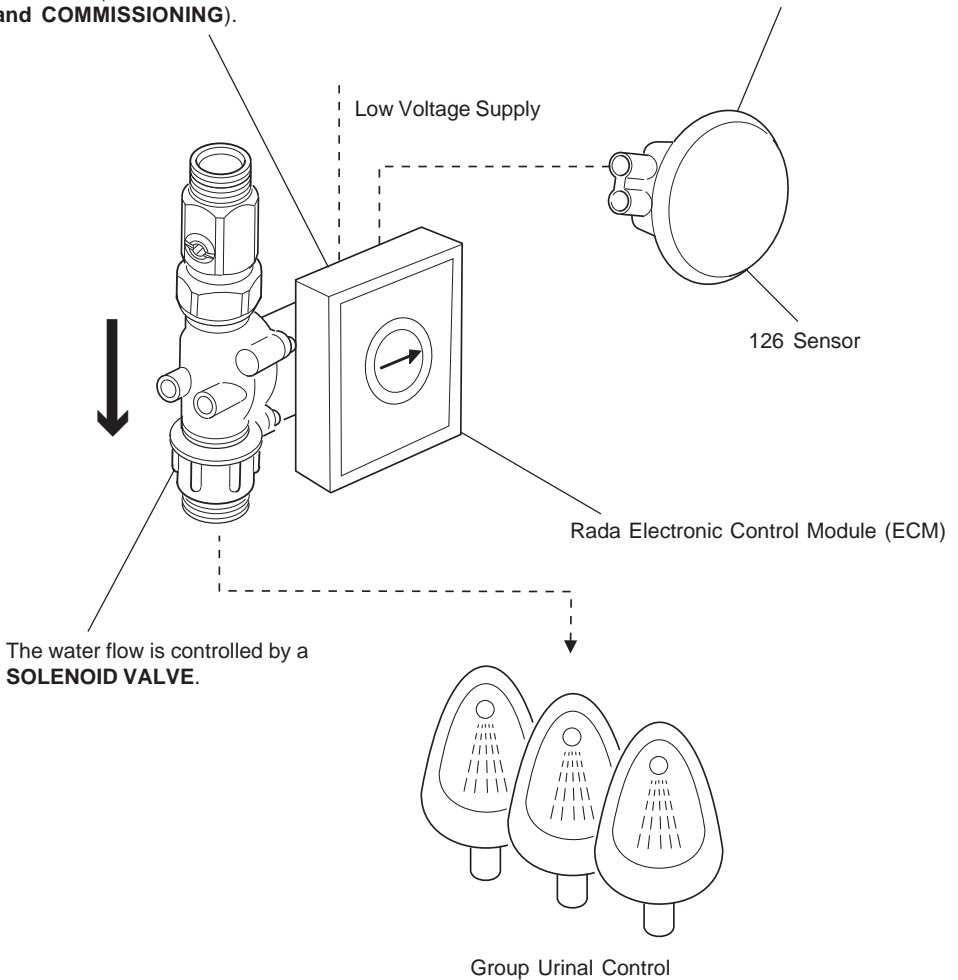
The **SENSOR** detects the presence of the user.

Low Voltage Supply

124 Sensor

Rada Electronic Control Module (ECM)

The **SOLENOID VALVE** controls the flow of water.

Washbasin Control

MC126 Operating System

Water flows for the length of time set on the ECM, after which the flow of water is automatically shut off (programmable between 3 and 15 seconds). Delays of between 30 seconds and 3 minutes are programmable. ECM's are installed on the solenoid valve by a simple plug in procedure (Refer to **INSTALLATION and COMMISSIONING**).

User starts the flow of water by activating the **SENSOR**.

Low Voltage Supply

126 Sensor

Rada Electronic Control Module (ECM)

The water flow is controlled by a **SOLENOID VALVE**.

Group Urinal Control

SPECIFICATION

Rada Electronic Control Module

Material - Plastic control box to IP65.

Voltage - 12V AC via Rada 302, 308 or 316 transformer (not supplied).

Rating - 10 VA.

Ambient Temperature range - 5 to 40 °C.

Maximum humidity - 80% at 25 °C.

1/4" male/female spade connectors for push fit connection of 12 V AC supply, sensors and solenoid valve.

Rada Pulse 120/122 Sensor

Material - Durable Plastic cover, Finish - Chrome plated.

3 m of 2 core sheathed cable fitted, with connections sealed into the sensor.

Operating voltage - 12V A.C. via the 2 core cable.

Fixing holes - Drilled for 2 x 6 mm dome headed screws.

Protection - IP65.

Temperature range - 4 to 55 °C.

Activation distance -120 sensor 0 to 50 mm.

　　　　　　　　-122 sensor 300 to 700 mm.

The distance is dependent on the reflectivity of the detected object.

The Rada Pulse 120/122 complies with all relevant directives for CE marking.

Rada Pulse 129 Sensor

Rada Pulse 129 Sensor (Part No. 093 41).

Material - Metal Alloy. Finish - Chrome plated.

Rear face fitted with close cell foam seal.

Fitted 2.0 m of 2 core sheathed cable, with connections sealed into the sensor.

Operating voltage - 12V A.C. via the 2 core cable.

Fixing holes - Drilled for 2 x 6 mm counter sunk screws.

Temperature range - 4 to 55 °C.

Protection - IP65.

Activation distance - 12 mm to 50 mm depending on the reflectivity of the detected object.

Rada Mounting Plate

Rada mounting plate (Part No. 915 06).

Material - Brass (MS58). Finish - Chrome plated.

Fixing holes - Drilled for fixing by 2 x 6 mm screws to wall/panel (Screws not supplied), and drilled for 2 x 4 mm screws to secure to a junction box, if required.

Supplied with 2 x screws M5 x 12 mm (stainless steel) with 3 mm hexagon slot and a 3 mm A/F hexagon wrench.

Rada Pulse Ceiling Mounted Passive Infra-red Sensor

Material - Base and cover ABS.

Supply voltage - 12V AC.

Maximum humidity - 80% at 30 $^{\circ}$C.

Operating ambient temperature range - 0 to 35 °C.

Cable supplied - 2.5 m of 2 core insulated cable.

Cable requirements - 0.22 mm (minimum cross sectional area) up to 100 m.

Rada SV1015 Universal Solenoid Valve

Supply Voltage:	12V ± 10%, 50/60 Hz rated at 4.5VA.
Electrical Connections:	1/4" spade terminals, supplied with two crimp connectors.
Body Material:	Fibreglass polyamide.
Membrane Material:	Nitrile (black).
Pressure Range:	20 - 1000 kPa (0.2 - 10 bar).
Connections:	Outlet 15 mm compression connectors.
	Inlet 1/2" BSP ball valve union connections (with flat-faced inserts).
	Inlet isolating valve for servicing

Typical cable requirements (minimum cross-sectional area/length):

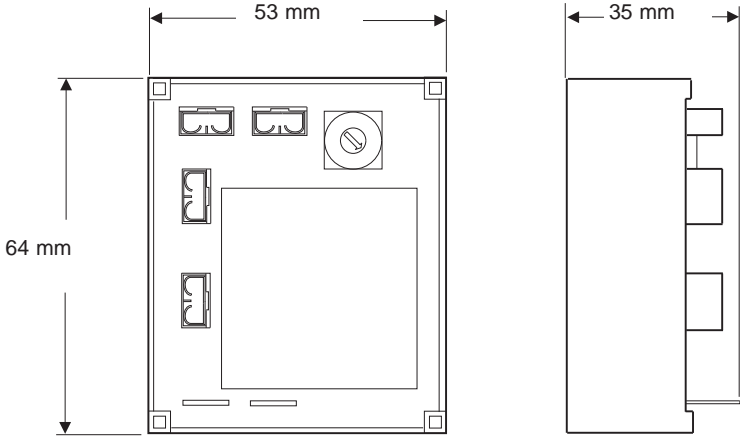   0.50 mm - up to 27 m
      0.75 mm - up to 40 m
      1.00 mm - up to 53 m

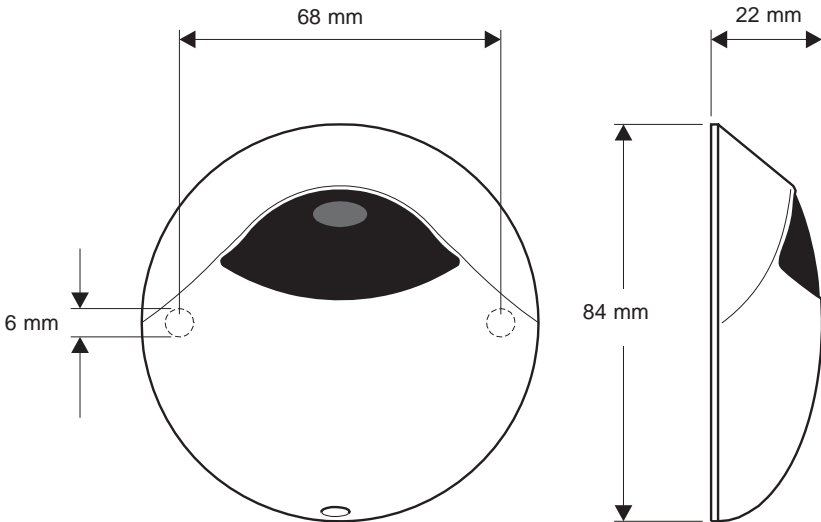# Transformers 302, 308, 316 (Supplied seperately)

Model Variants:	302 supplies 1 Mono
	308 supplies 8 Mono's
	316 supplies 16 Mono's

DIMENSIONS

Rada Electronic Control Module

53 mm

35 mm

64 mm

Rada Pulse 120/122 Sensor

68 mm

22 mm

6 mm

84 mm

Rada Pulse 129 Sensor

12 mm

68 mm

84 mm
Diameter

6 mm
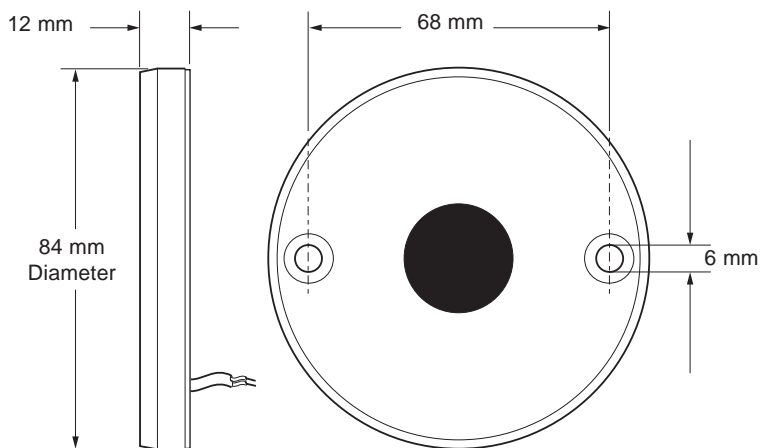
Rada Pulse 129 Sensor
Figure 1

5 mm

52 mm
Diameter

84 mm
Diameter
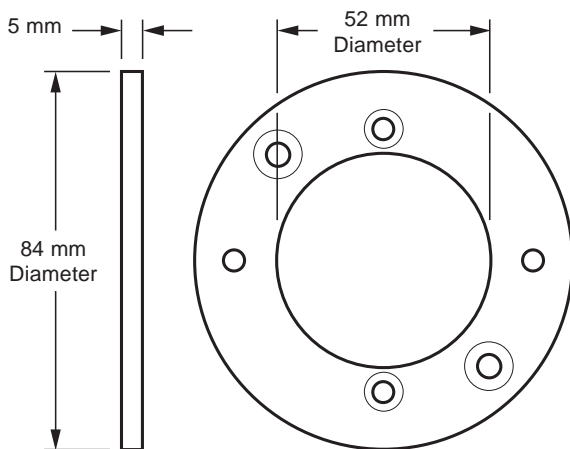
Rada Mounting Plate
Figure 2

Rada Pulse Ceiling Sensor

16 mm

9.5 mm to 25 mm

55 mm

15 mm

78 mm dia

128 mm dia

Rada SV1015 Universal Solenoid Valve

46 mm

127 mm

Flow Direction
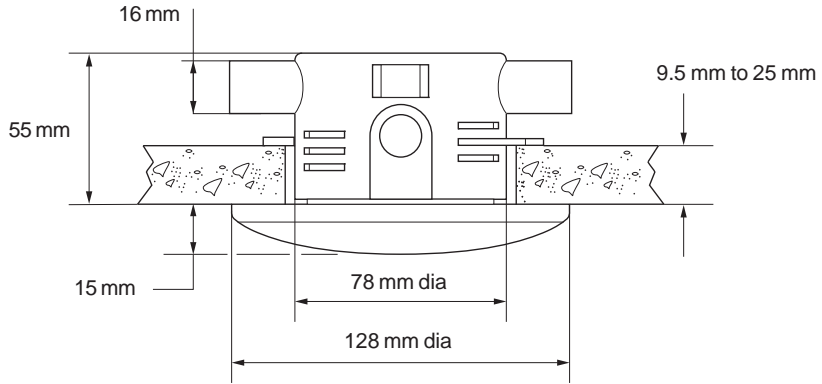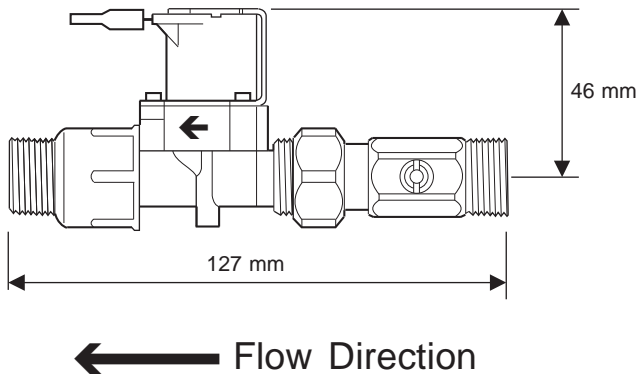
INSTALLATION

General

The solenoid valve can be installed directly into the water supply. The electronic control module is designed to clip onto the solenoid valve (refer to Figure 1).

To set the Electonic Control Module flow and timing cycles, refer to **COMMISSIONING**.

Make sure that all the pipework connections are made and tested for leaks, and all electrical connections are made before applying power.

It is essential that the supply pipework is throughly flushed through before the solenoid is installed and operated.

This product is designed for use with clean, filtered cold water supplies.

The solenoid valve and filters should be accessible for servicing.

Before commencing, ensure that the installation conditions comply with the information given in the **SPECIFICATION** section.

Care must be taken during installation to prevent any risk of injury or damage.

Electrical

All electrical connections should be in accordance with current authority regulations and undertaken by a competent person.
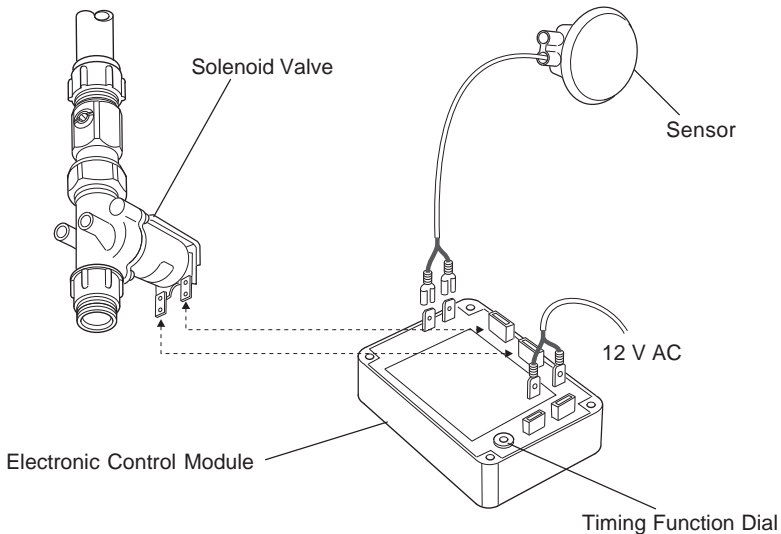

Solenoid Valve

Sensor

12 V AC

Electronic Control Module

Timing Function Dial

Figure 1

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Installation of the SV1015 Universal Solenoid Valve

1. Connect the pipework to the inlet/outlet fittings. For 15 mm compression connections use the compression nuts and olives supplied. For 1/2" BSP union connections fit the flat-faced inserts to the inlet/outlet fittings. **Make sure that the water flow follows the directional arrow indicated on the valve (refer to Figure 2)**.

2. To connect to the pipework offer up the pipes to the inlet/outlet of the valve and hand tighten the union nuts. Hold the adaptor when tightening the union nuts so that you do not twist or damage the valve.

3. Allow sufficient space for the attachment of the electronic control module.
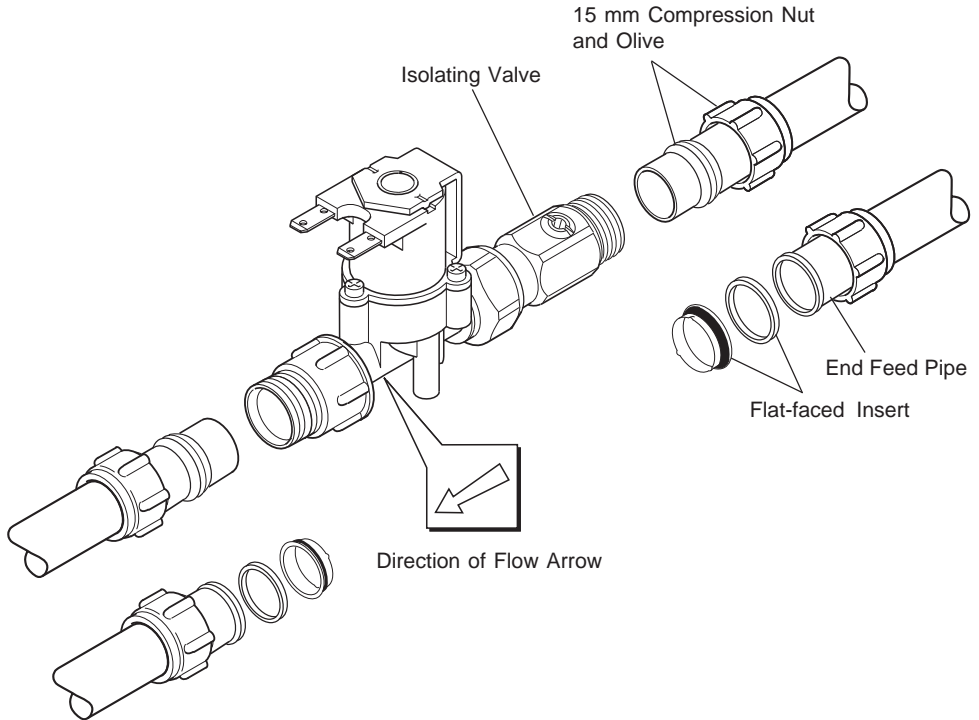
15 mm Compression Nut and Olive

Isolating Valve

End Feed Pipe

Flat-faced Insert

Direction of Flow Arrow

Figure 2

Installation of the Rada Pulse 120/122 Sensors

1. Cut or drill the wall surface to run the 2 core cable to the Rada Pulse electronic control module. If necessary, chase out wall to fit a junction box.

Note! Make sure that the hole in the wall surface is positioned correctly and large enough so that you do not bend the cable.

Note! If the 2 core cable requires lengthening, use watertight 3m connectors.

Note! When installing the sensor in an existing pre-tiled area, with no duct space in which to run cables, a groove can be cut between tiles using a disc cutter. Set the cable in the groove and cover with silicone sealant. Otherwise, concealment of the cable in miniature trunking is recommended.

2. Remove the grub screw and remove the cover from the sensor.

3. Mark, drill and plug for two securing screws (supplied). Alternative fixings (not supplied) may be necessary for some wall structures.

Make sure the holes are lined **horizontally**, and the fixing is preferably in the centre of a flat tile (Refer to **Figure 3**). If the sensor bridges a groove between two tiles, we recommend this gap be filled with silicone sealant.

4. Secure the sensor to the wall with the supplied fixing screws.

5. Make connection between 2 core cable and the electronic control module. Refer to the electronic control module for wiring details.

6. Fit the cover. Make sure that it locates correctly over the top lip of the sensor.

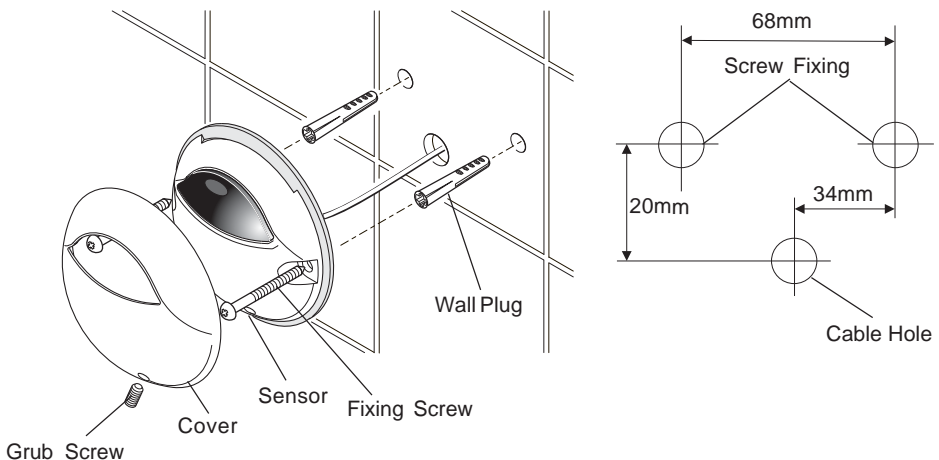**7.** Fit the grub screw to secure the cover in position.

Figure 3

Installation of the Rada Pulse 129 Sensor

1. Cut or drill the wall surface to run the 2 core cable to the Rada Pulse electronic control module. If necessary, chase out wall to fit a junction box. If the sensor is to be fitted on top of a junction box, the Rada mounting plate must be used. Follow instructions for the installation of mounting plate.

Note! Make sure that the hole in the wall surface is large enough so that you do not bend the cable.

Note! If the 2 core cable requires lengthening, use watertight 3m connectors.

Note! When installing the sensor in an existing pre-tiled area, with no duct space in which to run cables, a groove can be cut between tiles using a disc cutter. Set the cable in the groove and cover with silicone sealant. Otherwise, concealment of the cable in miniature trunking is recommended.

2. Mark, drill and plug for two securing screws.

Note! The environment and site conditions in which the product is installed will determine the type of screw used.

Make sure the holes are lined **horizontally**, and the fixing is preferably in the centre of a flat tile (Refer to **Figure 4**). If the sensor bridges a groove between two tiles, we recommend this gap be filled with silicone sealant.

3. Secure the sensor to the wall, ensuring the foam seal on the rear face is in place. To resist corrosion, the use of chrome plated or stainless steel countersunk screws is recommended.

4. Make connection between 2 core cable and Rada Pulse electronic control module (Refer to Figure 1 for wiring details).
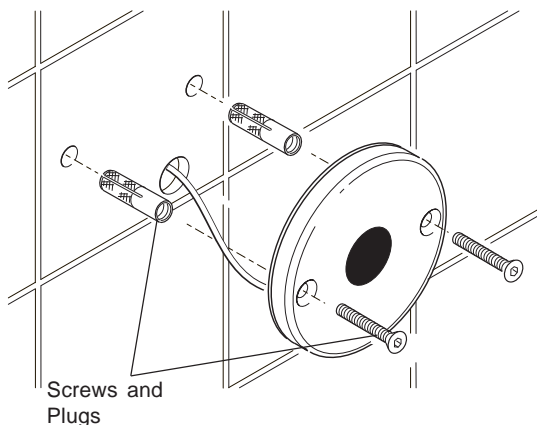

Screws and Plugs

Figure 4

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Installation of the Rada Mounting Plate

1. Select which set of fixing holes you intend to use (Refer to **Figure 5**).

(i) 6 mm holes are intended for wall/panel fixing screws. Use plugs to suit the wall composition

(ii) 4 mm holes are intended for screws to fix the Mounting Plate directly to an electrical junction box.

Note! The environment in which the product is installed will determine the type of screw used. We recommend fixing with brass or stainless steel screws.

The M5 holes are for receiving the screws securing the sensor to the mounting plate.

Important: When fitting an electrical junction box, ensure the junction box cover fixing holes are in **vertical** position (Refer to **Figure 6**). When preparing the finished wall surface (e.g. tiling), allow sufficient clearance to facilitate alignment of the mounting plate fixing screws into the cover fixing holes of the junction box, leaving space for the cable to be inserted through the centre of the mounting plate.

When fixing the mounting plate it is essential that the 4 mm diameter fixing holes are vertically aligned. This is to ensure that when the sensor is offered up, the wording is seen horizontally, and the touch area is correctly aligned.
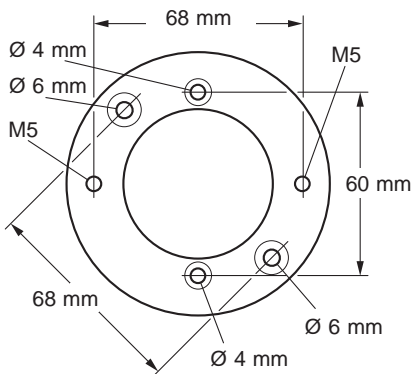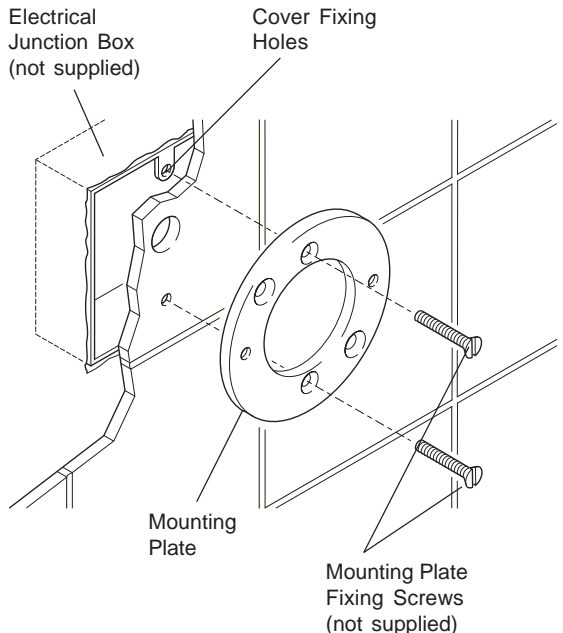

Figure 5   **Figure 6**

2. With the mounting plate secure, offer up the Rada 129 Sensor, and ensure the cable from the sensor runs through the centre hole (refer to Figure 7).
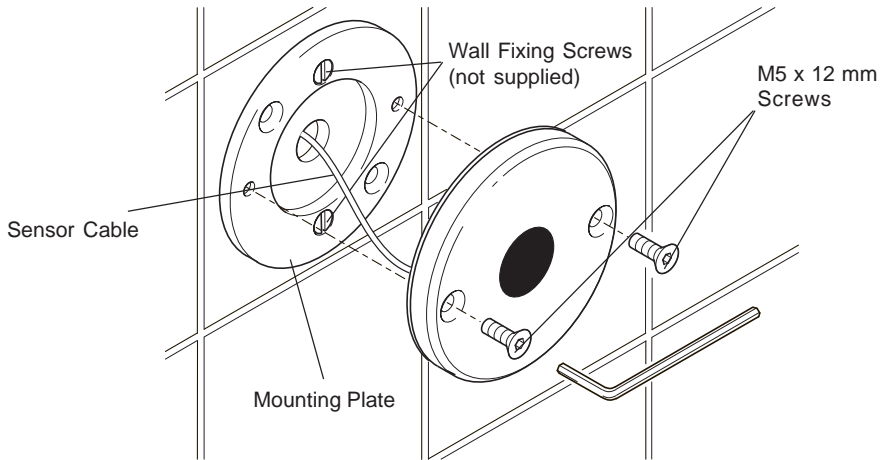

**Figure 7**

Installation General

1. The distance from the sensor to the front edge of the washbasin, or urinal must be minimum **0.5 m,** maximum **2.5 m**.

2. The sensor should be placed at least **0.5 metres** away from any heat source.

3. **Steam or condensation can effect the sensitivity of the sensor, and may damage the electronics.**

4. The sensor must be positioned so that its 'view' of the washbasin, or urinal is unobstructed:- soap dishes, towel racks etc. should be placed out of the sensor detection path.

# Installation of the Rada Pulse Ceiling Sensor

1. The sensor should be fitted in a dry position, allowing access for adjustment or maintenance.

2. Mark the selected position for the sensor, and cut a circular hole of 78 mm diameter. Note depth of mounting surface, and adjust base unit depth tabs to nearest setting below actual depth (minimum setting 9.5 mm, maximum 25 mm). Install the cable from the Rada Pulse Control Box via chosen route, extending if necessary. If required, cabling may be housed within conduit piping (the base unit accepts nominal 16 mm ext). Feed cable through base unit. Pass base unit through mounting hole, and place in position as shown in main illustration, fixing to conduit as necessary.

3. Connect the two-core cable to the connector block (**A**) on the Sensor internal circuit board (**B)** (refer to Figure 8). Wiring polarity is not important.

4. Align and offer up the Sensor unit to the base unit (see illustration), and retain with bolts supplied (but do not tighten these yet).

5. The sensor (**C**) is retained on a swivel bracket, which enables the sensor to be directed toward the target area.
Rotate the Sensor unit until the sensor is directed at, and aligned with, the required target area. Tighten bolts to secure sensor unit to base unit. Align tabs on cover (**E**) with slots around base unit, and rotate clockwise to secure.

6. Connect to the Rada Pulse Control Box. Refer to the control box product manual for connection details.

Sensor Detection Area Diagrams

Sensor detection area
for single applications
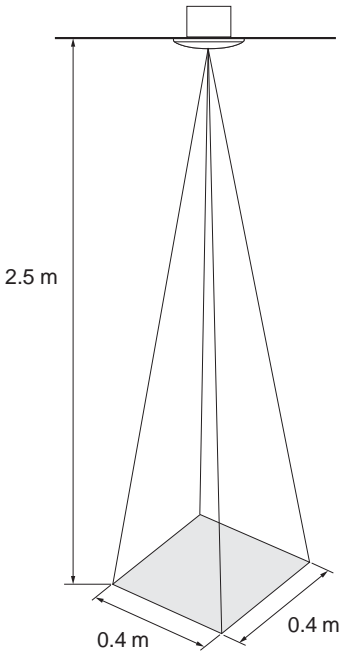
Sensor detection area
for group applications

2.5 m

0.4 m

0.4 m

2.5 m

3.0 m

0.4 m

250 cm Maximum
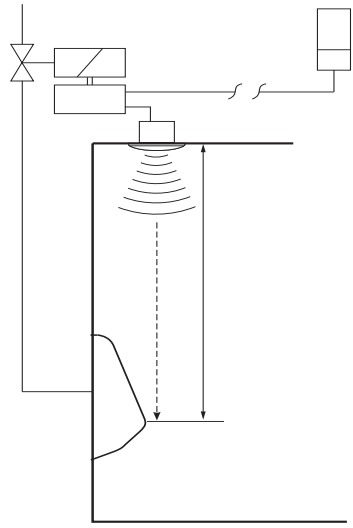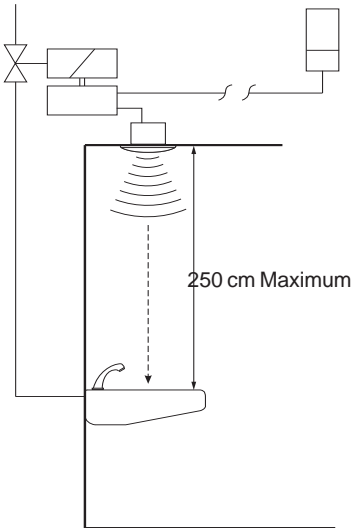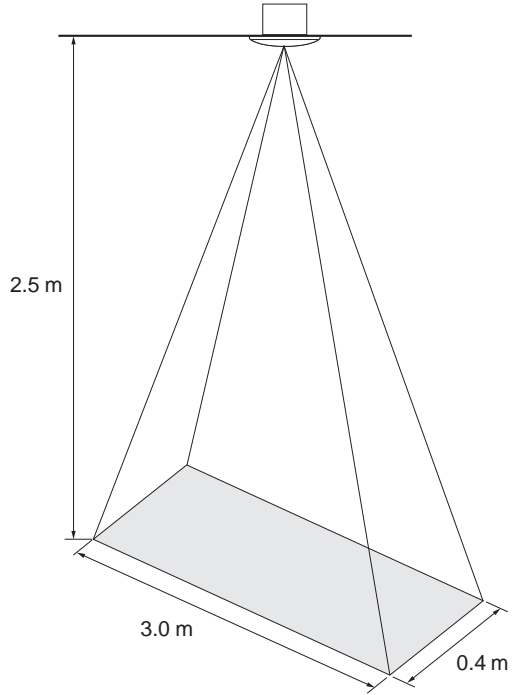
Rada Pulse Ceiling Sensor Alignment/SensitivityAdjustment

1. Grip the cover and rotate anticlockwise, and lower cover away from Sensor unit.

2. The sensor alignment is adjusted by gently swivelling the sensor on its mounting bracket (refer to Figure 8). The delay/flush cycle should be activated by the presence of a user within the urinal area.
Note! There is a delay between sensor detection and flush cycle. You may wish to reset the delay to minimum whilst directing and testing the sensor.

3. The sensitivity is adjustable via a two position (H=high / L=low) switch (**D**, see illustration) on the Sensor internal circuit board, which will need to be separated from the base unit. The unit is supplied with this set at "H" (high). Slide the switch to the "L" position, if required.

4. Refit the cover, ensuring that the sensor window is correctly aligned toward the urinal area.
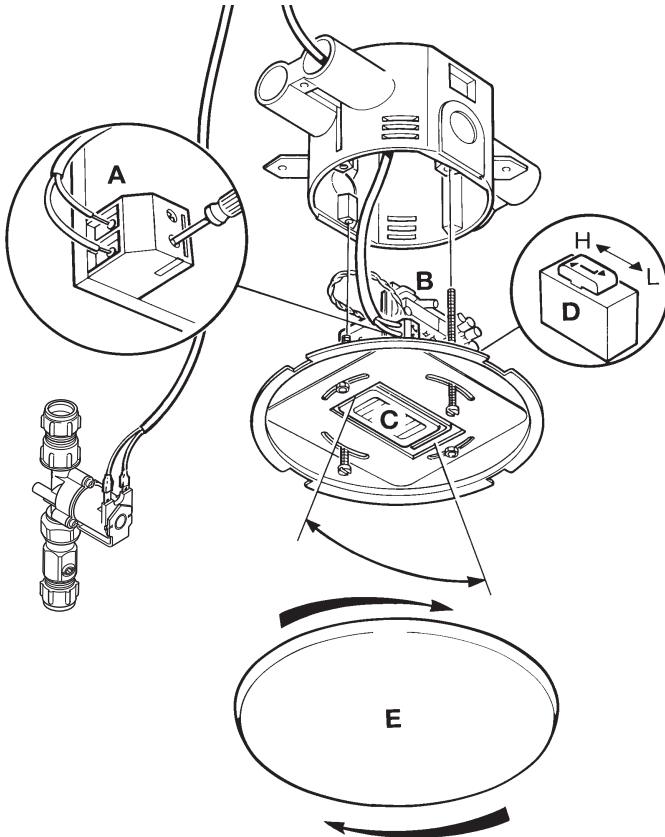
Figure 8

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COMMISSIONING

Wash Basins and Showers

Switch on the power to the Electronic Control Module. Wait a minimum of **ten** seconds.

- Check that flow is initiated only when hands or persons move into the desired detection area.
- Check that flow is not initiated by sources outside the desired detection area (e.g. passers-by).
- With the delay timing set to a minimum, activate flow and then move out of the detection area. Check that flow ceases after the desired overrun period.

The target sensing area should be the front central area of the wash basin or shower.

Urinals

Switch on power to Electronic Control Module. Wait a minimum of **ten** seconds.

- Check that delay/flush cycle is initiated only when a user moves into the desired detection area.
- Check that cycle is not initiated by sources outside the desired detection area (e.g. passers-by).
- (With delay-timing set to minimum) Activate cycle and then move out of the detection area. Check that flush-timing allows cistern-fill until syphonic valve lifts and empties the cistern, and that cycle does not repeat.

The target detection area should cover the immediate front area of each urinal in the group.

Setting the Electronic Control Module

MC122/125 (Refer to Figure 9)

The Rada MC122/125 is an operating system for timed flow control of a urinal area.

To alter the timing of the electronic control module, adjust the timing function dial as required (refer to Table 1) using a small slot-end screwdriver.

Figure 9

Position	Flush Time (Seconds)	Pre Flush
1	3	No
2	4	No
3	5	No
4	6	No
5	7	No
6	8	No
7	9	No
8	10	No
9	3	Yes
A	4	Yes
B	5	Yes
C	6	Yes
D	7	Yes
E	8	Yes
F	9	Yes
0	10	Yes

Table 1

MC120/129 (Refer to Figure 10)

The Rada MC120/129 is an operating system for timed flow control of a shower or washbasin area.

To alter the timing of the electronic control module, adjust the timing function dial as required (refer to Table 2) using a small slot-end screwdriver.
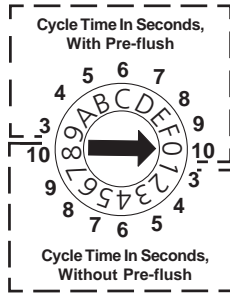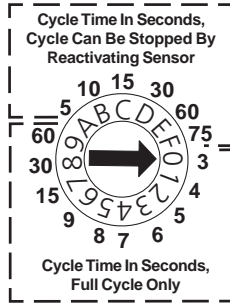

Figure 10

Position	Cycle Time (Seconds)	Operation Control
0	3	Fixed
1	4	Fixed
2	5	Fixed
3	6	Fixed
4	7	Fixed
5	8	Fixed
6	9	Fixed
7	15	Fixed
8	30	Fixed
9	60	Fixed
A	5	ON/OFF
B	10	ON/OFF
C	15	ON/OFF
D	30	ON/OFF
E	60	ON/OFF
F	75	ON/OFF

ON/OFF Control:

The cycle is interrupted if the Sensor is reactivated.

Fixed Time Control:

Full cycle only. The cycle is not interrupted if the sensor is reactivated.

Table 2

MC124 (Refer to Figure 11)

The Rada MC124 is an operating system for timed flow control of a wash basin area.

To alter the timing of the electronic control module, adjust the timing function dial as required (refer to Table 3) using a small slot-end screwdriver.
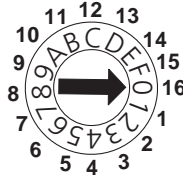
**Mono Control
Module 124**

**Cycle Time
In Seconds**

Figure 11

Position	Flow Time (Seconds)
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	10
B	11
C	12
D	13
E	14
F	15
0	16

Table 3

MC126 (Refer to Figure 12)

The Rada MC126 is an operating system for timed flow control of a group urinal area.

To alter the timing of the electronic control module, adjust the timing function dial as required (refer to Table 4) using a small slot-end screwdriver.
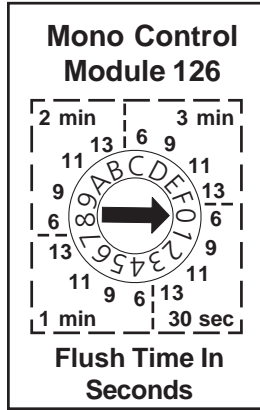

Figure 12

Position	Flush Time (Seconds)	Delay (Seconds/Minutes)
0	6	30 Secs
1	9	30 Secs
2	11	30 Secs
3	13	30 Secs
4	6	1 Min
5	9	1 Min
6	11	1 Min
7	13	1 Min
8	6	2 Min
9	9	2 Min
A	11	2 Min
B	13	2 Min
C	6	3 Min
D	9	3 Min
E	11	3 Min
F	13	3 Min

Table 4

FAULT DIAGNOSIS

If the system does not operate, carry out checks 1 to 3.

1.   Check if ball valves are open and a minimum pressure drop across the solenoid valve of 15 kPa is present.

2.   Check if all electrical connections are correct and tight.

3.   Check that 12 V AC $\pm$ 10% is present at the electronic control module supply connectors.

If the system is still not operating continue fault diagnosis by following the instructions below:

Symptom	Action	Yes/No	Remedial action
Solenoid does not work	Connect 12 V AC supply direct to solenoid connectors.	No	Remove solenoid coil and check resistance (should be approx 17 ohms +/- 10%), renew solenoid if necessary
		No	Clean solenoid diaphragm, renew solenoid if necessary; clean all filters and flush system through
		Yes	Continue below.
Does the ECM work	Check that 10-12 V DC is present at the ECM sensor connectors.	No	Renew ECM
		Yes	Continue below.
Does Sensor work	Does sensor voltage drop momentarily when sensor is operated	No	Renew sensor
		Yes	Renew ECM

Symptom	Action	Yes/No	Remedial action
Is water flow continuous	Disconnect the 12 V AC supply from the ECM. Does the water stop?	Yes	Renew ECM
		No	Continue below
	Has the solenoid valve been installed for correct flow direction (see arrow on solenoid body).	No	Install solenoid valve correctly, see INSTALLATION.

Remarks:

The ECM has a built-in protection against malfunction. If there is a malfunction, disconnect the 12 V AC connection for approx 5 seconds to reset module.

MAINTENANCE

General

Rada products are precision-engineered and should give continued superior and safe performance, provided:

1. They are installed, commissioned, operated and maintained in accordance with our recommendations, and

2. Periodic attention is given as necessary to maintain the product in good functional order. Guidelines for frequency are given below.

Rada Service Engineers/Agents will call by prior arrangement, if required. Service Contracts may be undertaken, subject to survey - details upon request.

Preventative/Precautionary Maintenance
(Planned Maintenance Programmes)

The frequency and extent of attention required will vary according to prevailing site and operational conditions.

Six-monthly

Visual: check internal component condition. Inspect for debris, scale deposition, deformation, damage, corrosion, etc. Maintain or renew as necessary.

Maintenance Procedures

Maintenance must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.

External surfaces may be wiped clean with a soft cloth, and if necessary, a mild washing-up type detergent or soap solution can be used.

WARNING! Many household and industrial cleaning products contain mild abrasives and chemical concentrates, and should **not** be used on this product.

Apart from occasional cleaning of the solenoid diaphragm, and filter if fitted, no other periodic maintenance is necessary unless component failure occurs.

Components are precision-made, so care must be taken during maintenance to avoid damage.

Rada Service Engineers/Agents will call by prior arrangement if required.

Solenoid valves require periodic maintenance, which depends on the quality of water within the building. Strainers within the water supply lines are recommended.

The diaphragm within the SV1015 solenoid valve is fitted with a bleed hole cleaning spring to help overcome blockages due to water borne debris.

SV1015 Universal Solenoid Valve

Should the solenoid valve fail to close upon disconnection of electrical power; it will need cleaning as follows:

1. Isolate the water supplies and relieve the pressure by operating an outlet.

2. Switch off the power and remove the two spade connectors on the solenoid coil.

3. Remove the solenoid coil.

4. Remove the diaphragm and the plastic core.

5. Clean out any residue or debris from the two small holes, one in the centre and the other one on the outer edge of the diaphragm. Check that the bleed hole is clear.

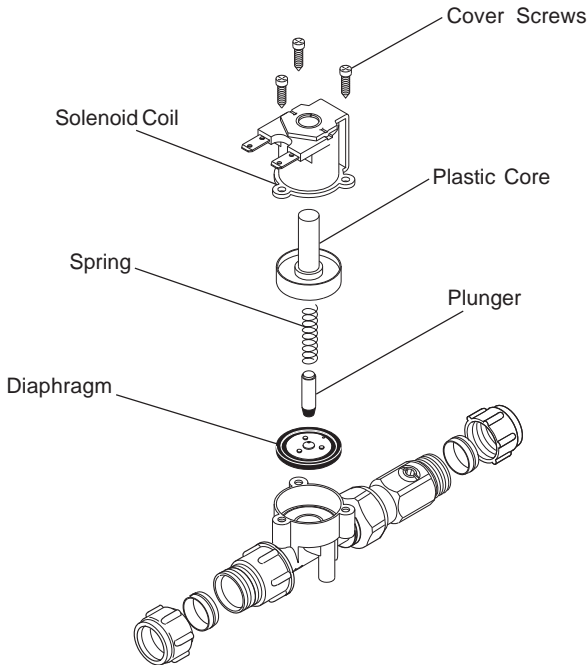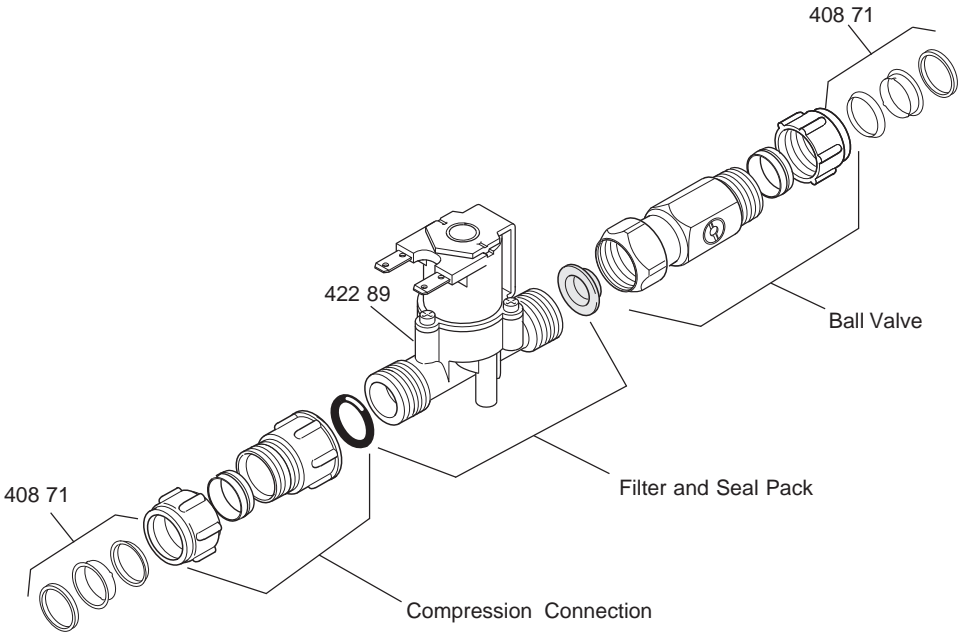**6.** Reassemble the components in reverse order.

Figure 13

SV1015 Universal Solenoid Valve Spare Parts List and Diagram

|	
422 89	Solenoid Valve (15 mm)
408 71	Flat-faced Inserts (3)
817.26	Isolating Ball Valve
817.27	Filter and Seal Pack
422 88	Diaphramg (not illustrated)
422 54	Connector Component Pack (not illustrated)
817.28	Compression Connection

Spare Parts Diagram
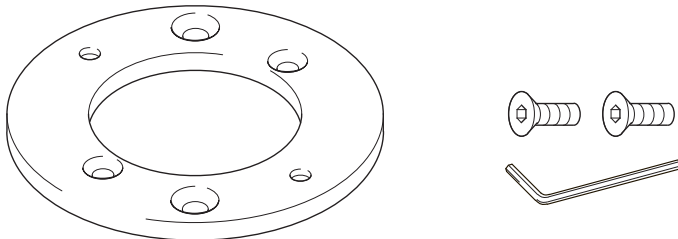
Rada Pulse 120/122 Sensor Spare Parts List

422 78   Cable Gland Pack (not illustrated)
422 85   Cover Plate Assembly
422 86   Fixing Pack - components identified 'A'
422 87   Two Part Connector Pack (not illustrated)

Spare Parts Diagram

422 85

A

A
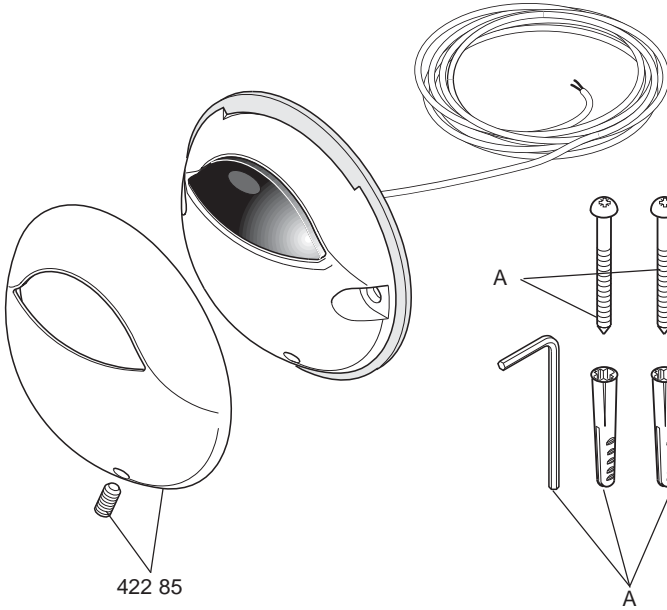
ACCESSORIES

Rada Mounting Plate

Rada mounting plate: Supplied with 2 x M5 x 12 mm stainless steel screws and 1 x 3 mm hexagonal wrench with which to secure the Rada Pulse 129 sensor for extra fixing security.

CUSTOMER CARE

Guarantee of Quality

Kohler Mira Limited guarantee this product against any defect in materials or workmanship for the period of one year from the date of purchase.

To be covered by this guarantee, service work must only be undertaken by Kohler Mira Limited or by their approved agents.

Not covered by this guarantee

Damage or defects arising from incorrect installation, improper use or failure to maintain in accordance with the instructions in this product manual, including the build-up of limescale. Defects or damage if the product is taken apart, repaired or modified by a person not authorised by Kohler Mira Limited or by their approved agents.

After Sales Service - how we can help you

We have a network of fully trained staff ready to provide assistance, should you experience any difficulty operating your Rada equipment.

Spare Parts

All functional parts of Rada products are kept for up to ten years from the date of final manufacture. If during that period, our stock of a particular part is exhausted we will, as an alternative, provide an equivalent new product or part at a price equating to the cost of repair to the old, bearing in mind the age of the product.

All spares are guaranteed for 12 months from date of purchase. Spares that have been supplied directly from us can be returned within one month from date of purchase, providing that they are in good order and the packaging is unopened.

Note! Returned spares will be subject to a 15% restocking charge and authorisation must be obtained before return.

Customer Care Policy

If within a short space of time of installation the product does not function correctly, first check with the operation and maintenance advice provided in this Product Manual to see if the difficulty can be overcome. Failing this, contact your installer to make sure that the product has been installed and commissioned in full accord with our detailed installation instructions. If this does not resolve the difficulty, please ring your nearest Rada contact, who will give you every assistance and if appropriate, arrange for your local service engineer or agent to call on a mutually agreeable date.
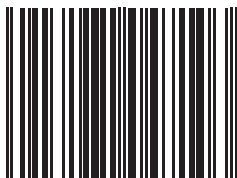
Contact:

5 013181 047103 >

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