

REMOTE SERIES 4000 PHOTO-SWITCHES

IDEAL SENSOR FOR MONITORING HOT AND COLD PRODUCT
Through Beam • Retro Reflect • Diffuse • All with one unit
Utilises Remote Stainless Lenses and Silicone/Optic Leads

Exceptional steam penetration

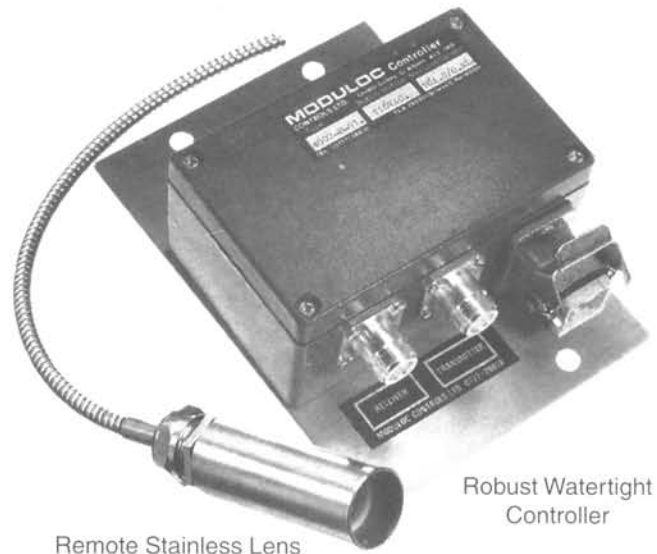
Accommodates 50mm misalignment

Robust stainless Lenses & Optic Leads
withstand up to 400°C

One tubular lens housing for all lens
options

Air purged and water cooled lens
mounts available

Two wire silicone extension leads



Remote Stainless Lens

Robust Watertight
Controller

These Series 4000 photo-switches are specifically designed for detection of both hot and cold product in extreme hostile areas.

Particularly useful where the product is normally too hot to permit use of Proximity or normal Photo-switches yet radiating insufficient I.R. energy for detection by Hot Metal Detectors.

As these switches utilise powerful Gallium Arsenide cells, their pulsed infra-red beams penetrate substantial steam over long distances and operate with the heavy lens contamination. They will also accommodate substantial lens mis-alignment.

Total flexibility in view of the many options available. Namely, single or dual controllers with sender and receiver lenses connected via silicone lead and/or armoured optic leads. A combination of both connection techniques enables mounting of the lenses close to the production line and the controller in an accessible area. Unscreened extension cabling possible.

Controllers comprise either a watertight metal enclosure or alternatively for multiple mounting, compact plug-in modules. Lenses are robust hybrid constructions in stainless steel with both Air Purge and Water Cooling mounting facilities available.



Plug - in Controller

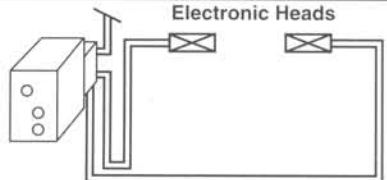
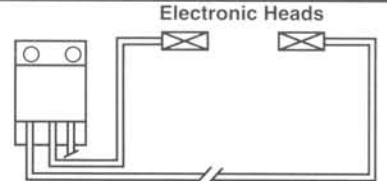
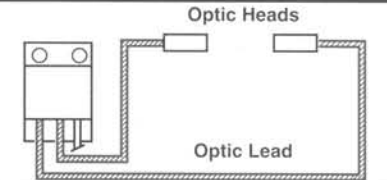
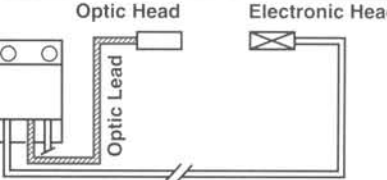
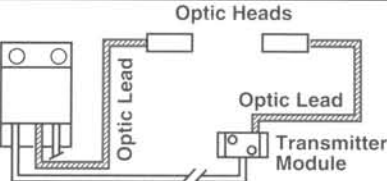
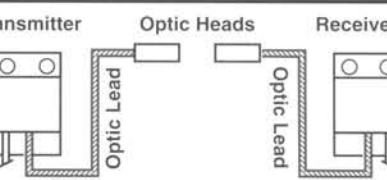
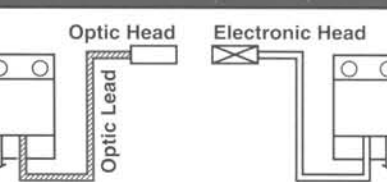
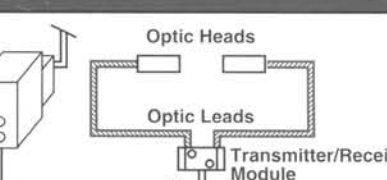


Watercooled and Air Purged
Lens Mount Option

Selection Chart

Eight models are available to allow the user to select exactly the right mounting and connection technique to suit individual installation parameters. All lenses are in standard 25mm tubular stainless housings. Connections are via common style plug/socket to ensure straightforward inter-changeability of components.

Lenses, Remote Modules, Optic leads and silicone interconnecting leads are ordered separately in addition to the specified controller arrangement. The Optic and silicone interconnecting leads are ordered according to length required. The interconnecting leads (2 core-unscreened) can be extended on site up to 30 metres in length.

Model and Range Spec.	Description	Connection Schematic (Through Beam Configuration)
TYPE 4000.-- Thru-Beam: 25 metres Retro: 10 metres Diffuse: 5 metres	Comprises plug-in Control Module, dual remote electronic lenses with silicone connection lead. Module incorporates sensitivity & 0 - 10 sec. delay. Low cost multiple arrangement.	
TYPE 4001.-- Thru-Beam: 25 metres Retro: 10 metres Diffuse: 5 metres	Comprises IP66 Controller, dual remote electronic lenses with silicone connection leads. Allows exposed mounting of controller & lenses where there is no high ambient. Strongest signal.	
TYPE 4002.-- Thru-Beam: 12 metres Retro: 4 metres Diffuse: 2 metres	Comprises IP66 Controller, dual optic leads with remote optic lenses. Allows exposed mounting of controller & installation of lenses in high ambient. High temperature installations.	
TYPE 4003.-- Thru-Beam: 17 metres Retro: 7 metres Diffuse: 4 metres	Comprises IP66 Controller, one electronic lens and an optic lens with optic lead. Allows long cable run to one lens where only one lens will be exposed to high ambient.	
TYPE 4004.-- Thru-Beam: 12 metres Retro: 4 metres Diffuse: 2 metres	Comprises IP66 Controller, in conjunction with Remote Transmitter module. Incorporates silicone extension lead and dual optic leads with remote optic lenses. Allows long cable run to one lens and mounting of both lenses in high ambient.	
TYPE 4005.-- Thru-Beam: 8 metres	Comprises two IP66 Controllers, one transmitter & one receiver complete with optic lead and lenses. Accommodates cabling restrictions & high ambient. Reduced Range.	
TYPE 4006.-- Thru-Beam: 12 metres	Comprises two IP66 Controllers. The transmitter with optic lens and the receiver with electronic lens. As 4005, yet lower cost and stronger signal.	
TYPE 4007.-- Thru-Beam: 12 metres Retro: 4 metres Diffuse: 2 metres	Comprises plug-in Controller Module with Remote Dual Transmitter/receiver module. Incorporates silicone extension lead and dual optic leads with remote optic lenses. Module incorporates both sensitivity and 0 - 10 sec. delay adjuster. Low cost multiple remote control and installation of lenses in high ambient.	

Lens Mounting and Reflector Options

A variety of lens mounting options are available to accommodate installation requirements. Mounting technique may be selected on the basis of purge, cooling and adjustment requirements.



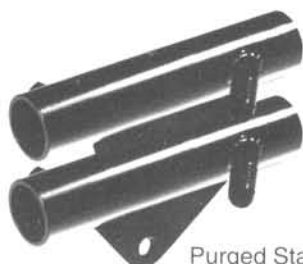
Purged Stainless Transmitter Lens
Type: PST - 07



Purged Stainless Receiver Lens
Type: PSR - 25



Purged and Cooled Stainless Transmitter Lens
Type: PWST - 07



Purged Stainless Dual Lens Mount (Reflex System)
Type: PSD - 27



Purged & Air Cooled Lens Mounting Cradle
Type: CMS - 27

Purged & Air Cooled Lens Mounting Bracket
Type: BPA - 27



Universal Lift/Swivel Stand
Type: LSS - 36



High Temperature Reflector
Type: PWR - 02



Photo-Switch Components

CONTROLLER/SWITCHING MODULES	DESCRIPTION	TYPE NO.
<p>Switched outputs: SPDT 10 Amp 240 VAC/DC Relay Plug-in modules 4000 & 4007: Additional NPN 30V 60mA max</p> <p>LENSES Tubular 25mmØ Stainless 316 Housing with glass lens</p> <p>Electronic lenses with screw type plug/socket</p> <p>High ambient Optic Lenses with gland fitting</p>	<p>For 110 VAC connection For 240 VAC connection For 24 VDC connection</p> <p>Electronic Transmitter Lens: 15 mtr range Electronic Transmitter Lens: 25 mtr range Electronic Receiver Lens Electronic Retro Lens (combined Transmitter/Receiver)</p> <p>Optic Transmitter Lens: 200°C Spec 5 metre range Optic Receiver Lens: 200°C Spec 15 metre range Optic Receiver Lens: 200°C Spec 5 - 15 metre range Transmitter & Receiver Lens: 400°C Spec Quartz Lens Rod (Through Beam Systems only): 1000°C Spec</p>	<p>MD400_91B MD400_92B MD400_93B</p> <p>ETS LTS ERS RTS</p> <p>F7T FCS F7R F7H Q1R</p>
<p>REMOTE MODULES</p>	<p>Transmitter Module Dual Transmitter/Receiver Module</p>	<p>TDM RTM</p>
<p>SILICONE INTER-CONNECTION LEADS Unscreened 2 core silicone lead with plug/socket both ends.</p>	<p>Various lengths: 5, 10, 20 and 30 metre (* *: Length specified by middle digits)</p>	<p>SC - ** - BB</p>
<p>OPTIC LEADS Stainless sheathed. Plug/socket fitting on controller and gland fitting on lens.</p>	<p>Various lengths: 2 to 10 metre (* *: length specified by middle digits) Standard 200°C Spec. Hi-Temperature 400°C Spec</p>	<p>LG - ** - AB LGH - ** - AB</p>

General Specifications

Receivers

RECEIVER CELL - Silicon Photo Transistor

Extraneous light immunity: 40,000 Lux
 Maximum sensitivity: 880nm
 I.R. cut-off filter incorporated
 Maximum cable resistance: 10Ω
 Estimated working life at 55°C: 100,000 hrs.
 Maximum peak temperature: 75°C
 Maximum operating temperature: 55°C

ELECTRONIC RECEIVER LENS - IP65

Receiving angle 12°: Approx. 80%
 Maximum temperatures: As Receiver cell.

OPTIC RECEIVER LENS

Receiving angle: 5 metre range head - 14°, 80%
 15 metre range head - 7°, 80%
 Temperature rating: FCS and F7R head - 180°C
 F7H head - 360°C

Transmitters

TRANSMITTER CELL -Ga ALAs

Modulation: 4 Hz
 Output: 12 mW
 Maximum cable resistance: 10Ω
 Impact resistance: 500 m/s²
 Estimated working life at 30°C: 100,000 hrs.
 Maximum peak temperature: 90°C
 Maximum operating temperature: 55°C

ELECTRONIC TRANSMITTER LENS - IP65

Emission angle: 5 metre head - 8°, 80%
 25 metre head - 3°, 80%
 Maximum temperatures: As Transmitter cell

OPTIC TRANSMITTER LENS

Emission angle: 7°, 80%
 Temperature rating: F7T head - 180°C
 F7H head - 360°C

Controller & Switching Modules

Power Consumption: 1.5 VA

Function LED: Green
 Alignment LED: Red
 Relay Rating: 250 VAC, 5A maximum
 Relay reaction: 40 m.s.
 Maximum operating temperature: -20°C to + 55°C
 NPN transistor rating: NPN 30V, 60 mA
 (Where provided)

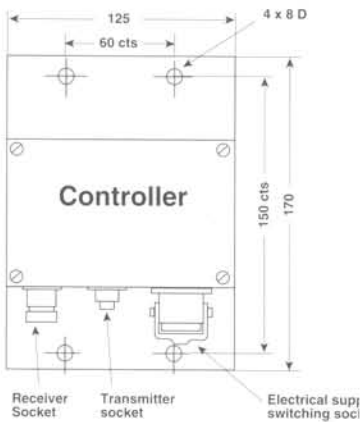
CONTROLLER HOUSINGS

Plug-in module: Plastic ABS
 All Other Housings: Oven baked painted aluminium
 to IP66

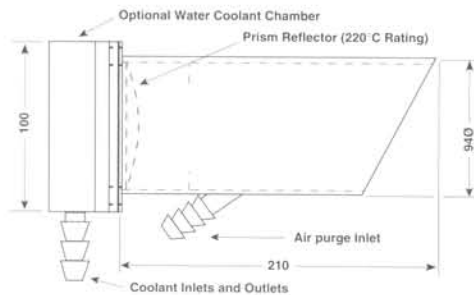
Performance data established/estimated by in-house test procedures.

The information presented herein is, to the best of our knowledge accurate. However, please ensure that this information has not been amended or superseded.

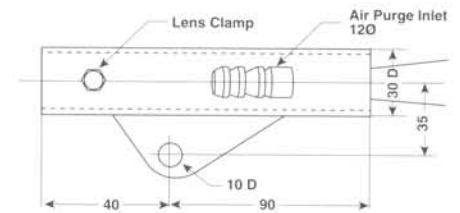
Dimensions



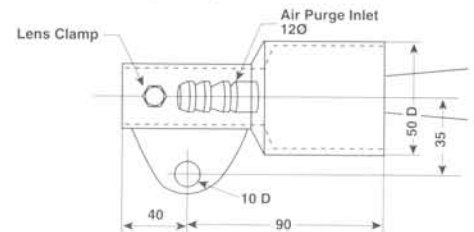
High Temperature Reflector PWR - 02



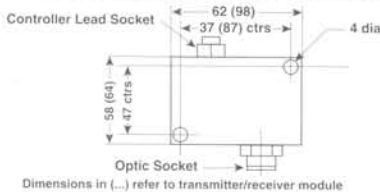
Purged Transmitter Mount PST-07



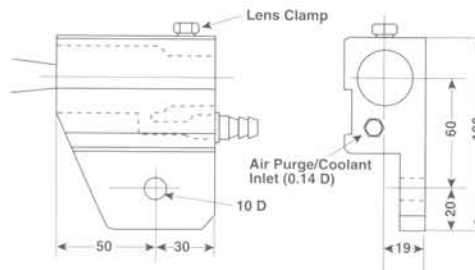
Purged Receiver Mount PSR-25



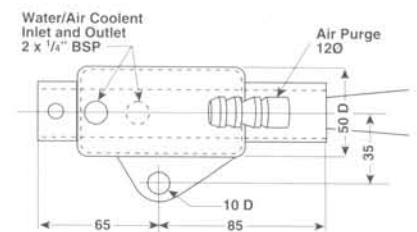
Remote Transmitter/Receiver Module



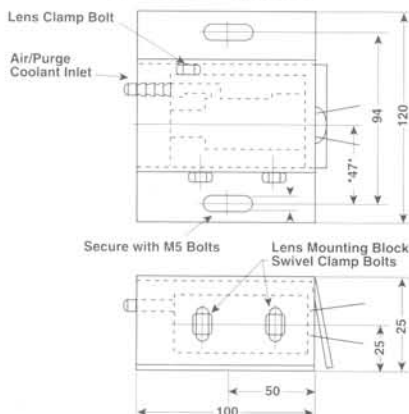
Purged/Cooled Lens Mounting Bracket BPA-27



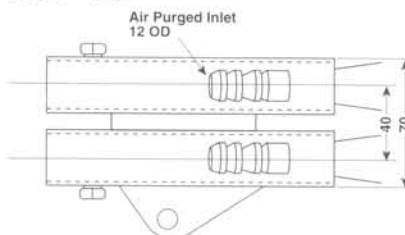
Purged/Cooled Transmitter Mount PWST-07



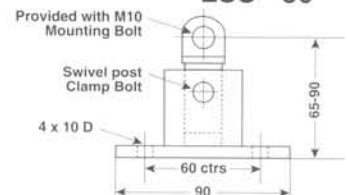
Purged/Cooled Mounting Cradle CMS-27



Purged Dual Retro Lens Mount PSD - 27



Universal Swivel Stand LSS - 36



Moduloc® Controls Limited

Quadrant House, 235 High Street, London Colney, St. Albans, Herts. AL2 1HD
 Tel: 44 (0)1727 821313 (2 lines) Fax: 44 (0)1727 826804