



June 2015

MONOCHROME WELDING CAMERA

- **Motorised focus and cross-polarizing filter**
- **Wide Dynamic Range sensor**
- **Operates in a hyperbaric welding gas environment**

The RPRS Monochrome Welding Camera from Kongsberg Maritime is a compact video camera that has been specifically designed to provide close-up real-time images of the arc welding process.

The camera is capable of operating in a hyperbaric welding gas environment (Argon). Although the camera should not come into contact with seawater at any time during its deployment it is able to withstand the hyperbaric pressure associated with operating at depths to 1,500 msw.

The camera uses a Wide Dynamic Range (WDR) monochrome image sensor capable of accommodating the very high intra-scene contrast ratios encountered in welding applications.

The camera has a fixed field of view, and motorised focus adjustment to accommodate different working distances. A motorised cross-polarising filter allows the amount of light reaching the sensor to be

remotely adjusted. This control is used to minimise the appearance of horizontal bands on the displayed image when viewing pulsed welding operations.

The camera operates from a regulated 24VDC nominal supply, and outputs CCIR analogue composite video (EIA RS-170 also available). Control of the motorised cross-polarising filter and focus function is by RS-485 serial interface with Kongsberg Maritime's Standard Networking Command Protocol 0350-5020.

Applications

- **Remote Pipeline Repair System**
- **Welding Applications**
- **Hyperbaric Welding**

TECHNICAL SPECIFICATIONS

Performance

Horizontal Resolution	500 TVL/PH
Light Sensitivity	Logarithmic response. 700 Cd/m ² (50% video level)

Electrical

Scan Standard	625 lines 50Hz
Sensor Elements	768 (H) x 576 (V)
Sensor	¹ / ₃ " format monochrome wide dynamic range (WDR) CMOS sensor
Video Output	1V pk –pk composite video, sync negative, into 75Ω
Power Input	12 to 30 V dc, 2.3W (max)
Focus Control	RS-485, Half Duplex
Cross-polarising Filter Control	RS-485, Half Duplex
Control Interface	RS-485 serial control, Kongsberg Maritime's Standard Protocol
Exposure Control	Automatic

Optical

Lens	17.5 mm, F2.5
AOV (nominal)	Horizontal 14°, Vertical 10.5°, Diagonal 17.5°
Focus Range	200mm to infinity (other options available)
Cross-polarising Filter Transmission	0.1% to 10%
Image Orientation	Engraved mark 'TOP' on housing indicates image orientation. Back end and front plate can be fitted in 16 orientations.

Mechanical

Dimensions	Diameter 48mm (main body), 56mm (rear end excl. connector) Length 105mm (excl. detachable filter)
Weight	0.5Kg
Housing Material	Titanium alloy, 6AL/4V ASTM B3 48 Grade 5
Front Port	Sapphire, anti-reflection coated
Front Plate	Aluminium alloy 6082-T6, black anodized
Pressure Relief Valve	Set to 10psi
Connector	Martec MAR13TW0476E-ASSY

Environmental

Operating Pressure	150 bar in Argon (max. 7 days any one deployment)
Temperature	Operating -5 to 40°C, Storage -20 to 60°C
Shock	30G peak acceleration, 25ms half sine duration
Vibration	10G, from 20 to 150Hz in all three axes
Electromagnetic Compatibility	BS EN 61000-6-3: 2007 and BS EN 61000-6-1: 2007

Specifications subject to change without any further notice

04946000_Datasheet_A4 / Rev. A

KONGSBERG MARITIME

Telephone: +44 1224 226500
E-mail sales: km.systems.uk@kongsberg.com

www.km.kongsberg.com



KONGSBERG