

SHIP DISPLAYS



- Designed for maritime environment and ECDIS, Radar, Ship Control applications
- Laminated safety glass with high efficiency anti-glare treatment
- Robust seawater resistant aluminium housing treated to protect from corrosion
- Wide dimming range backlight inverter
- Extended temperature range - climate control and display heating
- Enhanced vibration and shock resistance
- cTEC features guarantee trouble-free operation, prolong lifetime and reduce the cost of ownership
- Long-term service and support

Diagonal Model	17" 6017 SD	19" 6019 SD	23" 6023 SD
Display			
Panel type:	LCD/TFT	LCD/TFT	LCD/TFT
Size / diagonal:	17" / 43cm	19" / 48cm	23" / 58cm
Active screen dimensions (horizontal x vertical):	337.9 x 270.3mm	376 x 301mm	470 x 352mm
Resolution (pixel) / Format:	1280 x 1024 / 5:4	1280 x 1024 / 5:4	1600 x 1200 / 4:3
Brightness (typical):	250 cd/m ²	300 cd/m ²	250 cd/m ²
Dimming range:	> 2000:1	> 2000:1	> 2000:1
Contrast ratio (typical):	600:1	700:1	500:1
Number of colours:	16.7 Mio	16.7 Mio	16.7 Mio
Viewing angle (horizontal and vertical):	±85°	±85°	±85°
Interface Board			
Frequency (Horizontal/Vertical):	30 – 80 kHz / 50 – 85 Hz	30 – 80 kHz / 50 – 85 Hz	30 – 80 kHz / 50 – 85 Hz
Synchronization:	Sync on green, composite sync with auto detect, separate H- and V-sync	Sync on green, composite sync with auto detect, separate H- and V-sync	Sync on green, composite sync with auto detect, separate H- and V-sync
Inputs:			
PC analog:	•	•	•
PC digital:	On request	On request	On request
Y/C:	On request	On request	On request
S-Video:	On request	On request	On request
RS232:	•	•	•
Controls:			
Keys:	•	•	•
Potentiometer control for dimming (cabinet and rack versions only):	•	•	•
Serial Interface:	•	•	•
PiP:	○	○	○
Environmental Conditions			
Temperature (operating / non-operating):	-15°C - +55°C / -20°C - +60°C	-15°C - +55°C / -20°C - +60°C	-15°C - + 55°C / -20°C - +60°C
Vibration:	5Hz – 12Hz ± 1.6mm, 12.5Hz – 25Hz ± 0.38mm, 25Hz – 50Hz ± 0.1mm	5Hz – 12Hz ± 1.6mm, 12.5Hz – 25Hz ± 0.38mm, 25Hz – 50Hz ± 0.1mm	5Hz – 12Hz ± 1.6mm, 12.5Hz – 25Hz ± 0.38mm, 25Hz – 50Hz ± 0.1mm
Shock:	10g, 11ms	10g, 11ms	10g, 11ms
Power			
Power supply:	85 - 264V AC	85 - 264V AC	85 - 264V AC
Power consumption:	< 70W	< 70W	< 130W
Lockable power input:	•	•	•
Additional socket for lockable power output:	•	•	•
Approvals			
EMI/EMC :	EN55022 class A, EN55024, EN60945	EN55022 class A, EN55024, EN60945	EN55022 class A, EN55024, EN60945
Safety:	EN60950, EN60945, CE	EN60950, EN60945, CE	EN60950, EN60945, CE
Vibration:	EN60945	EN60945	EN60945
Shipcontrol:	EN61174 (ECDIS), EN60945 (Navigation), EN60936-1 (Radar)	EN61174 (ECDIS), EN60945 (Navigation), EN60936-1 (Radar)	EN61174 (ECDIS), EN60945 (Navigation), EN60936-1 (Radar)
Supplied Accessories			
Video cable:	VGA	VGA	VGA
Power cable , operating manual (D/E):	•	•	•
Versions			
Cabinet:	•	•	•
Rack:	•	•	•
Chassis-only:	On request	•	•
Dimensions (H x W x D)			
Cabinet version:	○	○	○
Rack version:	400 x 460 x 71 mm	444 x 483 x 98 mm	533 x 584 x 98 mm
Chassis-only version:	○	341 x 420 x 88 mm	438 x 539 x 107 mm
Colour			
Standard colour cabinet/front panel:	RAL 9005	RAL 9005	RAL 9005
Options*			
* Please note: Not all options may be combined.			
Desk Stand for cabinet version:	○	○	○
Bracket for rack version:	•	•	•
DVI cable:	○	○	○
Customised colour:	•	•	•
24V DC power supply operating from 18V to 32V:	•	On request	On request
ALC (Ambient Light Control):	○	○	○

Description & Special Features

LCD/TFT Displays / 4:3 Format

CONRAC's range of highly engineered Marine Grade LCD/TFT Displays is specifically designed to withstand the harsh maritime environment. The SD-Series (Ship Display-Series) meets the stringent demands of the international standards for Maritime Navigation and Radio Communications Equipment & Systems and ECDIS (Electronic Chart Display Information System).

Used for ECDIS, Radar, ARPA (Automatic Radar Plotting Aid) or ship control, the displays' superior performance provides very clear and readable images regardless of the ambient light conditions.

Screens range from 17 to 23 inches and are available in various configurations: with metal cabinet, rack-versions, bracket-mount versions and chassis-only versions for easy integration in customised housings or consoles.

Customised displays are available on request.

Features

Wide Dimming Range

During night-time operations in bridge and wheelhouse environments it is vital to optimise the display brightness to the ambient light conditions for night vision capability. CONRAC offers fully dimmable displays.

Contrast enhancing safety glass

The use of laminated safety glass with high efficiency anti-glare treatment does not only maximise security and protect the display but also enhances image contrast.

Special operating concept

CONRAC's COS (Customised Operation System) allows adjustment of brightness alternatively using the traditional potentiometer control or hot keys.

Approvals

Approved to IEC 61174 (ECDIS), EN 60936-1 (Radar), EN 60945 (Navigation), CONRAC Ship Displays are the ideal solution for the use in Integrated Bridge Systems.

Extended temperature range

Climate control and display heating for highly reliable operation under extreme temperatures.

Corrosion protection

Robust seawater resistant aluminium housing treated to protect from corrosion.

Shock and vibration resistance

Enhanced shock and vibration resilience ensures stable operation and long lifetime under critical ambient conditions.

eTEC - CONRAC Technology

Perfect image performance by day & by night.

The use for ECDIS, radar and navigation makes high demands on the displays in integrated bridge systems. Displays, being a critical aspect of safe and efficient operations, have to meet stringent quality standards and regulations.

Especially an infinitely variable dimming required for night vision is a challenge. As a result of extensive R&D, decades of direct experience in the field and very close cooperation with key suppliers, CONRAC has implemented vital functions into their Ship Display Series to guarantee superior performance, both, during day and night operation.

eDBI

Dynamic Backlight Inverter

Due to the high photosensitivity of the human eye in darkness it is evident that the brightness set-up needs to be adjusted accordingly. Standard dimming does not allow continuously adjustable brightness. CONRAC realizes this requirement with its dynamic logarithm backlight inverter.

This component enables the adjustment of even the smallest brightness nuances for night time application and avoids the annoying dazzling effect of standard screens.

eHCD

High Contrast Dimming

Standard dimming does not only reduce the brightness of the panel, it also reduces the contrast. As a consequence, the image shows a reduced contrast level and colour deviations in dimmed mode. To avoid this negative effect, CONRAC implemented high contrast dimming functions, allowing dimming at the full contrast level guaranteeing outstanding picture performance during night time operation.

Headquarters:

CONRAC GmbH
Lindenstrasse 8
D-97990 Weikersheim
Germany
Tel.: +49-7934-101-0
Fax: +49-7934-101-101
E-mail: info@conrac.de
www.conrac.de

Subsidiaries & Sales Offices:

CONRAC FRANCE
7 rue Saint Christophe
60300 Baron
France
Tel.: +33-3-44 54 96 99
Fax: +33-3-44 58 55 09
E-mail: info@conracfrance.fr
www.conrac.fr

CONRAC Asia
Display Products Pte Ltd
82 Genting Lane #05-04
Singapore 349567
Tel.: +65-67 42 79 88
Fax: +65-6747 39 33
E-mail: sales@conrac-asia.com
www.conrac-asia.com

CONRAC MENA FZE
Unit WB 03 - Block I /
Warehouse 11 - Airport FZE
PO Box 54592
Dubai - United Arab Emirates
Tel.: +9714-29 94 009
Fax: +9714-29 95 587
E-mail: info@conrac.ae
www.conrac.ae

CONRAC South Africa (Pty) Ltd
Hutton Court
CNR Summit Rd & Jan Smuts Ave
Hyde Park
Johannesburg 2169
South Africa
Tel.: +27-83-635 0369
Fax: +27-86-693 4976
E-mail: info@conrac.co.za
www.conrac.co.za

CONRAC LTDA
Latin America
Carrera 14
96 - 82
Bogotá
Colombia
Tel. / Fax: +57-1-34 65 338
E-mail: info@conrac.com.co
www.conrac.com.co

CONRAC Sales Office
Southern Europe
Via R. R. Garibaldi 30
I-00145 Rome
Italy
Tel.: +39-06-45 43 92 02
Fax: +39-06-45 43 91 79
E-mail: info@conrac.it
www.conrac.it

CONRAC Sales Office
Northern Europe
Pålsjögatan 66
S-25440 Helsingborg
Sweden
Tel.: +46-42-212 939
Fax: +46-42-212 948
E-mail: info@conrac.se
www.conrac.se

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GM_sd_860.0185_rev00

