

RAIS

HLD-RAIS 100



RUDDER ANGLE INDICATION SYSTEM



The Rudder Angle Indication System (RAIS) is used to display the direction and angle of a vessel's rudder blade. Its working principle is as follows: the rudder angle transmitter converts the rudder blade angle signal into an electrical signal and sends it to the connection and distribution unit; the connection and distribution unit transmits the rudder angle information to each location where rudder angle display is required; and the indicating unit with a pointer then displays the rudder angle and direction. Rudder angle indicating units are normally installed in the steering gear room, engine control room, bridge, port and starboard wings, etc.

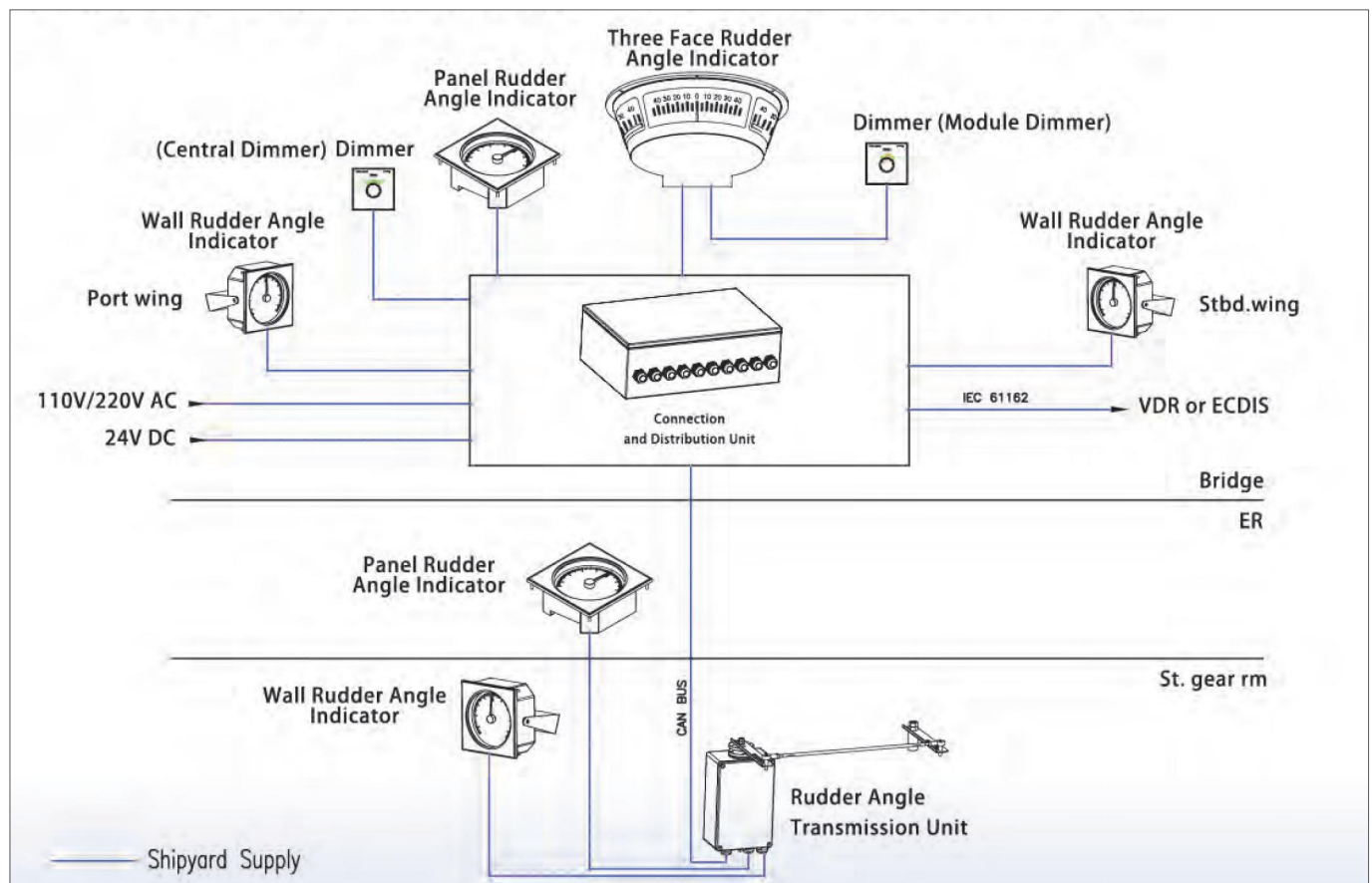
The HLD-RAIS 100 is a newly designed, fully digital rudder angle indication system. It converts all rudder angle information into standard IEC 61162 sentences for transmission between modules, and complies with relevant IMO regulations. It can be installed on various passenger and cargo ships, providing the crew with the current rudder angle and direction to assist in steering operations.

Features

- Fully digital design; standard IEC 61162 sentences are used for communication between modules, providing strong immunity to interference and high reliability.
- Flexible and scalable configuration; meets the requirements of various vessel types such as container ships, bulk carriers, working boats, yachts and fishing boats; suitable for single-rudder and twin-rudder systems.
- High indication accuracy and fast response.
- Compact and elegant appearance; good night-vision effect; instrument panel customization supported.
- Unique online calibration and correction technology; simple and quick installation and commissioning.
- Dimming supports automatic dimming, remote dimming or group dimming.
- Provides rudder angle information and own operating status to VDR or other equipment.
- Supports simultaneous connection to main power and emergency power with automatic changeover; system failure triggers both visual and contact (volt-free) alarms, meeting the requirements of IMO Resolution A.1021.

System Configuration

According to its functions, the HLD-RAIS 100 Rudder Angle Indication System consists of six parts: Rudder Angle Transmitter Unit, Connection and Distribution Unit, Three-face Rudder Angle Indicator, Wall-mounted Rudder Angle Indicator, Flush-mounted Rudder Angle Indicator and Dimmer Unit. The structure of the HLD-RAIS 100 is shown in Figure 1.



Technical Specifications

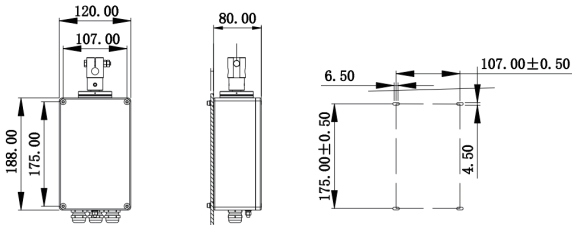
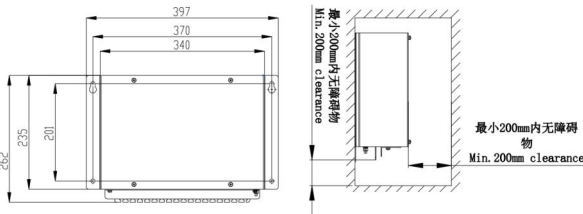
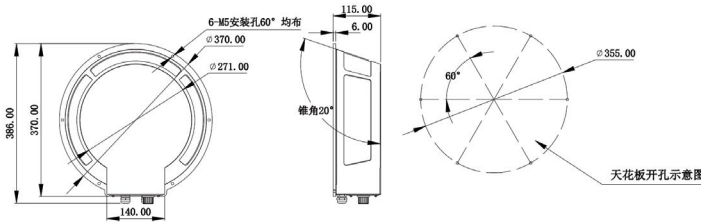
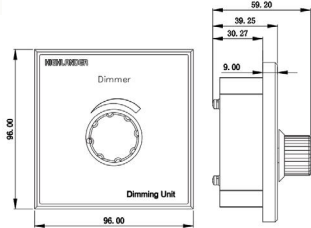
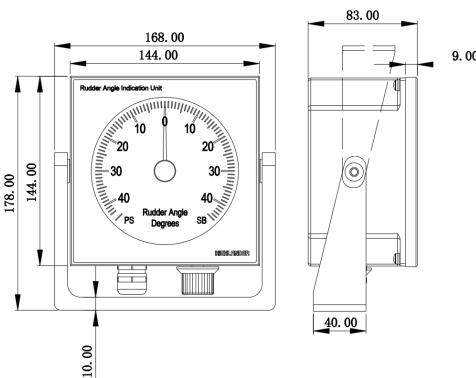
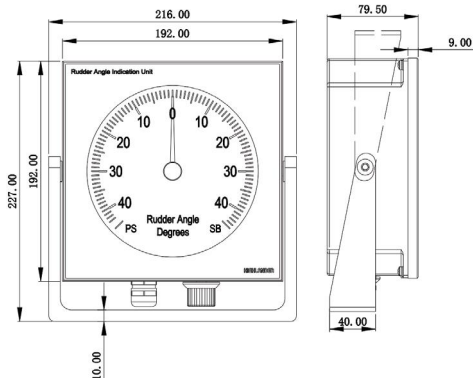
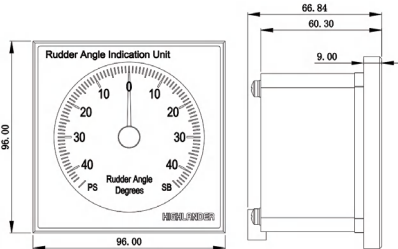
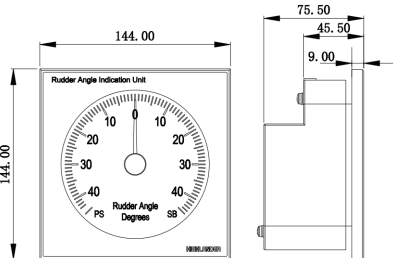
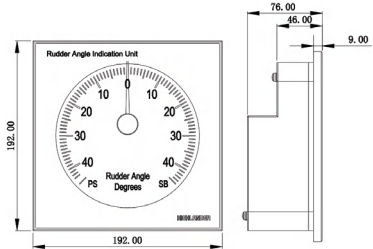
System Specifications

Performance Standards	Complies with ISO 20673-2007, IMO Resolution A.1021 and MSC.64(67)
EMC/EMI	IEC 60945 Ed.4.0 (2002)
Power supply	Main power AC110/220 V, 50 Hz and emergency power DC24 V, dual inputs with automatic changeover; power consumption < 30 W
Language	English
Interface	Up to 8 rudder angle indicators; 2 × IEC 61162 status outputs for VDR, etc.; 1 × volt-free alarm contact for system failure
Scale range	±35°, ±45° or ±65°; minimum scale division: 1°
Accuracy	Better than 0.5°
Pointer damping time	<3 s

Physical Specifications

Name	Type	Size/mm (L X W X H)	Weight (kg)	Installation	Protection
Rudder Angle Transmitter Unit	HLD-RTU100	188x120x80	4	Wall mounting	IP56
Connection and Distribution Unit	HLD-CDU100	340x235x120	8	Flat mounting	IP22
Three-face Rudder Angle Indicator	HLD-TRU100	φ370x115	6	Top mounting	IP22
Rudder Angle Indicator	HLD-WRU100-144	144x144	3	Wall mounting	IP56
	HLD-WRU100-192	192x192	4		
	HLD-PRU100-72	72x72	0.5	Flush mounting	IP22
	HLD-PRU100-96	96x96	0.5		
	HLD-PRU100-144	144x144	0.8		
	HLD-PRU100-192	192x192	1		
Dimmer Unit	HLD-DMU100	96x96	0.5		

Dimensional Drawings

Rudder Angle Transmitter Unit HLD-RTU100 4.0kg 	Connection and Distribution Unit HLD-CDU100 8.0kg 	
Three-face Rudder Angle Indicator HLD-TRU100 6.0kg 	Dimmer Unit HLD-DMU100 0.5kg 	
Wall 144 Rudder Angle Indicator Unit HLD-WRU100-144 3.0kg 	Wall 192 Rudder Angle Indicator Unit HLD-WRU100-192 4.0kg 	
Panel 96 Rudder Angle Indicator Unit HLD-PRU100-96 0.5kg 	Panel 144 Rudder Angle Indicator Unit HLD-PRU100-144 0.8kg 	Panel 192 Rudder Angle Indicator Unit HLD-PRU100-192 1.0kg 



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