

**[Product Configuration]**

**Standard**

- Manual steering system**
- Steering Mode Switch HLD-SW 200
  - Follow-up Unit HLD-FU 200
  - Non-Follow-up Unit HLD-NFUV 200
  - Rudder Feedback Unit HLD-RFU 600
  - Steering Control Unit HLD-SCU 600

**Alarm System**

- Alarm Display Unit HLD-ADU 600

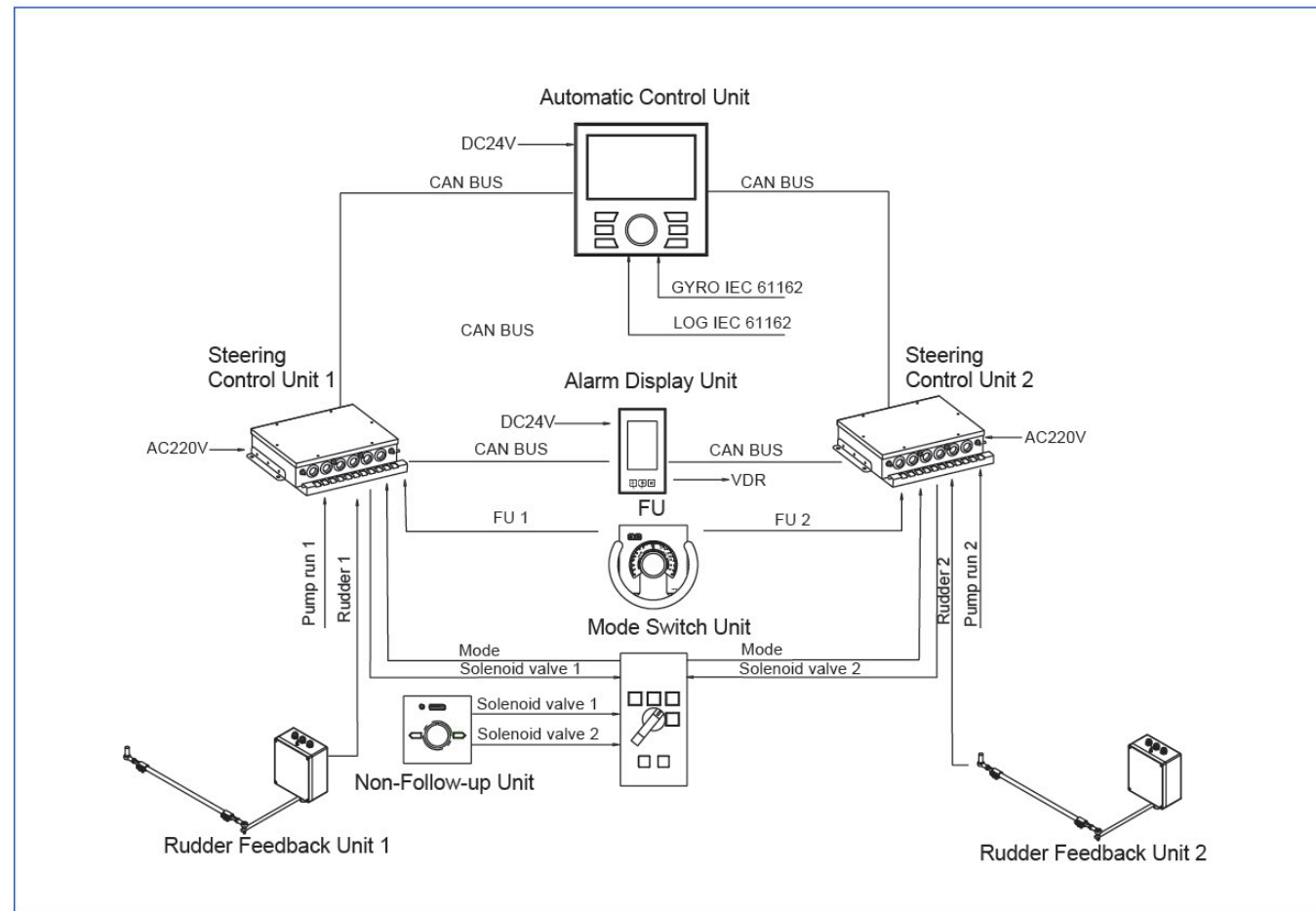
**Automatic Steering System**

- Automatic Control Unit HLD-ACU 600

**Optional**

- Relay
  - Rudder Pump System Switch
  - Compass Repeater
  - External Steering Interface Unit
  - Remote Control Link Unit
  - Mini Follow-up Unit
  - Steering Gear Pump Starter
  - Steering Gear Alarm & NFU Control Box
  - Steering Alarm Display Unit
  - Automated bridge console
- HLD-RE 200  
HLD-RPS 200  
HLD-RP 200  
HLD-ESIU 600  
HLD-RRU 600  
HLD-MFU 600  
HLD-SST 600  
HLD-SAC 600  
HLD-SADU 600  
HLD-ST 200

**[Typical Configuration:]**

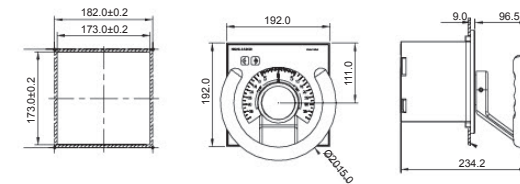


HLD-SC 600 Steering Control System

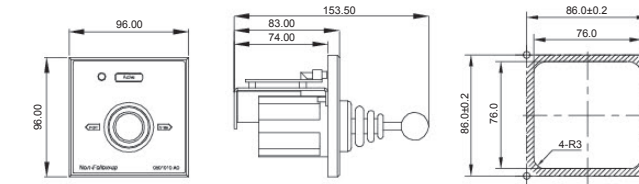
**[Dimensional Drawings]**

**Manual System**

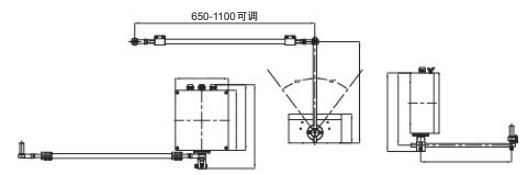
**Follow-up Unit  
HLD-FU200**



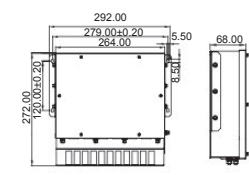
**Non-Follow-up Unit  
HLD-NFUV200**



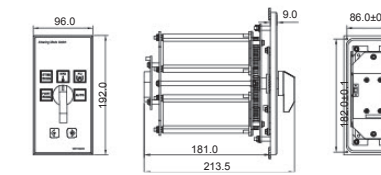
**Rudder Feedback Unit  
HLD-RFU600**



**Steering Control Unit  
HLD-SCU600**

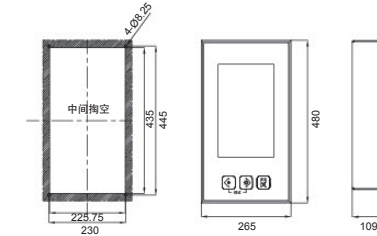


**Steering Mode Switch  
HLD-SW200**

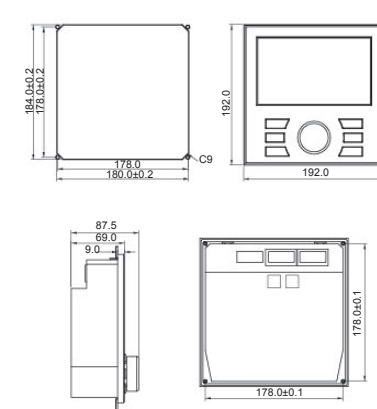


**Alarm & Automatic Control**

**Alarm Display Unit  
HLD-ADU600**

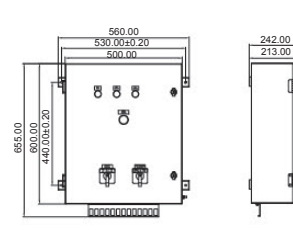


**Automatic Control Unit  
HLD-ACU600**

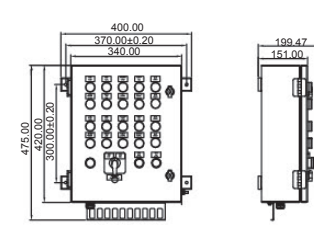


**Optional Components**

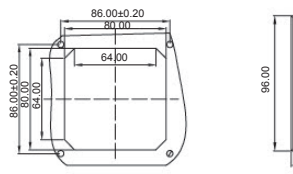
**Steering Gear Pump Starter  
HLD-SGS600**



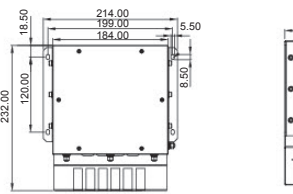
**Steering Gear Alarm & NFU Control Box  
HLD-SAC600**



**Mini Follow-up Unit  
HLD-MFU600**



**External Steering Interface Unit  
HLD-ESIU600**



China Classification Society (CCS) type approval  
The European Union (EC) MED (B+D) recognition  
DNV-GL type approval

**SCS**  
**STEERING CONTROL SYSTEM**  
**HLD-SC 600**



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Beijing Highlander Digital Technology Co., Ltd.





HLD- SC 600 Steering Control System is based on years of intensive research & development by Beijing Highlander Digital Technology Co.,Ltd.. The latest generation digital steering control system had been type approved by China Classification Society (CCS) and DNV-GL. Heading Control System is adaptive to different types of vessels and loading conditions. The precision control results in less rudder movements, not only reduces the wear and tear on machinery but also fuel

**【Features】**

**Wide range of applications**

- Modular design, all modules are a standard size or a multiple of the standard size. Different combinations of modules can be used to meet different needs, such as low-end with the rudder, the high-end autopilot, single rudder blade system and dual rudder blade system.
- Provide automatic parts separately.
- Provide Steering Gear Pump Starter, Steering Gear Alarm and NFU Control Box, etc separately.
- Suitable for container ship, public service ship, large bulk cargo ship, offshore working tug, small fishing vessel, etc.

**High reliability**

Online self-monitoring technology detects system abnormalities at any time. Strict channel isolation technology ensures that the each channel is isolated.

**High control accuracy & energy efficiency**

Advanced control algorithms ensure follow-up control accuracy better than 1 degree, and better than 0.7 degree under the 3rd sea state under automatic control mode; also reduce the times of steering, avoid a large rudder angle, save fuel and reduce wear and tear on the steering system.

**Friendly interface**

Full-color& 7 inches touch screen with keyboard.

**All-digital design**

All-digital interfaces (IEC 61162-1), including the interface with the VDR; supports two heading source input.

**Easy installation and maintenance**

Original calibrated correction technology, simplifies Rudder Feedback Unit connecting rod installation.

**Intelligent alarm system**

300 records of history alarm, which follow a fault-recover instruction each.

**Multiple automatic control functions**

Including heading control, course control, track control.

**Large data analysis**

Heading records of latest 2 hours and reviewable rudder information are helpful to steering.

**Remote maintenance**

Maintainable remotely together with HLD-VDR 600.



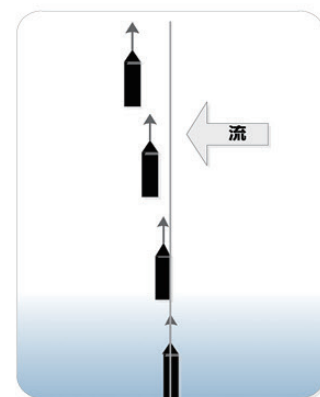
**【Functions】**

Functions	Characteristics
Non-Follow-up steering Control	Non-Follow-up Unit using solid and reliable handle, operating feeling good.
Follow-up steering Control	Helm wheel can be locked in any position, and the dial scale near zero degrees special has been amplified in order to precise steering.
Override	Support direct operate the Non- follow-up Unit to override control when on Automatic steering Control mode.
Automatic steering Control	Support the heading control, course control, track control.
Remote Control	Multiple remote control stations, select by Remote Control Link Unit.

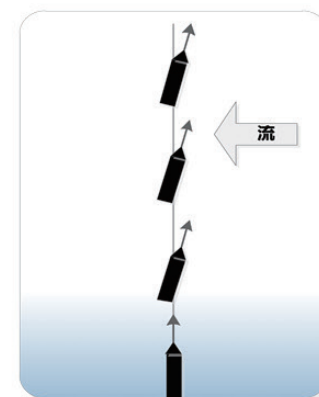


Automatic Control Unit

**Heading control & Course control**



Heading control



Course control

**【HLD-SC 600 Track Control System】**

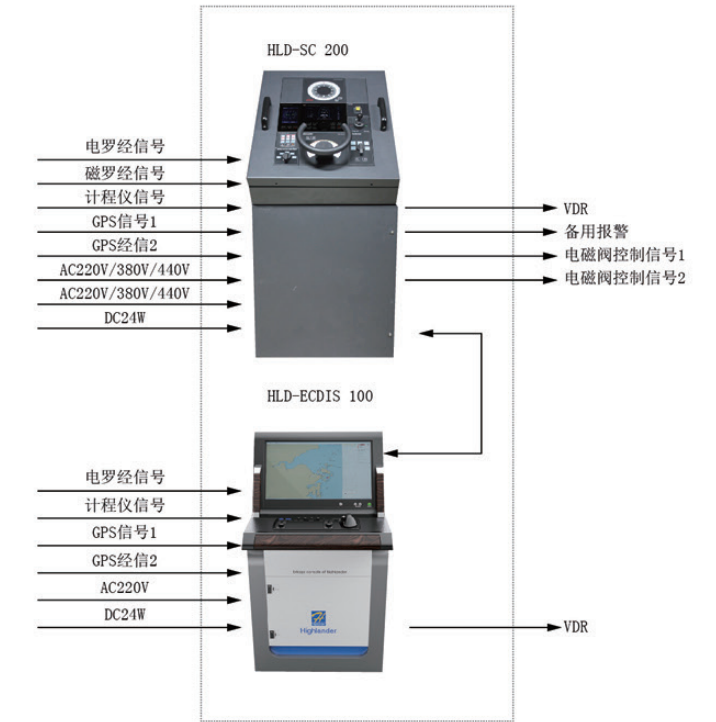
- ECDIS: HLD-ECDIS 600
- Steering Control System: HLD-SC 600

**Functions:**

- HLD-SC 600 system provides rhumb line sailing and great circle sailing mode, great circle sailing mode help ocean vessels to find the shortest route.
- HLD-SC 600 system provides route check function, the rationality, safety and operability of the planned route can be checked before execution.
- HLD-SC 600 system provides assisted turns between legs, the vessels can turn smoothly automatically according to the user' s turning set.

**Track control system performance:**

- Control performance: the cross-track error is less than 0.3 n



**【Technical parameters】**

Power Input	<ul style="list-style-type: none"> <li>• 220/380/440V AC</li> <li>• 24V DC (18~36V DC)</li> </ul>	Signal Output	<ul style="list-style-type: none"> <li>• To Steering engine Contact output (110V DC ~ 0.5 A, 24V DC ~ 2.0 A) Voltage Output(+/-10 V DC ~ Max 5mA)</li> <li>• To VDR NMEA-HTD, RSA, ALR</li> <li>• Alarm Output OFF-heading Heading monitor Follow-up amplifying system failure System failure alarm Low speed Rudder limit Steering gear alarm unit (optional)</li> <li>• Status Output Steering mode Override. Heading. Set heading. Heading source. Speed source. ROT. Rudder order, rudder, rudder Limit System status</li> </ul>
Consumption	40W		
Temperature	<ul style="list-style-type: none"> <li>• Working -15°C ~55°C</li> <li>• Storage -25°C ~70°C</li> </ul>		
Signal Input	<ul style="list-style-type: none"> <li>• Gyrocompass NMEA, HDT, THS</li> <li>• Magnetic compass NMEA, HDT, HDG</li> <li>• Speed Log NMEA, VTG, VHW, VBW</li> </ul>	Regulations	<ul style="list-style-type: none"> <li>• IEC 62288</li> <li>• A.342(IX)</li> <li>• A.694(17),</li> <li>• MSC.64(67)Annex3</li> <li>• CCS 《Steel ship class specification》</li> <li>• SC94</li> </ul>
Regulations	<ul style="list-style-type: none"> <li>• ISO 11674</li> <li>• EN/IEC 62065</li> <li>• EN/IEC 61162-1</li> <li>• EN/IEC 60945</li> <li>• SO 16329</li> </ul>		