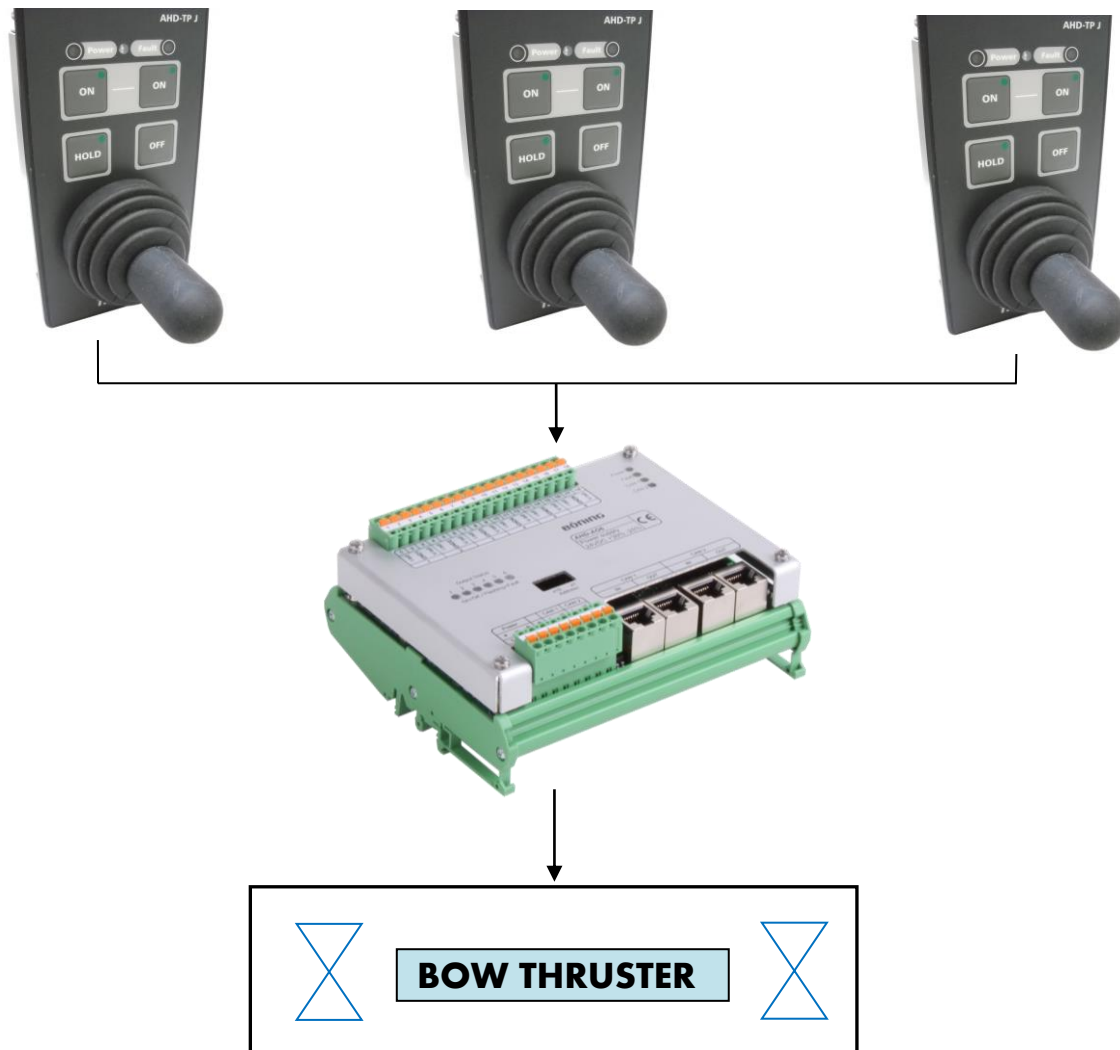


AHD-TP J / AHD-A06

Thruster Panel Control System



- **AHD-TP J Control Panel for wheelhouse, panel or control box installation**
 - Front dimensions 70mm x 130mm, waterproof design (front IP 67)
 - Single axis joystick with contact-free Hall technology measuring system for each thruster control (lifetime > 1.000.000 operations)
 - Automatic return to center position or friction brake function
 - Automatic LED dimming and night operation design
 - Integrated system and bus monitoring with acoustic alarming
 - Operating keys for ON / OFF and hold position
- **AHD-AO 6 signal output with 3 or 6 analog voltage or current outputs.**
 - Safe and precise control by galvanically isolated outputs and 16 bit resolution
 - Communication via CAN bus, up to 8 control units can be combined

Description

AHD-TP J and AHD-AO6 offer a simple and cost-effective solution for controlling a thruster from several positions. The system allows the combination of up to 8 control units AHD-TP J, the communication is done via a common CAN bus.

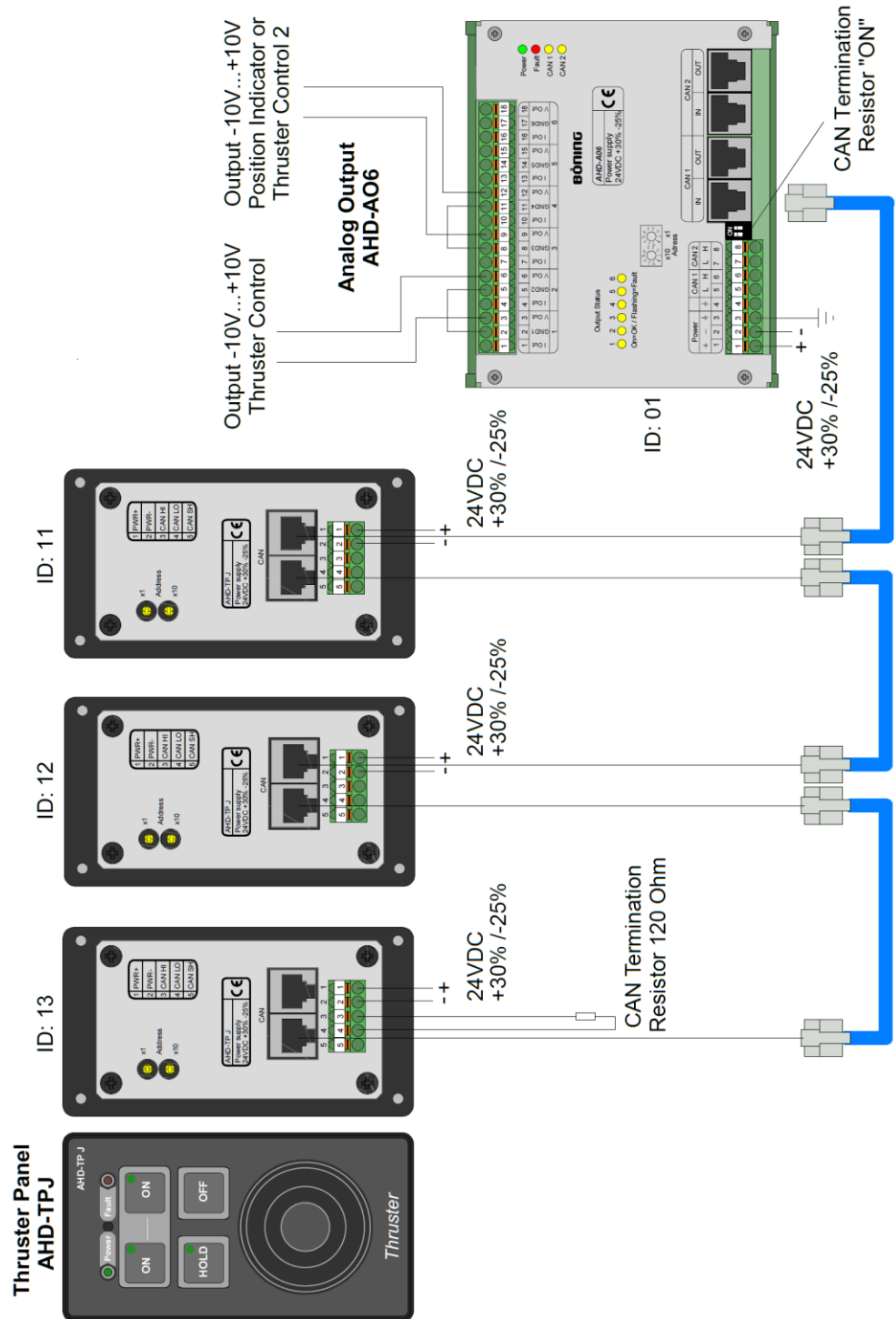
The high-quality joystick with precise control allows easy and comfortable operation. In addition, a protection against accidental switch-on and a HOLD function are integrated. The HOLD function keeps the control signal for the bow thruster constant even after the joystick is freed.

Integrated status LEDs inform about the current system status, the output module AHD-AO6 additionally offers the possibility to attach a separate position indicator.

Operation

Standby:	After applying the operating voltage, the green power LED (top left) in AHD-TP J lights up. Joystick and thruster are in ZERO position, the system is "standby".
Activation:	→ simultaneous pressing of the two "ON" keys for approx. 1 second. The two green LEDs (ON keys) light up and show that the system is ready for operation.
Operation:	→ When activated, the thruster can be controlled by moving the joystick to BB or STB. After releasing the joystick, the system automatically moves back to the ZERO position.
HOLD function on:	→ If the joystick is in a certain position, this can be held permanently by activating the HOLD function. → After pressing the HOLD key, the green LED (HOLD key) lights up, then the joystick can be released.
HOLD function off:	→ By pressing the HOLD key again → By moving the joystick → Automatic switch-off after 5 minutes without operation. In all cases, the green LED (HOLD key) switches off, the system can then be moved on normally.
Switching off:	→ Manual switch-off by pressing the OFF key. The two green LEDs (ON keys) switch off. The system is now in standby mode again. → Automatic switch-off after 5 minutes without operation. The two green LEDs (ON keys) switch off.
Handover:	In the case of several operating units, the operating authorization always assigned to the panel that was switched on last. When another operating unit is activated, the previously active panel is automatically switched off. This also applies to a currently active HOLD function.

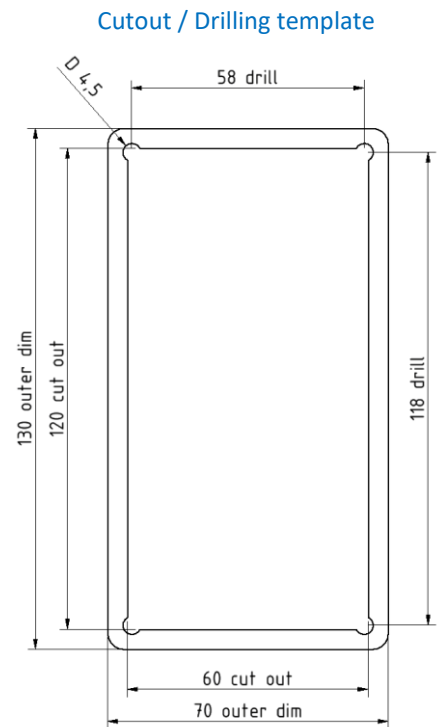
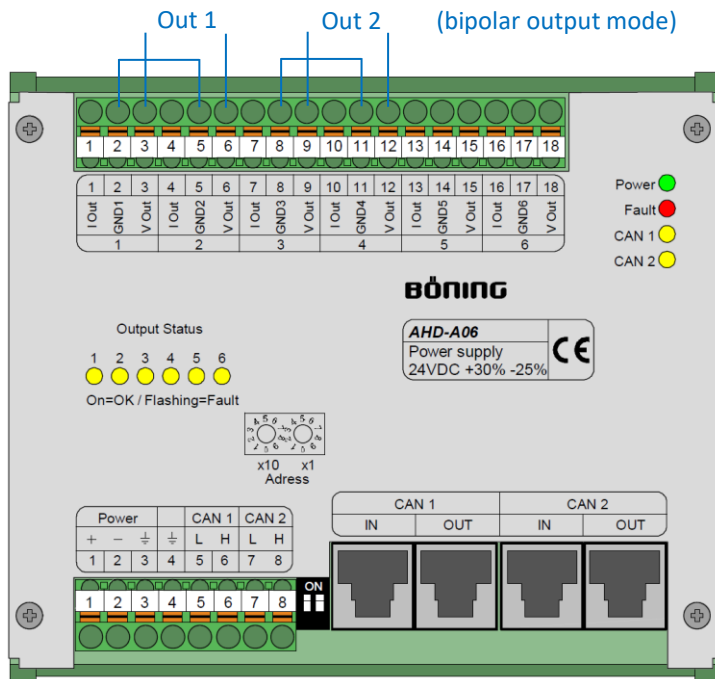
Connection example with 3 operating panels



Notes:

- CAN Bus: CAN bus 1 is used by default. A 120 Ohm terminating resistor must be installed at the first and last bus station.
- AHD-AO6 in bipolar output mode: Here, two analog outputs each are used to generate a bipolar signal. The respective GND lines of the output pairs "Out 1" (GND1, GND2) and "Out 2" (GND3, GND4) must be connected to each other.
- Position indication: The output signal for output pair "Out 2" runs synchronously with output pair "Out 1" by default. Alternatively, a position indicator can be driven here.

Drawings:



Technical data AHD-A06

Dimensions: B x H x T:	147mm x 125mm x 52mm
Weight:	approx. 0,5kg
Operating temperature:	-25°C ... +70°C
Storage temperature:	-50°C ... +85°C
Degree of protection:	IP 20
Power supply:	24 V DC (+30% / -25%), max. 400 mA @ 24 V
Outputs:	6 x Analog unipolar, galvanic isolated Current 0...20mA, 4...20mA, 0...24mA Voltage 0...5V, 0...10V <u>Alternatively with GND bridge:</u> 3 x analog bipolar, galvanic isolated: Current 20...+20mA Voltage -10...+10V
Resolution:	16 Bit
Maximum load resistance:	600 Ohm (at 20mA)
Maximum load current:	20mA
Interfaces:	2 x CAN bus for communication
Assembly:	Module carrier housing, Installation on mounting rail TS 32 and TS 35

Technical data AHD-TP J

Dimensions: B x H x T:	70 mm x 130 mm
Panel cutout:	60 mm x 110 mm
Required installation height:	min. 110 mm
Weight:	approx. 0,5 kg
Operating temperature:	-25°C ... +70°C
Storage temperature:	-50°C ... +85°C
Degree of protection:	IP 67 (front side), IP 10 (rear side)
Power supply:	24 V DC (+30% / -25%), max. 100 mA @ 24 V
Interfaces:	2 x CAN bus for communication