

Sales Presentation

AVENTICS™ Marex 3D Joystick System Upgrade for Marex OS

Business Development Marine



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Marex 3D Joystick System – Upgrade for existing yachts



The state-of-the-art joystick system easy to retrofit.



For yachts with MAN engines and Marex OS propulsion control

Marex 3D now available for retrofits

Marex 3D Joystick System – Upgrade for existing yachts



The state-of-the-art joystick system easy to retrofit.

Suitable for yachts with

- Marex OS propulsion remote control system
- Conventional shaft line, fixed pitch propeller applications, diesel engines including trolling
- Customary thrusters – bow only or bow and stern - ON/OFF and proportional, electric (DC/AC) or hydraulic, digital/analog/CAN (NMEA2000)

Enjoy the comfort of one-hand docking and experience automatic position holding

Why upgrading?

The Benefits of Marex 3D

Marex 3D Joystick System – Upgrade for existing yachts



The state-of-the-art joystick system easy to retrofit.

Why upgrading?

- ★ A joystick system combines the control of engines and thrusters into one device: the joystick. It allows for steering the vessel single-handed in an intuitive and comfortable way.
- ★ It is a considerable gain in comfort and safety and increases the value of your yacht.
- ★ When connected to a GPS sensor and further devices, a joystick control can offer position hold functions for even more comfort of operation.

Enjoy the comfort of one-hand docking and experience automatic position holding

Marex 3D Joystick System – Upgrade for existing yachts



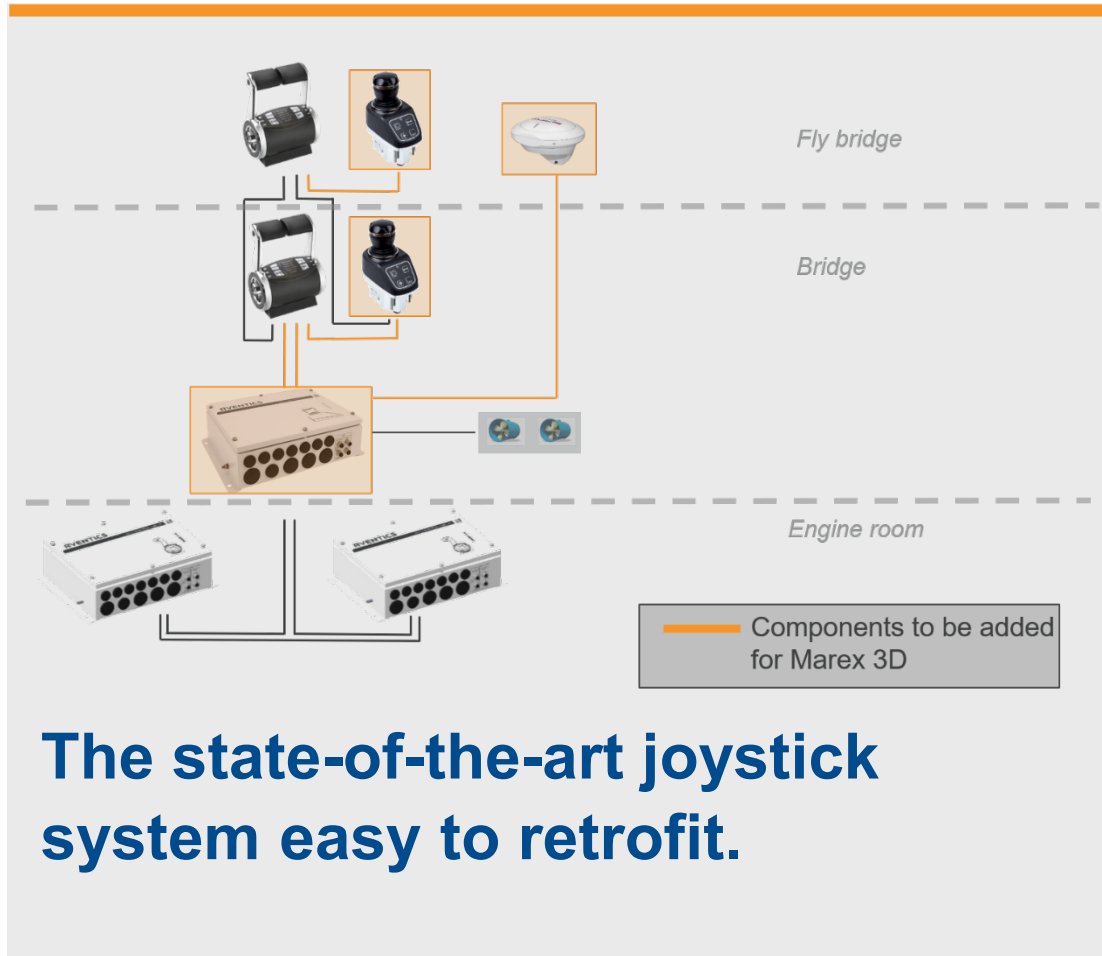
The state-of-the-art joystick system easy to retrofit.

Why Marex 3D?

- ★ Marex 3D is easiest to refit on ships with Marex OS. There is no need for cabling through the ship or special interfaces. The system is perfectly suited for configurations with MAN engines and approved by the engine manufacturer.
- ★ Marex 3D performs with utmost accuracy due to a vessel-specific vector calculation and smart adjustment software.
- ★ Remote Assistance for commissioning is included in the package.

A package solution perfect for MAN engine applications

Marex 3D Joystick System – Upgrade for existing yachts







Easy Installation and Commissioning

- ★ Marex 3D uses the existing cables of the Marex OS propulsion control system. The wiring effort compared to other brands is considerably reduced.
- ★ The controller and joysticks can be installed flexibly at any control station.
- ★ For the start-up and adjustment, 4 h of remote assistance are included in the offer.

Easy installation and commissioning

Marex 3D Operation Modes

Marex 3D Joystick System – Upgrade for existing yachts

Minimum propulsion configuration	Engines	Transmission	Thruster	Joystick modes	Description
	Diesel, twin setup	Standard reversing gear	Electric on/off		3D mode
				Thruster mode	 Separate thruster control
				Heading Hold	 Ship's heading is kept while the yacht is floating.
Trolling	Hydr. Proportional			3D Hold	 Ship's heading and position are kept.
				Virtual Anchor	 Ship floats around a defined set point, the bow pointing to the set point.







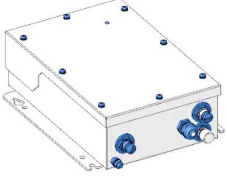

The state-of-the-art joystick system easy to retrofit.

Features

- Extendable function scope
- Optional DP modes
- Outstanding precision due to ship-specific adjustment and implementation of yaw angle.
- Ergonomic joystick design, separate control of z-axis
- Class-approved components

State-of-the-art technology

Marex 3D Joystick System – Upgrade for existing yachts

Engines	Transmission	Thruster	Joystick modes		Description	Use cases	Required Components	
Minimum propulsion configuration	Diesel, twin setup	Standard reversing gear	Electric on/off	3D mode		Joint control of engines and thruster(s). Joystick returns to neutral position when released.	Slow-speed maneuvering (e. g. mooring)	
				Thruster mode		Separate thruster control	Conventional docking or other maneuvers which require independent control of thrusters.	
				Heading Hold		Ship's heading is kept while the yacht is floating.	Game fishing, enjoying the view to coastline or sunset	
	Trolling	Hydr. Proportional	3D Hold		Ship's heading and position are kept.	Waiting at water gates, fuel stations, port entries etc.		
			Virtual Anchor		Ship floats around a defined set point, the bow pointing to the set point.	Keep position with optimized fuel consumption and low noise		

Operating mode options and technical requirements

Components and features

Marex 3D Joystick System – Upgrade for existing yachts

Components and Material Numbers



	Item	Material No.
Basic package:		
	Joystick Type 531	R417003030
	3D Controller	3460690410
	Power interruption cable	R419801309
	Y-Adapter	R419800372
	CAN bus cable, 10 m	8946054822 (4 pcs.)
	CAN bus cable, 2 m	8946054802
	Terminating resistor	8941054260
	GPS Sensor	R419801928
	Bus cable adapters	R419801929, R419800162
Options:		
	DP Controller	R419300745
	Service kit "parameters"	R417003464
	Service kit "FLASHit -change firmware"	R417003463

Marex 3D Joystick System – Upgrade for existing yachts

Joystick Type 531



Mat No.
R417003030

- Swivel-mounted control stick
- Spring-returned to neutral position
- Separate control of z-axis
- Stainless steel application
- Backlit, dimmable keypad
- Status and alarm indicators
- Separate thruster control key



Keys and indicators

Protection class	IP 66 - EN 60529
Temperature range	248K to 350 K (-25°C to +77°C)
Power supply	via bus cable to Marex 3D Controller
Vibration resistance	4g
Material	Plastic, black chromated

Marex 3D Joystick System – Upgrade for existing yachts

3D Controller



Mat.-No. 3460690410

- Vector control and thruster interface
- Solid metal housing
- 2-line-display



Applied EMC standards:

EN 60945:2002	Maritime Navigation and Radiocommunication Equipment and Systems - General Requirements - Methods of Testing and Required Test Results
Germanischer Lloyd (2003)	Guidelines for the performance of type approvals Test requirements for electrical/ electronic equipment and systems
Lloyds Register	LR Type Approval System Test specification Number 1

Protection class	IP 54 - EN 60529
Temperature range	253 K to 343 K \ -20°C - +70°C
Power supply	24VDC -25%/+30% \ 12VDC -20%/+30%
Vibration resistance	4g
Dimensions and weight	350 x 98.5 x 240 mm, 3.5 kg
Housing	Stainless steel
Interfaces	3 male, 1 female bus connectors type M12
	3 analog, 6 digital inputs
	4 analog, 6 digital outputs

Marex 3D Joystick System – Upgrade for existing yachts

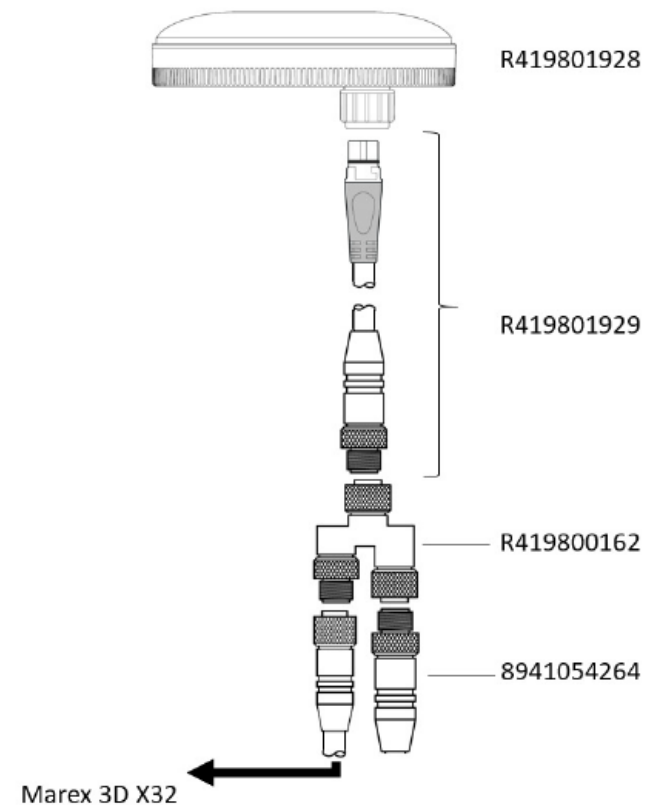
GPS Sensor



Mat.-No. R419801928

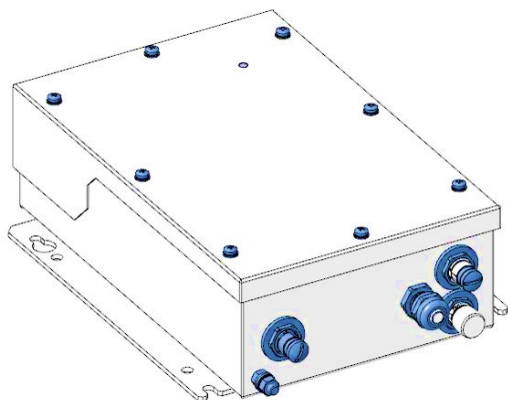
Protection class	Waterproof to IPx6 and IPx7
Calibration	Automatic
Power supply	12VDC
Communication	NMEA 2000 compliant

Connection and adapters



Marex 3D Joystick System – Upgrade for existing yachts

DP Controller (option)



Mat.-No. R419300745

The DP-Controller provides the optional 3D Hold and Virtual Anchoring control modes.

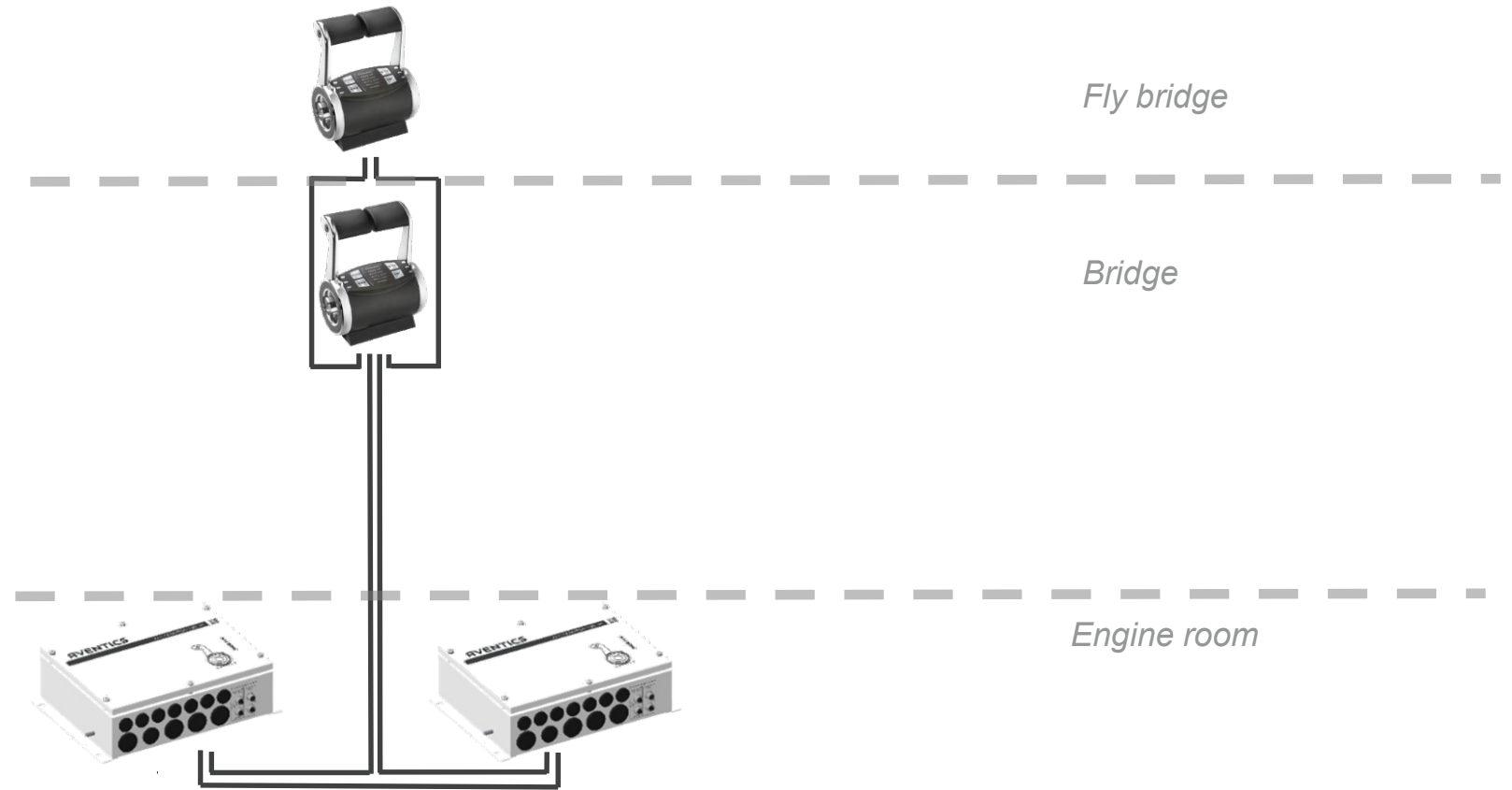
Protection class	IP 54
Ambient temp. range	-25..+70 °C
Power supply	9 - 32 VDC
Dimensions and weight	290 x 210 x 90 mm, 3.6 kg
Housing	Steel, powder coated
Relative humidity	up to 95% at 25 °C, up to 75% at 45 °C

Installation made simple



Marex 3D Joystick System – Upgrade for existing yachts

Typical Marex OS twin engine setup with two control stations at bridge and fly bridge.



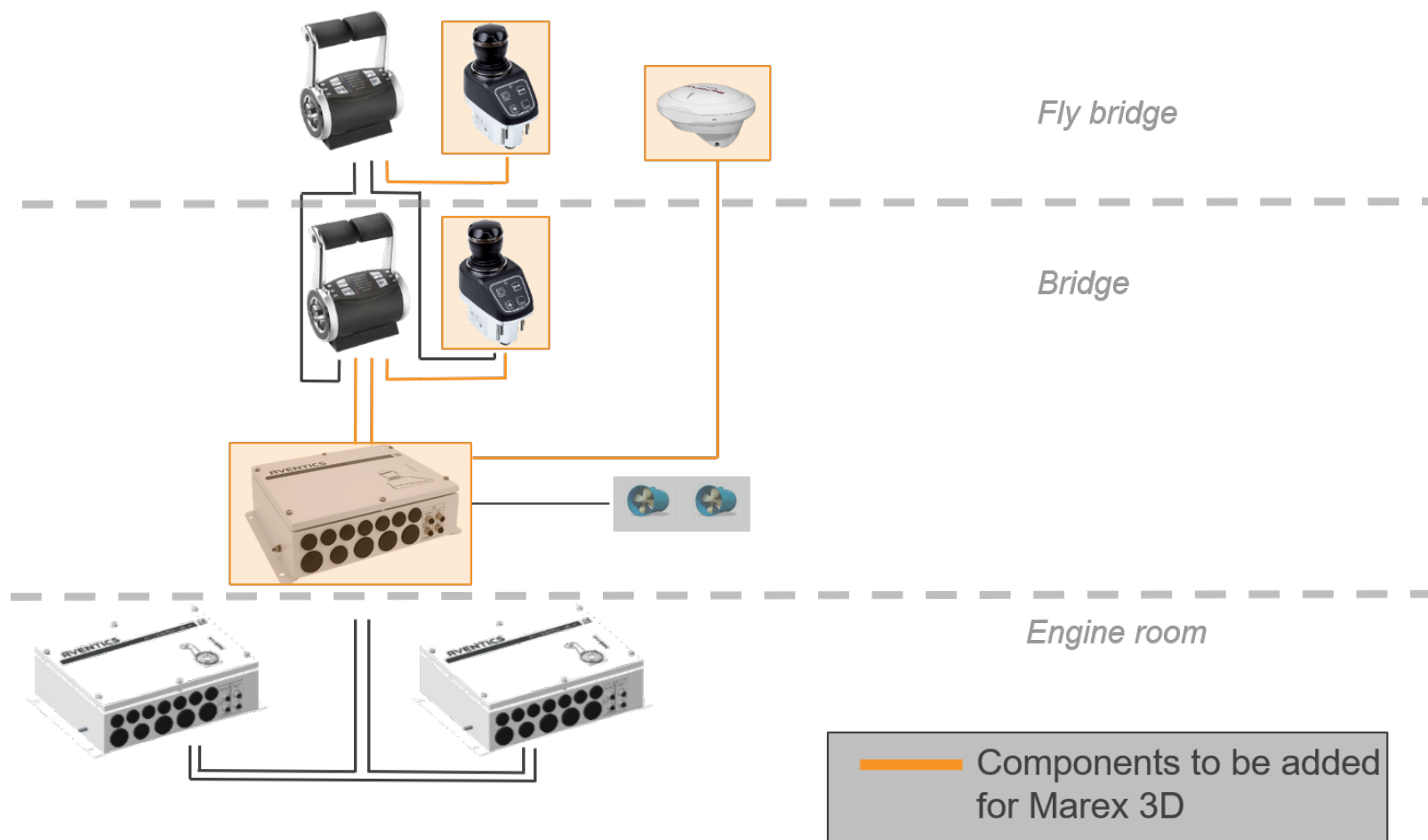
Standard Marex system setup for yacht applications

Marex 3D Joystick System – Upgrade for existing yachts

Same Marex OS system setup with integrated Marex 3D Joystick system

The joystick can be added next to any existing control head. Just one additional “intra-station” CAN bus cable is needed.

The Marex 3D Controller can be easily integrated anywhere within the existing control head CAN bus network!
→ Identify available installation area with access to thruster control. Usually at thruster panel on bridge.



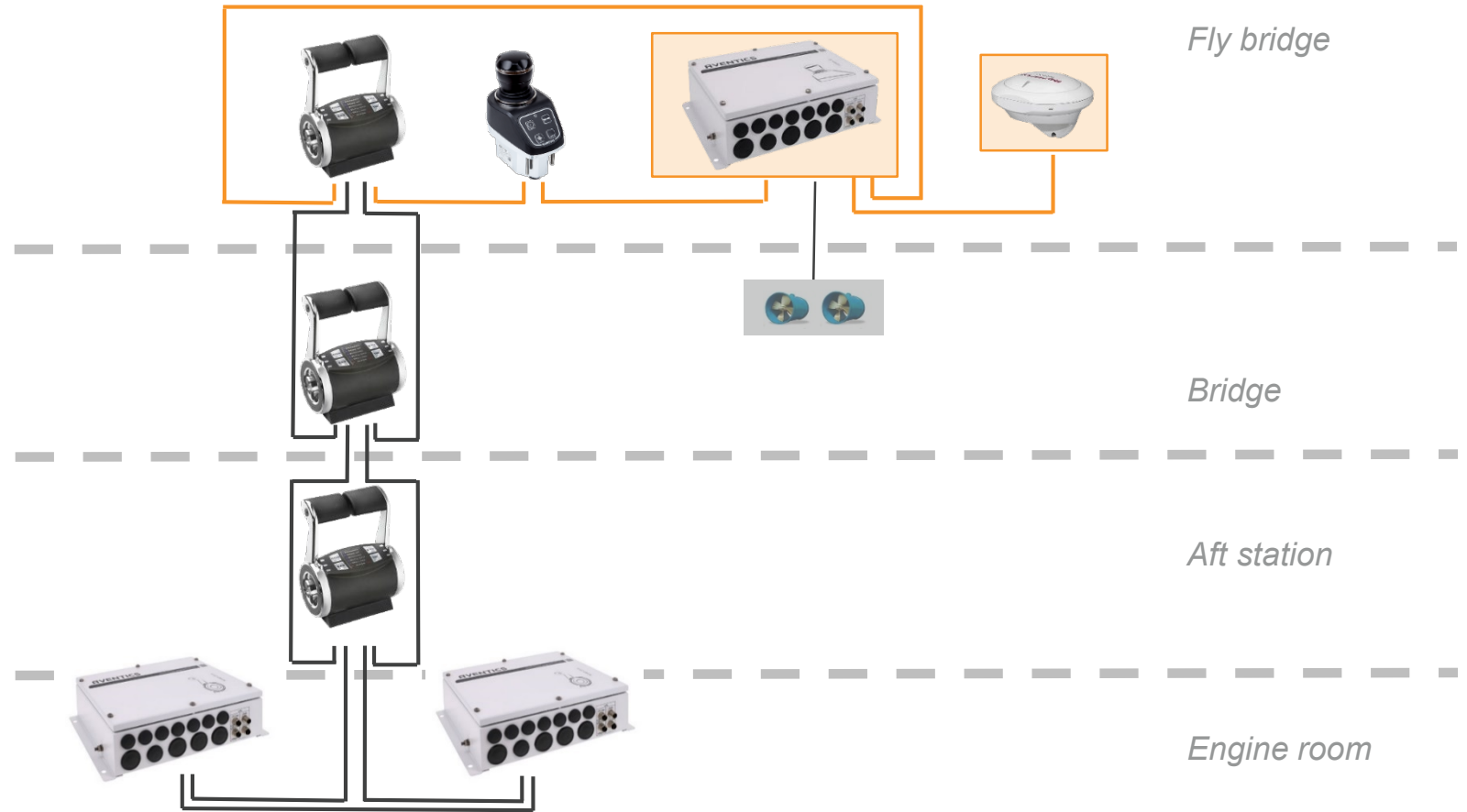
Marex system setup with integrated joystick system

Sales Pack: Marex 3D Joystick System Upgrade

Marex 3D upgrade example with three control stations at bridge, fly and aft.

The standard solution comprises four control devices (control heads and joysticks).

The example shows one joystick and 3D Controller integrated at the fly bridge.



Joystick add-on for fly bridge station

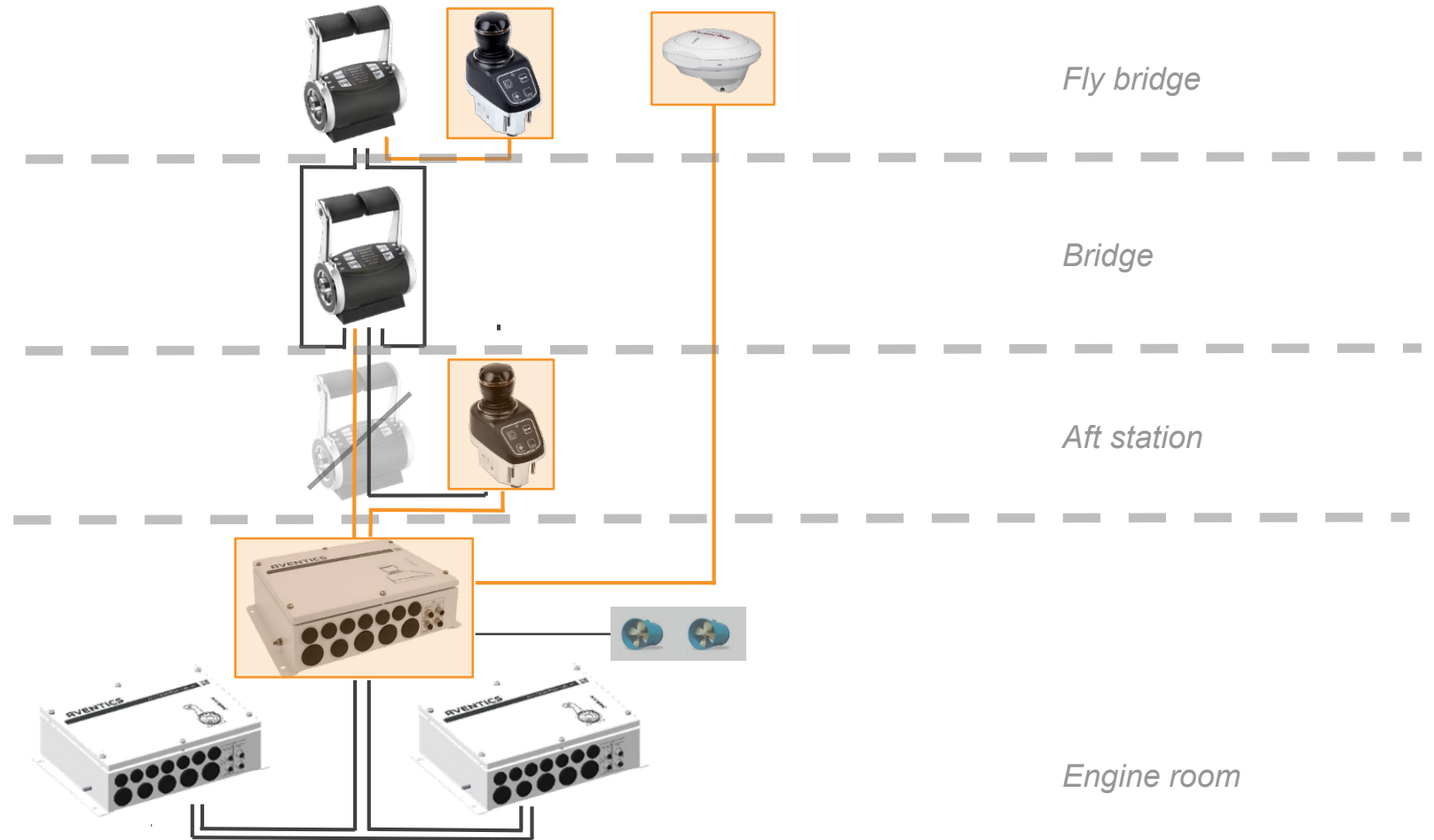
Sales Pack: Marex 3D Joystick System Upgrade

Marex 3D upgrade example with three control stations at bridge, fly and aft.

The example shows two joysticks integrated at the aft and fly stations.

The joystick at the aft station replaces the previously installed control head.

All setups shown are examples. Other arrangements are possible. Installations with more than 4 control devices require expert consultation.



Setup alternative with three control stations

Marex 3D Joystick System – Upgrade for existing yachts



The state-of-the-art joystick system easy to retrofit.

Commissioning included

Marex 3D requires commissioning. Emerson provides a network of skilled experts to support our customers. In addition, we have introduced a new service:

With Remote Assistance we support customers online and guide even inexperienced users through commissioning and troubleshooting.

4 h of Remote Assistance are included in the Marex 3D system package.

Remote Assistance – A new service to offer

Marex 3D Joystick System – Upgrade for existing yachts



AVENTICS™ Remote Assistance
Services for Marex Ship and Valve Controls

At Your Service

- We at Emerson have a long history of providing a range of services for AVENTICS™ Marex Ship and Valve Controls.
- From commissioning to fine tuning, troubleshooting, and training: Our service network is ready to support customers on site anywhere in the world.
- New service: Via Remote Assistance, we support our customers online in solving technical issues and guide even inexperienced users through commissioning and troubleshooting.

Your Benefits

- Get professional help no matter where your ship is located.
- Save time and money and profit from immediate support.
- Make the best use of service times by professional support from the original manufacturer's experts.

EMERSON

AVENTICS

CONSIDER IT SOLVED™



WEBEX
Adobe Connect
Teams



Internet



The state-of-the-art joystick system easy to retrofit.

How does Remote Assistance work?

Our service experts communicate with an electrician on board and guide the person through the steps of the commissioning.

Internet connection, standard laptop and mobile phone are required.

Software tools and adapters will be provided by Emerson.

The Marex sales & service network - Always by your side



Summary

Marex 3D Joystick System – Upgrade for existing yachts



The state-of-the-art joystick system easy to retrofit.

A good decision

- ✓ Substantial increase in comfort of operation
- ✓ Increased safety in maneuvering
- ✓ Attractive design
- ✓ Heading and DP mode options
- ✓ Implemented thruster control
- ✓ Extensive adjustment options
- ✓ Classification and OEM approved
- ✓ Single source for complete control system
- ✓ Easy installation, remote commissioning
- ✓ Service network

Marex 3D – The joystick upgrade for your yacht

Industry & Applications

MARINE

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