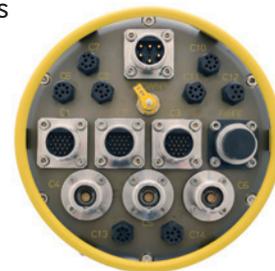# Matrix MK II +

The Matrix is a stand-alone fibre optic multiplexer and control solution, providing a simple, plug and play interface for a large array of sensors and equipment to any remotely operated system.

The system consists of a compact, one-atmospheric subsea unit rated for 3000 MSW, and a 19" rack mounted topside unit with touch screen and status for all channels on the screen.

The Matrix's internal control system provides individual 2-pole switching of all power outputs as well as DC power insulation monitoring. The DC power outputs are equipped with software resettable fuses to save operation time. All DC power outputs are equipped with voltage and current monitoring, which is also displayed in the topside controller.

Topside:	•	7 inch Linux based touch screen interface for control and diagnostics
	•	Status for all channels on screen
	•	Voltage and current monitoring
	•	Alarm / warning logging
	•	Operational hours logged
	•	Web browser based interface for mirrored control
	•	Ethernet connection for control
	•	19" 3U rack mount

| **Power input:** | • | Subsea: 47-63 Hz, 85-264 VAC / 120-370 VDC |
| | • | Topside: 90-265 VAC, 47-63Hz |

Power output:	•	2 x 48 VDC/24 VDC noise attenuated 6A - Software switchable
	•	1 x 48 VDC 3A/24V, 6A for 2x100Mbps Ethernet - Fixed output. Hardware switchable
	•	10 x 24 VDC 2A outputs 2-pole relay
	•	1 x 110 VAC 2-pole relay output
	•	Software resettable fuses on DC power output
	•	1200 W available DC power

Signal interface:	•	9 x RS232
	•	4 x software switchable RS232/RS485
	•	2 x Gb Ethernet
	•	3 x 100 Mbps Ethernet
	•	2 x single direction PECL
	•	3 x HD-SDI
	•	2 x 5V TTL trigger
	•	All serial and trigger interfaces are isolated

Mechanical properties:	•	Aluminium 6082-T6, hard anodized or Titanium Grade 5
	•	Dimensions: D 230mm (223mm) L 600mm
	•	Depth rating: 3000 MSW
	•	Shock and vibration: According to ISO 13628-6

Other:	•	Water ingress detection
	•	Two-stage noise attenuation filter on power input
	•	Humidity sensor subsea, trending available in software
	•	Temperature sensor topside and subsea
	•	DC ground fault detection system
	•	Fibre and SFP diagnostics
	•	Control board diagnostics

Connectors:

•	C1: Seacon 5506-2021-E	PECL, Gbps Ethernet, 24/48 VDC, RS232, Sync with C2
•	C2: Seacon 5506-2021-E	PECL, Gbps Ethernet, 24/48 VDC, RS232, Sync with C1
•	C3: Seacon 5506-2021-E	TTL 5V, 2 x 100 Mbps Ethernet, RS232/RS485, 24VDC/48VDC
•	C4: Seacon MINL-5515-75 Ω	Camera 1 (HD-SDI) RS232, 24 VDC
•	C5: Seacon MINL-5515-75 Ω	Camera 2 (HD-SDI) RS232, 24 VDC
•	C6: Seacon MINL-5515-75 Ω	Camera 3 (HD-SDI) RS232, 24 VDC
•	C7: Seacon MCBH8FS	RS232, 24 VDC
•	C8: Seacon MCBH8FS	RS232, 24 VDC
•	C9: Seacon MCBH8FS	Ethernet, TTL, 24 VDC
•	C10: Seacon MCBH8FS	TTL 5V, RS232, 24 VDC
•	C11: Seacon MCBH8FS	RS232/RS485, 24 VDC
•	C12: Seacon MCBH6FS	RS232, 110 VAC (depending on voltage supplied to the Matrix)
•	C13: Seacon MCBH8FS	RS232/RS485, 24 VDC
•	C14: Seacon MCBH8FS	RS232/RS485, 24 VDC
•	Fibre: Seacon OPT-G4-SM	Topside<->Subsea Comms
•	Power: Seacon 5506-2006	47-63 Hz, 85-264 VAC / 120-370 VDC

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