DRASS KOMMS SYSTEM

Drass Communication System (DRASS KOMMS) is a market-leading wired communication system that incorporates the latest advancements in technology and design, and complies with DNV GL, ABS and LR classification bodies.

To achieve both the best performance and reliability, the design philosophy of the system has been completely redefined by moving all the hyperbaric related elements inside the hyperbaric environment. The finished product is a standard atmospheric intercom system, a massive simplification in terms of overall design and procurement that enables the utilization of consolidated and modern technology at affordable costs.

Unique Features & Functionality:

- The inner area communication box uniquely incorporates a depth sensor, a feature not available anywhere on the market until now. Inclusion of a depth sensor ensures that each Helium Speech Unscrambler is capable of automatically setting the proper unscrambling algorithm for its actual depth with no need of intervention from operators at the consoles.

- The core of the wired system is a dedicated Ethernet network, based on Transmission Control Protocol/Internet Protocol (TCP/IP) interconnecting all stations in the ring. This provides the system with the necessary flexibility to interface each panel room with the rest of the vessel, and also ensures a greater level of system redundancy on each digital matrix during the transmission of control and audio signals.

- The simplicity of its design is such that one single brand of communication system can supply the vessel intercom and the diving intercom, unifying them on one single network. The system is designed to connect thousands of links, bringing together several different technologies at the same time: hardwired analog, wireless and several frequencies and modulation. Audio digitalization is fully 24 bit with VOX, gains and many other fully customizable parameters. Control panels can be traditional, colour and touch screen.

- The Vlink application is the only fully interconnected DHCP-compliant (Dynamic Host Configuration Protocol) virtual communication solution on the market today, being capable of accessing the intercom system using internet, WiFi/3G/4G connectivity on PC, tablet and even smartphones. Redundancy is provided as standard with dual power supply and dual controller, all hot swappable.

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DIGITAL MATRIX:

Saturation Digital Matrix, capable of connecting 128 stations, has a compact 3 RU package, with full redundancy of the master controllers and power supplies. The Matrix frame can supports cards, each with 16 channels. The chassis plugs in and plays anywhere, running on 90–264VAC at 50/60Hz. The chassis is built with hot-swappable components, and card status reporting.

The "Real- Time Online Configuration & Monitoring" function enables all matrix configuration switches seamlessly during normal activities - a unique feature not found on other commercial diving communication systems on the market.

The matrix can be easily connected to the configuration PC via Ethernet or serial link.
The full physical customization of the system is assured with the option to choose each specific component from a standard part list. For the configuration, a detailed number of link shall be specified.

Saturation matrix (for reference only)

TECHNICAL FEATURES	
Matrix size	16–128 ports, frame expandable up to 880 ports
Mechanical detail	H: 133.35mm 3U W: 482.6mm D:508mm Weight: 10.00kg
Audio Bits	24
Audio Levels	+8dBu Nominal, +20dBu Max
Color	Dark Grey
Ethernet Port and Intuitive User Interface	Yes
Frequency Response	15 Hz to 20 KHz +/- 1dB
Impedance	600 Ω
Input Impedance	22KΩ KΩ
Non-Destructive Download	Yes

Operating Humidity	95 % Non-condensing
Operating Temperature	-5°C to +55 °C
Redundant Controllers, Power Supplies and Remote Configuration	Yes
Regulatory Approval	UL, CSA, CE, VDE, FCC, PSE, REACH, RoHS, WEEE, CCC, KC, ACMA C-Tick, China RoHS, and IECEE CB Scheme
Relays	External GPIO-16
Storage Humidity	95 % Non-condensing
Storage Temperature	-40°C to +55 °C
Trunking and VOX on Input	Yes

K-PANEL:

K-Panel user interface, fits in a standard 19" rack and is 2U high. It has 32 lever keys: 30 keys are for talk/listen assignment, 1 key for call and 1 for headset / microphone / program selection and volume setup. The K-panel combines all the programmable features such as DSP and headset.

K-panel user interface (for reference only)

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TECHNICAL FEATURES	
Power requirements	AC input, 100-240 VAC, 50/60 Hz
Environmental	Storage: -40°C to +60°C ; Operating: -5° C to 55 °C
Mechanical detail	482.6 mm W x 76.2 mm H x 90 mm D with 3 kg weight
Certification	CE Compliance: EMC, EN55022 Class A, VCCI Class A, ICES-003, FCC Part 15 Subpart B Class A, AS/NZS CISPR22 Class A,Korean KN 22, EN 55024, Korean KN 61000-4, BSMI Class B; Safety: UL 60950-4, EN60950-1, CB Report, PSE
Input Connections	Optically Coupled 5-18 VDC on A+
LCD Display	**Active Area:** 120.10mm (wide) x 35.86mm (high) **Color Resolution:** 16-bit (64K)RGB color **Dot Resolution:** 576 x 172 pixels **View Angle:** 80 degrees (typical; all directions)
OMNEO Frequency Response	20Hz - 20KHz
Operating Temperature	-5° C to 55 °C
Output Connections	SPDT 1AMP @ 30VDC
Power Consumption	Nominal: 13W, Maximum: 18W, Maximum Volt Amp: 48VA
Power Supply	External DC
Storage Temperature	-20° C to 70 °C

INNER AREA COMMUNICATION UNIT FOR PUBLIC/PRIVATE USE:

The communication box is available in two versions:

- Inner Area Public Communication Stations are supplied as baseline configuration with one (ML-EL-E.T.-HLB) and two stations (TUP). They are fitted with ambient speaker and microphone, with optional headphone and boom microphone. They also include a call -pushbutton.

- Inner Headphone and Boom Microphone, including a call pushbutton to contact the control station for any reason.

All the inner area communication boxes are provided with their Off-gas Test Report, as required by the relevant and most recent health rules of class requirement and applicable guidelines DNV-OS E402 Sec.3 B110.

Close to the communication unit, a free space enables connection with the Drass Multimedia System.

TECHNICAL FEATURES	
Electrical interfaces	24Vdc power supply up to 500mA
RJ-45 connector	for audio interfaces
Speaker output	3W

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Table of commercial codes for each configuration proposal:

COMMERCIAL CODE	DESCRIPTION
97CD-02-04-01-00-00	Public Comm TB24-4DDC-2T-iSAT
97CD-02-04-02-00-00	Public Comm TB24-6DDC-2T-iSAT
97CD-02-04-03-00-00	Public Comm TB18-4DDC-2T-iSAT
97CD-02-04-04-00-00	Public Comm TB18-4DDC-2T
97CD-02-04-05-00-00	Public Comm TB18-3DDC-2T-iSAT
97CD-02-04-06-00-00	Public Comm TB12-2DDC-T
97CD-02-04-07-00-00	Public Comm TB12-2DDC
97CD-02-04-08-00-00	Public Comm TB18-3DDC-1T-iSAT
97CD-02-05-01-00-00	Public Comm +Air Dive TB24-4DDC-2T-iSAT
97CD-02-05-02-00-00	Public Comm +Air Dive TB24-6DDC-2T-iSAT
97CD-02-05-03-00-00	Public Comm +Air Dive TB18-4DDC-2T-iSAT
97CD-02-05-04-00-00	Public Comm +Air Dive TB18-4DDC-2T
97CD-02-05-05-00-00	Public Comm +Air Dive TB18-3DDC-2T-iSAT
97CD-02-05-06-00-00	Public Comm +Air Dive TB12-2DDC-T
97CD-02-05-07-00-00	Public Comm +Air Dive TB12-2DDC
97CD-02-05-08-00-00	Public Comm +Air Dive TB18-3DDC-1T-iSAT
97CD-02-02-01-00-00	Private Comms

Chart with configurations of Drass standard baseline: