It's time to upgrade

KONGSBERG

MRU product line continuation

End-of-life for older MRU models

The blue Motion Reference Unit (MRU) models, serial numbers 19000 and below, are now all obsolete and replaced by the following 5th generation MRU models:

- MRU 5v
- MRU Hv
- MRU 3v (replacing MRU Z)
- MRU 2v
- MRUDv
- MRU E

As published in the End-of-life note of October 2012, support for these older versions will be limited after November 2023.

As we have past this date, we kindly ask you to consider upgrading the affected MRU version, as repair and recalibration of these units will now be limited.

KONGSBERG understands that every operation, in every vessel, is unique. To ensure that we have the technical solution that is right for you, we have developed a broad range of attitude sensors that deliver unparalleled performance for a variety of applications. This MRU 'product family' encompasses everything from units developed for dedicated applications, to those that can be used in multiple applications on the same vessel.

110-0078890/A - June 2024

JB3 Junction Box

Junction Box

The now discontinued 4th generation MRU was supplied with the JB1 Junction Box. The new 5th generation MRU is supplied with the JB3 Junction Box.

A new 5th generation MRU can be connected directly to the older JB1, hence replacing the JB1 is not needed. However, be aware that the COM2 and analog outputs will not be available with the JB1. In addition, configuration of the 5th generation MRU must be done through the service kit (MRU-T-Configkit-V).

Brackets

The new 5th generation MRU is compatible with all exisiting MRU mounting brackets from the 4th generation MRUs.

Subsea bottles

The 5th generation MRU is physically shorter than the 4th generation MRU. This means that you will not be able to fit a new MRU into an old subsea bottle, hence these will also have to be replaced.

Cables

Both generations of MRUs have the same physical connector, hence cables do not directly need to be replaced. Note: As functionality/interface has changed between the two generations, please ensure that connections are referred to the 5th generation MRU.

Note:

- Analog signals are not available directly from the 5th generation MRU.
- Old subsea cables (MRU-E-CS4) are not compatible with the new 5th generation MRU when Ethernet communication is used.

5th generation MRU and mounting bracket

Interfaces

Many output variable names have changed - please consult the Installation Manual for the 5th generation MRUs.

Summary of changes

	4th gen.	5th gen.	Not changed /both
Connector			x
Input serial lines	(AUX1, AUX2)	(COM3, COM4)	x
Cables for serial comm			x
MRU Junction Box			
MRU-E-JB1	x	(serial comm. only)	
MRU-E-JB1P	x	(serial comm. only)	
MRU-E-JB2	x	(serial comm. only)	
MRU-M-JB3		x	
MRU Cables			
MRU-E-CS1 (3, 5, 10, 15, 20, 30 m)	x	(serial comm. only)	
MRU-E-CS5	x		
MRU-E-CS8 (3, 10, 30 m)		x	
MRU-E-CS10 (6, 10 m)		x	
MRU-E-DP1 (MRU D only)	x	(serial comm. only)	
MRU-E-DP2 (MRU D only)		x	
MRU-E-HYD (10, 20 m)			x
MRU mounting brackets			
MRU-M-MB1			x
MRU-M-MB3			x
MRU-M-MB4		x	
MRU-M-MB5		x	
MRU-M-MB6		x	
MRU cables subsea			
MRU-E-CS4	x		
MRU-E-CS7 (15, 30, 45 m)			x
MRU-E-CS9 (15, 30, 45 m)		x	
MRU subsea bottles			
MRU-M-SB5	x		
MRU-M-SB6	x		
MRU-M-SB7	x		
MRU-M-SB9		x	
MRU-M-SB10		x	
MRU-M-SB11		x	
MRU-M-SB12		x	
MRU-M-SB14		x	
MRU-M-EX1		x	

Signals available from MRU	4th gen.	5th gen.	Not changed /both
Ethernet		x	
RS-232			x
RS-422	(only via JB1)	x	
MRC (WinMRC and DOSMRC), serial line	x		
MRC+, Ethernet		x	
PFreeHeave		x	
Analog channels	x	(only via JB3)	

Internal time delays over MRU generations

Sensor interface delay (t_a)	5 ms	2.5 ms	
Main processing time (t_b)	2.5 ms	<1 ms	
Digital line request response time (polled out) (t_c)	10 ms ± 10 ms	2.5 ms ± 2.5 ms	
Output data preparation (t_d)	0.8 + n • 0.2 ms	0 ms	
Digital line request response time (polled output) (t_e)	2.5 ms ± 2.5 ms	0 ms	
Transmission delay on serial line (t_f)			(n + l) • 40000/b ms
Polling message transmission delay (t_g)			50000/b ms
Time delay by cyclic digital output at MRU connector (4 variables) ($t = t_a + t_b + t_d$)	9.1 ms	<3.5 ms	
Group delay on angular rate (variable 1, 2 and 3)	25 ms	30 ms	

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