

DATA SHEET BRUNVOLL MAR-EL AS

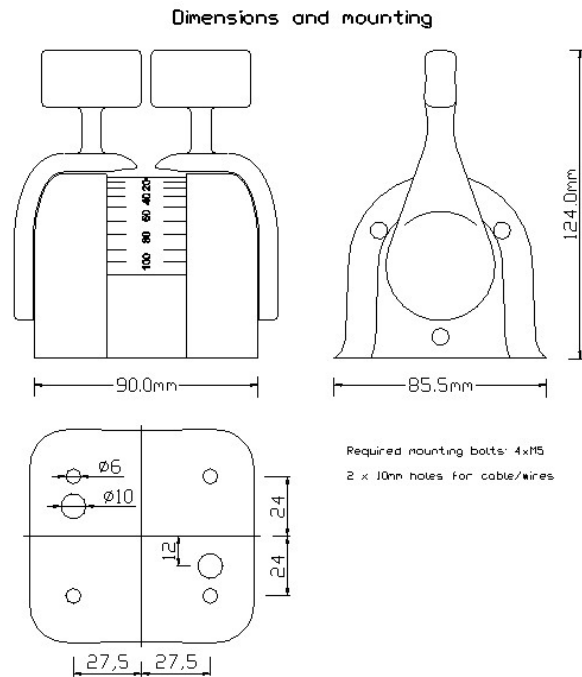


▪ **General description**

The command controller is designed for ship maneuvering primarily to give reliability and where handling functionality are important. This controller is supplied with plastic resistive potentiometer. Longitudinal or transverse handles motion, one or two handles, and 100% or ±100% handle range with mechanical center point. Built for maritime market. Suitable for engine control and propeller pitch control. Dimmable backlight scale.

Brunvoll Mar-El AS Storvegen 48, NO-3880 Dalen, Norway DT: +47 35 07 58 00 F: +47 35 07 58 01 E: mar-el@brunvoll.no W: brunvoll.no E No: 914 192 137 VAT B: DNB Bank ASA	Author	Product name:	Data sheet no.	Doc. Rev.	Page
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▪ Mechanical layout



▪ Technical specification

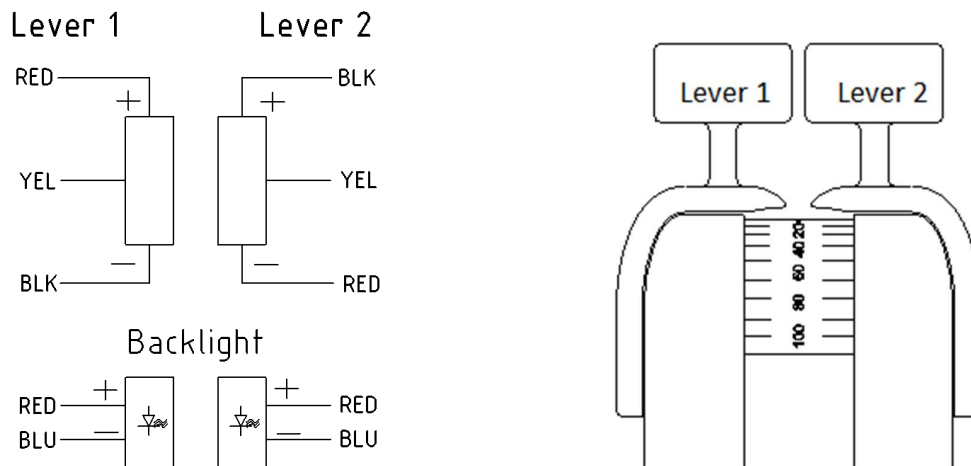
Mechanical angle 350°	±80°
Resistance ±20%	14.3 Ω per degree
Accuracy of Max range	0,6%
Hysteresis (repeatability)	Less than 0.03°
Power dissipation at 20°C	0.003W per angular degree
Applied voltage Max VDC	Max 68VDC
Resolution	Virtually infinite
Output smoothness	To MIL-R-39023 grade C 0.1%
Insulation resistance	Greater than 100MΩ at 500Vdc
Operating mode	Voltage divider only
Wiper circuit impedance	0.5MΩ Operation with wiper circuits of lower impedance will degrade the output smoothness and affect the linearity
Sensor life	20 million operations (10 x10 ⁶ cycles)
Standard potmeter	5KΩ potentiometric

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▪ Lever Mechanical Parameter

Side covers	Anodized aluminium
Lever arm	ABS Plast
Operation Temperatur	-40° to+70°
Scale	Self-adhesive on acrylic tube
Life expectancy	500.000 full operations
Potmeter operation	Direct
Enclosure:	IP56, IP22
Standard termination	10 flying-leads
Pot. leads lenght	0,35 m 0,34 mm ²
Backlight lenght	0,35 m 025 mm ²
Lever mount	Use 4 x M5 socket head cap screws and M5 washer
Backlite w/ options	Integrated led for 24Vdc/ 12mA, 5Vdc/ 52mA, 3.3Vdc/ 50mA. Serial connection for 11mA

▪ Connections



▪ Detail user information






Protection from threats such as salt, mist, water, lubricants and virtually all chemicals.

▪ Ordering Information

Examples of standard versions of the MCL2-P control lever. The pictures below show the visual differences. Specifications for the non-visual properties (d-e-f) are found in 'How to specify'.

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Longitudinal motion

MCL2-P-SLR-C-L0-e-f		MCL2-P-SLR-C-L1-e-f			
<ul style="list-style-type: none"> • One handle • Right side • Fwd. curved • 0-100% 		<ul style="list-style-type: none"> • One handle • Right side • Fwd. curved • ±100% 			
MCL2-P-DL-C-L0-e-f		MCL2-P-DL-C-L1-e-f		MCL2-P-DL-C-L2-e-f	
<ul style="list-style-type: none"> • Two handles • Fwd. curved • Both 0-100% 		<ul style="list-style-type: none"> • Two handles • Fwd. curved • Both ±100% 		<ul style="list-style-type: none"> • Two handles • Fwd. curved • 0-100% left • ±100% right 	

Transversal motion

MCL2-P-STL-S-T0-e-f		MCL2-P-DT-S-T0-e-f			
<ul style="list-style-type: none"> • One handle • Straight • Lower side • ±100% 		<ul style="list-style-type: none"> • Two handles • Straight • Both ±100% 			

How to specify

General: **MCL2-P-a-b-c-e-f**. Example order code: **MCL2-P-DL-CS-L2-2-0**.

<p>a: SLL - Single handle, Longitudinal, Left side. SLR - Single handle, Longitudinal, Right side. DL - Double handle, Longitudinal. STL - Single handle, Transversal, Lower side. STU - Single handle, Transversal, Upper side. DT - Double handle, Transversal.</p>	
<p>b: C - Curved handle (double: both). S - Straight handle (double: both). CS - Left/upper curved, Right/lower straight. SC - Left/upper straight, Right/lower curved.</p>	<p>e: 0 - 3,3VDC backlight. 1 - 5VDC backlight. 2 - 24VDC backlight. 3 - serial 11mA backlight.</p>
<p>c: L0 - Longitudinal scale 0-100. L1 - Longitudinal scale 100-0-100 (i.e. ±100). L2 - Longitudinal scale 0-100 left, 100-0-100 right. T0 - Transverse scale 100-0-100 (i.e. ±100).</p>	<p>f: 0 - Standard sealing (indoor use only). 1 - IP56 protection.</p>

Left/Right for longitudinal motion, Upper/Lower for transversal motion. Curved handle means forward curved for longitudinal motion and towards right for transverse motion. Mechanical center point at 0 when 100-0-100 scale. All scales white on black with red backlight.

Note: Left/Right is Lever 1/ Lever 2. Upper/Lower is Lever 1/ Lever 2

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