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ravioli SpA

ISO 9001: 2000
RAVI 9105

Joystick Controllers COMPACT Series

Joystick Controllers
COMPACT Series - GMC types

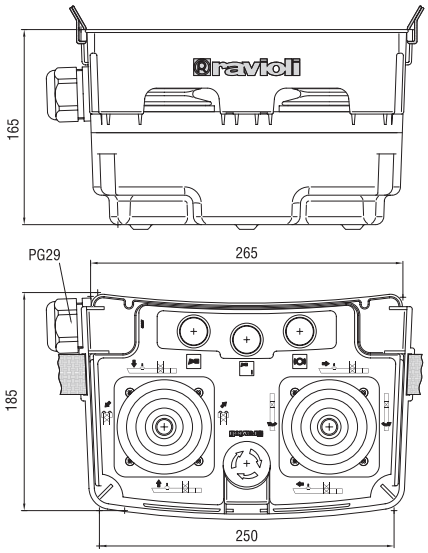
Main Features

The range of joysticks and COMPACT controller units are suitable for controlling hoisting and lifting equipments, and particularly cranes, by means of contactors or inverters.
They can be supplied in an open version (MW and MC types) and mounted on fixed areas such as pulpits and seats.
They can also be supplied in a portable box, COMPACT series, in which case they come with: 2 MC2 joysticks, 1 emergency stop button, a series of push-buttons and a shoulder-belt.
This equipment is the result of RAVIOLI's long experience in the field, combined with in-depth ergonomic studies for innovative designs and materials, using state-of-the-art technology.
Particular attention has been paid to easy handling of the device and to the mechanical aspects, in order to guarantee the suitability of the product for heavy duty work in industry.
All the materials in direct contact with the environment are resistant to atmospheric agents, oils, temperature changes and crashes.
The rubber gaskets ensure excellent protection against dust and liquids.
The COMPACT series of controller units has been designed to guarantee the ergonomic protection of the levers against accidental contact.
The optimised space inside the units ensures that all connections can be made easily and quickly, and also simplifies the maintenance.
The emergency stop button is built to comply with UNI EN 418 standards.
Kindly turn to page 3 for the other features of the joysticks.

TECHNICAL FEATURES

Compliance with EC Directives	2006/95/EC 98/37/EC 2004/108/EC
Compliance with Standards	CEI EN 60204-1 CEI EN 60947-1 CEI EN 60947-5-1 CEI EN 60529 CEI EN 60439-1 UNI EN 418 CEI EN 50013
Maximum operating voltage	250 V~
Temperature range	Working -25°C +60°C Storage -40°C +70°C
Insulation	Class II (double insulation)
Protection degree	IP65
Operating positions	All positions
Cable entry	PG29
Weight	2 Kg. portable controller unit 750 gr. joystick only
Data relating to push-button unit	AC15 6A 230V / DC13 1,5A 24V Clamping screws
Homologation	CE

Dimensions



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Joysticks
Type MC - MW

Main Features

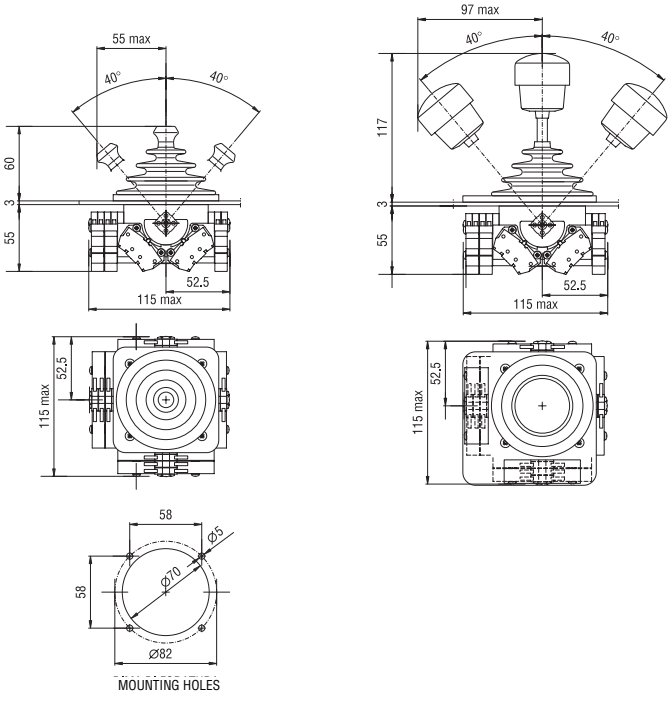
The joystick is the lever unit used as operating part, which can be moved along one or two movement axes, either separately or simultaneously. It can also be moved orthogonally up to 4 positions on each axis after the central 0-point.
The joysticks have been designed with the following safety criteria:
- electrical locking mechanism in central position; a mechanical lock is also available for MW type
- deadman's handle in central position.

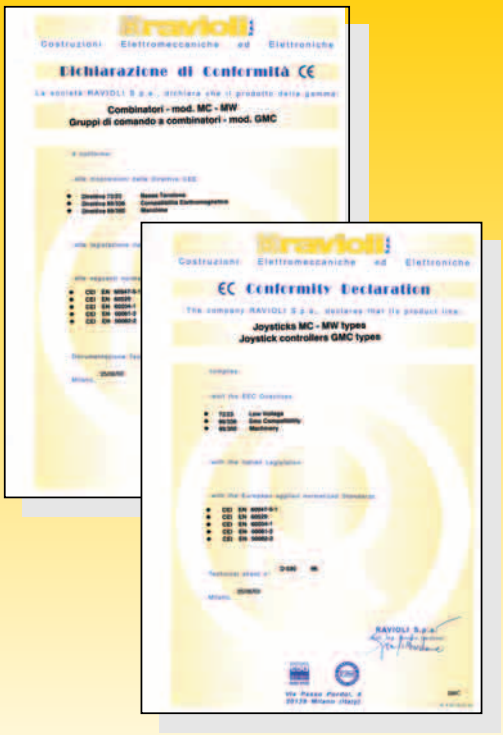
Maximum lever movement : 40° in any direction.
These units are supplied in the MC version as spare parts for the GMC unit, and in the MW version are provided with a handle and mechanical safety device.
The joysticks are designed so that an optional potentiometer can be applied to each axis.
The NC switching elements feature guaranteed opening (CEI EN 60947–5–1) and have silver alloy double-breaking contacts.
Gilt contacts can be supplied on demand.

TECHNICAL FEATURES OF THE SWITCHING ELEMENTS

Compliance with Standards	CEI EN 60947-5-1						
Insulation voltage	660 V ~						
Thermal current	10 A						
Mechanical life	10^6 operations						
Max. connectable cable section	2x1,5 mm² or 1x2,5mm²						
Terminals	Secured clamping screw						
Use limits	AC15	Ve	(V)	24	48	120	240
		Ie	(A)	10	10	6	3
	DC13	Ve	(V)	24	48	125	250
		Ie	(A)	3	1,5	1	0,5
Homologation	CE						

Dimensions





For Your Safety

The joysticks and the COMPACT controller units comply with the current safety rules, and in particular:

- 98/37/EC Machine Directive
- 2006/95/EC Low Voltage Directive
- 2004/108/EC EMC Directive
- CEI EN 60204-32 Lifting Machinery Safety Regulations
- CEI EN 60947-1 Low- voltage switchgear and controlgear
- CEI EN 60947-5-1 Control circuits devices and switching elements

Guaranteed Quality Product

The joysticks and the COMPACT controller units are guaranteed by our CE Certificate of Conformity, available on request, in which it is declared that such product was created by RAVIOLI in accordance to defined and recognised Safety Regulations, and in compliance with the Quality Standards stated in our UNI EN ISO 9001-2000 Quality System Certificate.

Installation and maintenance instructions

Installation of the GMC controller units and MW joysticks must be carried out by qualified personnel in compliance with current safety standards. Electrical current must be removed from the equipment before carrying out cabling. Cabling must be effected in compliance with the electrical diagram for the controlled machine. After installation has been completed, all commands must be checked to ensure that they are operating properly. Avoid prolonged use with oils and acids, as this may cause damage to the products.

Cabling of GMC controller unit

For cabling proceed as follows:

- remove the bottom (A) by loosing the screws (B)
- insert the cable (Ø15÷25mm) in the PG29 cable entry (C) provided in the case
- tighten cable and cable entry into cover hole
- carry out cabling inside
- close the case, by tightening the screws (B)

Installation and cabling of Joysticks

For installation and cabling proceed as follows:

- make holes in compliance with mounting plan (see page 3)
- loose and remove screws (D)
- remove plate (E)
- remove the rubber cover (F) and insert the joysticks into the hole Ø 70mm
- replace plate (E) at bottom of rubber cover (F)
- replace and tighten screws (D)
- carry out cabling in accordance with diagram

MAINTENANCE

A program of periodic maintenance is strongly advised to ensure perfect working order of the controller unit and the joysticks. All operations must be carried out by authorised personnel and original spare parts must be used. Any part showing defects or alterations should be replaced immediately, even outside the maintenance program, in order to ensure maximum safety of operation at all times. In particular it is necessary to:

- Clean the equipment periodically, using non aggressive products and compressed air for the external parts, and compressed air only for the internal parts
- Check cabling and that all screws and the contact clamps are adequately tightened
- Check that all gaskets, rubber parts and external parts are in good working order
- Check correct working of the equipment by carrying out a series of test operations

Any alteration of the parts of the product will make manufacturer's guarantee decline.
RAVIOLI declines any liability for damages deriving from incorrect installation or improper use of the product.

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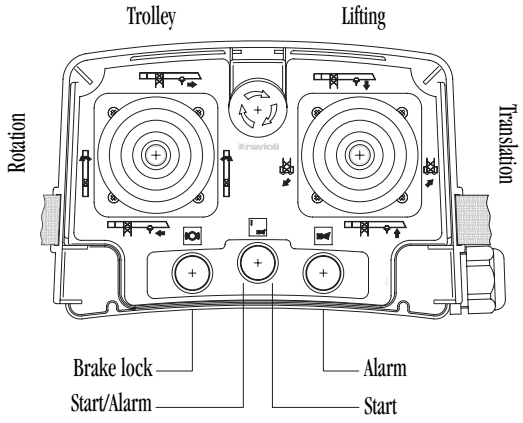
Types and Codes for ordering

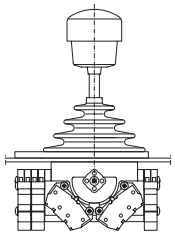
Controller units
Standard versions



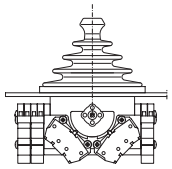
In the versions:
- ref. A: Start and Alarm buttons
- ref. B: Start/Alarm and Brake lock buttons

Type A Code	Type B Code
D GMC3313A	D GMC3313B
D GMC3333A	D GMC3333B

Joysticks
Standard versions



MW type with handle



MC type without handle

No. axes	Type MW Code	Type MC Code
1	D MW1-03	D MC1-03
1	D MW1-04	D MC1-04
2	D MW2-13	D MC2-13
2	D MW2-33	D MC2-33

Composition of Product Code

D G M C Y Y Z Z X

- X — refers to buttons (A or B)
- Z Z — no. of lifting speeds
- Y — no. of translation speeds
- Y — no. of rotation speeds
- C — no. of trolley speeds
- M — product name
- G — product name
- D — product name

D M W X – Y Y

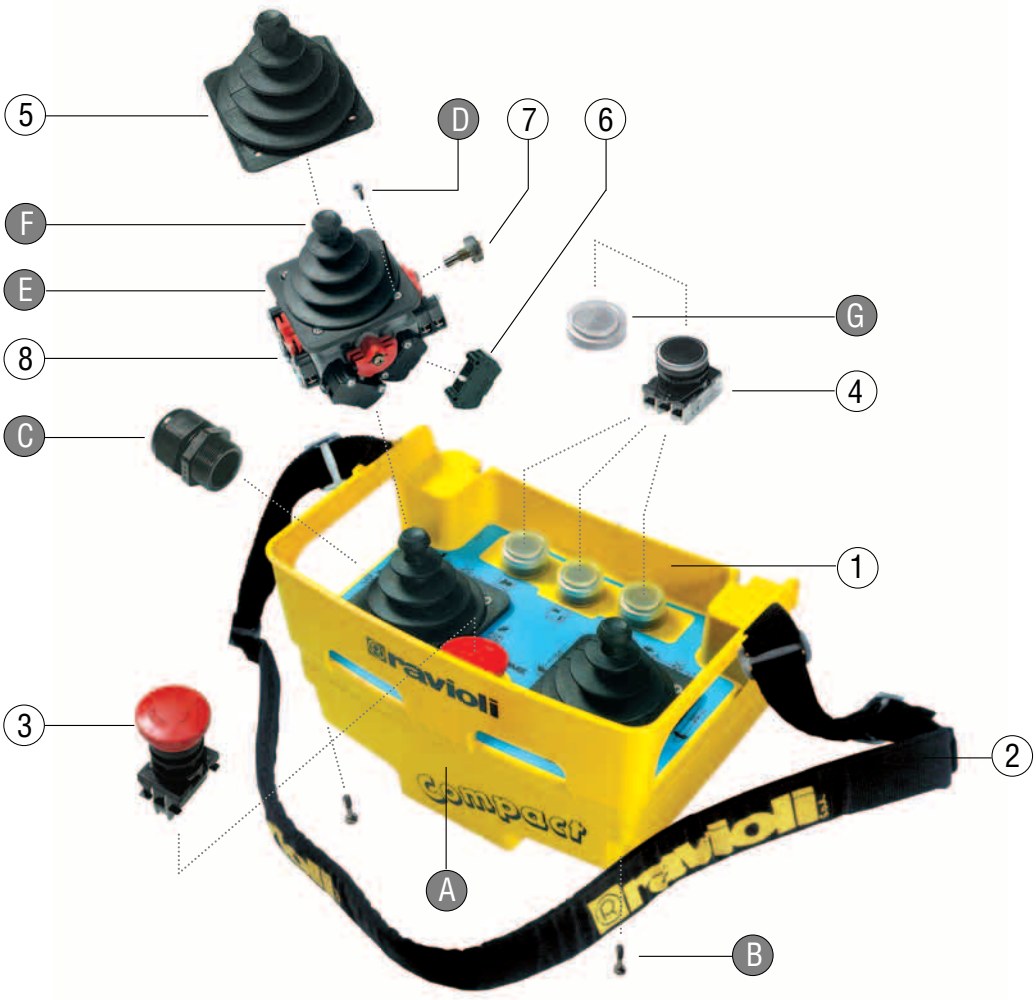
- Y — no. of positions on axis 2
- Y — no. of positions on axis 1
- X — no of axes
- W — product name
- M — product name
- D — product name

Special Executions

Special performance controller units can be made on request.

The insertion diagrams for standard joysticks are shown on page 6.
Special diagrams can be provided on request.

Spare Parts and Fittings

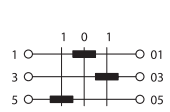


Spare parts

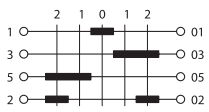
Pos.	Code	Description	
1	D 41681	Perforated case for GMC unit	
2	D 42746	Shoulder belt	
3	D 41682	Emergency stop button kit	1NC
4	D 41683 D 41684 D 41685	Start or alarm button kit Start / alarm button kit Brake lock button kit Complete with hood (G)	1NO 2NO simultaneous 1NO 1NC
5	D 41674 D 41624	Rubber cover for MC Rubber cover for MW	
6	D 41631 D 41662	Switching element for MW or MC Switching element for MW or MC	1NC 1NC gilt
7	D 41649	Potentiometer 10KΩ+10KΩ	
8	D MWX-YY D MCX-YY	Joysticks - see page 5 -	

Insertion diagrams

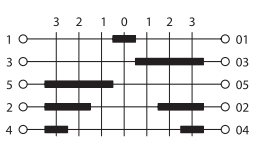
The joystick's switching elements are activated by differently shaped cams, in relation to the type of diagram to be made.
The insertion diagrams shown here are standard.
Special diagrams can be provided on request.
The numbers indicated refer to the pair of terminals or contacts for each axis.



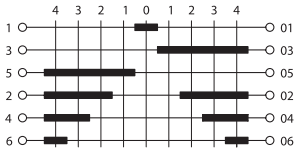
MS1



MS2



MS3



MS4

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