

MICOM AUTODOOR

Automatic Sliding Door Operator

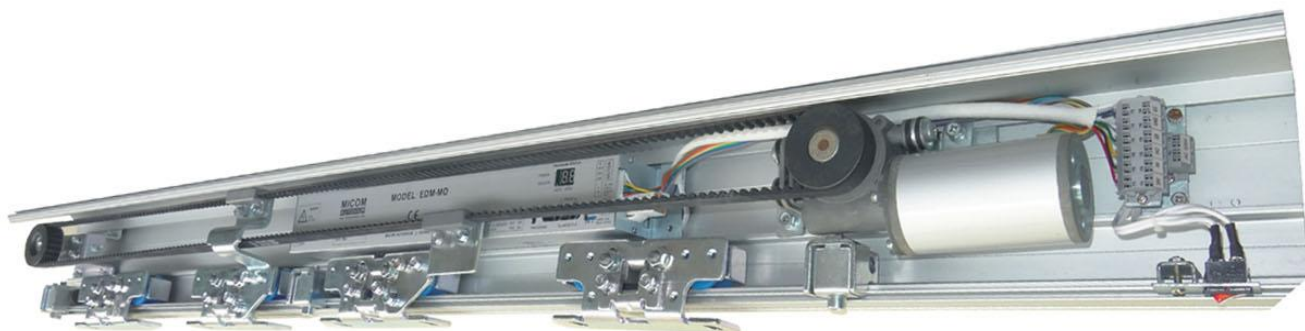
Model: EDM MD

Original Instructions



EN16005 Compliant

INSTALLATION MANUAL



OSAKA – JAPAN

www.micomautodoor.com

REVISED DATE: JUNE 2014 No. MD0001 Ver1



WARNING: Avoidance of Injury, Electric shock and Fire

- Safety Beams **MUST** be installed to ensure threshold safety.
- Installation and adjustment must be performed by approved personnel only.
- Repair and/or alteration to the control box and motor are prohibited.
- The power should be switched off during installation and service.
- Power supply of 200~240V AC only to used.



CAUTION: Avoidance of Injury and Malfunctions

- Do not switch off power supply whilst door(s) in motion.
- Ensure sliding door travel area is clear before switching power switch ON.
- Keep fingers, clothing & hair, clear of belt and all moving parts.
- Protective gloves should be worn when handling metal parts.



CAUTION: Avoidance of Injury during Maintenance & Disposal

Risk of crushing or impact by a falling door panel or other solid object onto a person can be avoided by laying any heavy object horizontally onto the floor, to one side of the working area.

Risk of slipping, tripping or falling can be avoided by placing any removed objects to one side of the working area. A safe working area should be maintained by cordon or other temporary boundary.

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1. Product Description

1.1 Introduction

EDM-MD Series is designed to provide a high quality yet economical automatic sliding door solution for easy open and close operation whilst offering variable function adjustment of single or double door leaves up to 100kg per leaf. Installation and set up can be simply achieved in several steps. Door stroke is memorized by simply pushing the RESET button one-time during initial installation or for servicing requirements.

Automatic operation is upon sensor or switch activation with safety beam threshold safety input active when the doors are in operation. Together with many other functions available, operational parameters can be adjusted to suit each individual installation through an easily accessible LED visual display found on EDM-MD Control box face.

Connections for sensor and other inputs are located as either an independent input terminal on the rail or by adding MICOM Sensor and Battery Monitoring board (SMB) for EN16005 Compliance. (See 1.2)

MICOM inbuilt safety features and quality components will ensure EDM-MD Series is safe and reliable, while providing you with assured long term service.

Main Features

- Economical & Cost Effective Sliding Door Solution
- Universal Power input 200-240VAC
- Door Capacity 100kg per leaf
- Door Speed 500mm/s
- Memorized one time door stroke
- Easily accessible Sensor and threshold safety Inputs
- 24V DC Power Output for Accessories
- Safe & Long Term Operation Guaranteed
- LED Digital Control Display
- Simple Door Parameter Setting
- Door Speed & Braking Adjustment
- Energy Saving (% Open) Function
- Delay Function for Electric Lock
- Ratchet or Flip-Flop Function
- Wide Parameter Adjustments

- CE & EN16005 COMPLIANT (European Regulation – Option outside of EU)

1.2 EN16005 Compliance (European Regulation – Option outside of EU)

MICOM SMB is a Sensor and Battery Monitoring System which offers compliance with EN16005 across our range of EDM Series automatic sliding door operators. It is compatible with models EDM NII, GII/EZ & MD Series.

MICOM SMB is a modular system for enhanced automatic door safety. Simple to install, whilst offering added safety for pedestrian protection and multi-functional features which include:

- Conforming to EN16005
- Individual Sensor Monitoring & Safety
- Battery Functions & Monitoring
- Key Function Selector Switch
- Locked / Exit / Automatic / Hold Open, plus Emergency - Anti Panic Open)
- Individual Sensor Inputs & Wiring
- LED Indicator (Mode & Error)
- Emergency Open Input
- 24VAC Power Input (Isolated Transformer)
- Night Mode (Switch) Input
- Secure E-Lock Functions
- Designed for use with a new range of sensors such as:
BEA IXIO-S & Optex OA-Axis-T

1.3 Delivery

MICOM EDM-MD Series can be supplied in several formats as follows:

- **Complete Operator** consisting of: Base Rail, Cover, Control Box, Connection Harness, Motor Gear Box, Connection Terminal, End Covers, Tooth Belt, Belt Bracket Link Assembly, Belt Connection Single & Double Door, Belt Tightening / Idle Pulley Assembly, Hanger Roller Brackets x4 and Stopper x 2.
- **Complete Operator** - Standard Length:
Single Leaf - 2100mm
Double leaf - 4200mm
- **FULL KIT – NOT ASSEMBED** consisting of: Control Box, Connection Harness, Motor Gear Box, Connection Terminal, Tooth Belt (7M), Belt Bracket Link Assembly, Belt Connection Single & Double Door, Belt Tightening / Idle Pulley Assembly, Hanger Roller Brackets x4 and stopper x 2.
- **Rail & Cover Materials Only** - Standard Length:
Single Leaf - 2100mm
Double leaf - 4200mm
- **SHORT KIT (Retro-Fit YII- ZII/GII Rail UNDER DEVELOPMENT)** consisting of: Control Box, Connection Harness, Motor Gear Box Assembly, Connection Terminal and Belt Tightening / Idle Pulley Assembly (Without Rail, Cover, End Covers, Tooth Belt or Hanger Roller Brackets).

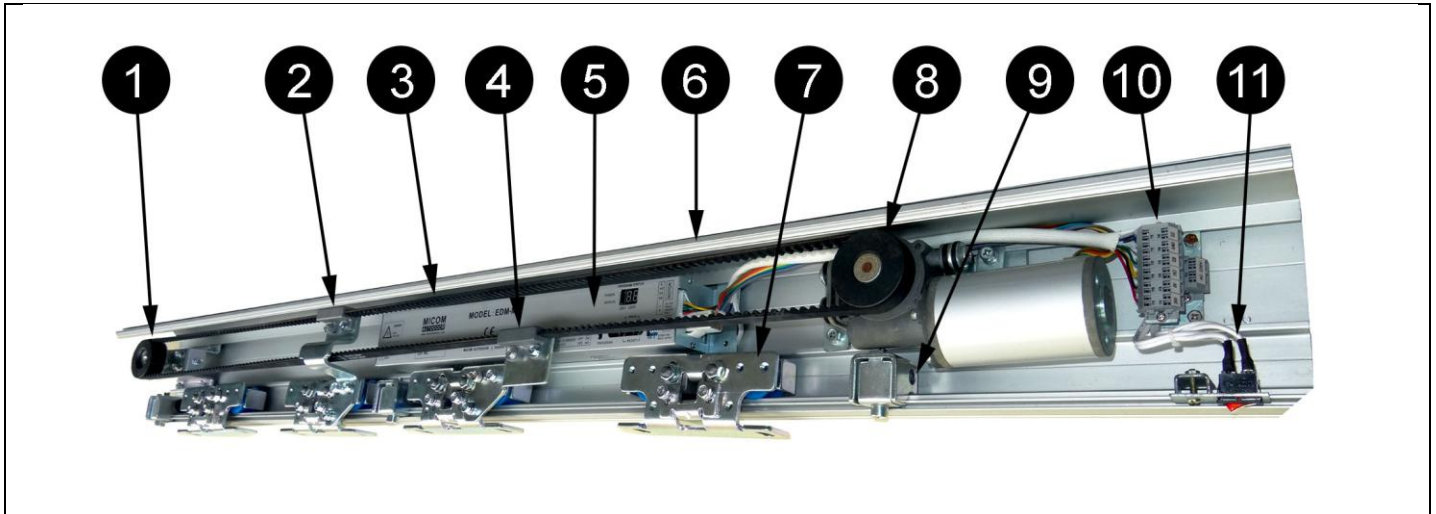
Accessories

- Sensor / Threshold Safety - Microwave or Infrared detection sensors and safety beam products available.
- Function Selector Switch – 4 Position Rotary switch available (Closed, Exit, Auto, Open & Emergency Exit Option)
- Door Profile Solutions – Various Fixed and Moving profile designs available without glass.
- Frameless Glass Brackets – Fitting Brackets for 10mm and 12mm Glass thickness available without glass.
- Floor Guides – Various floor guides for framed and frameless glass doors available.

For more information visit: www.micomautodoor.com or E-mail: info@micomautodoor.com

2. MICOM EDM MD Series

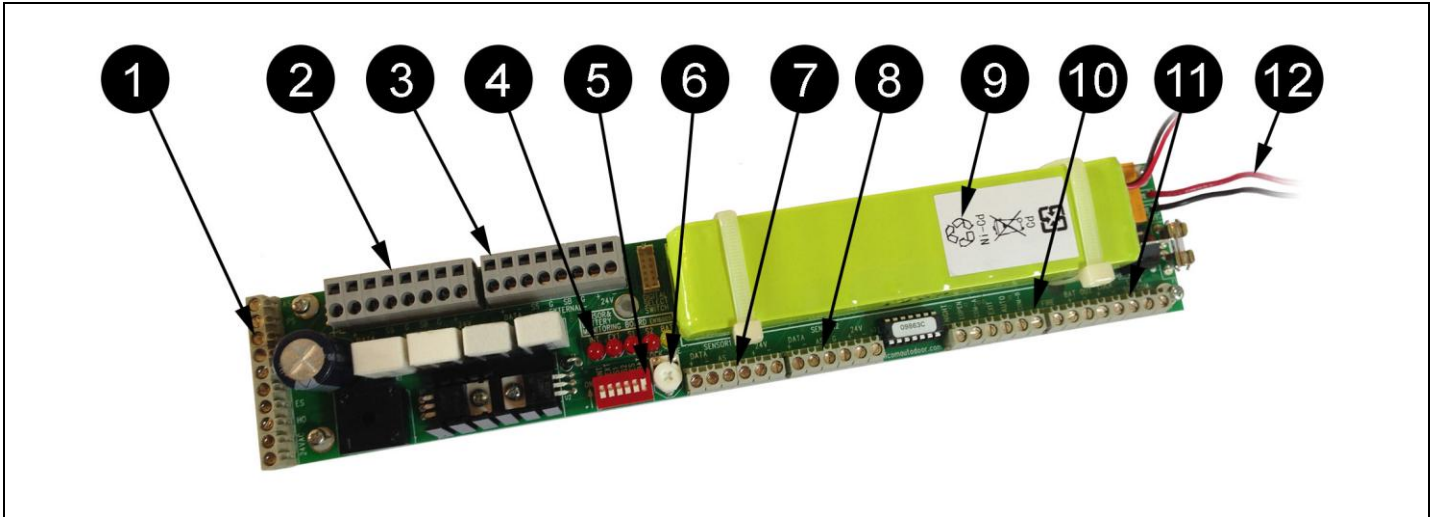
2.1 EDM MD Complete Operator Parts



No.	Description
1	Belt Tightening / Idle Pulley Bracket Assembly
2	Hanger Roller Bracket with Belt Bracket Link Assembly (Double Leaf)
3	Tooth Belt
4	Hanger Roller Bracket with Belt Bracket Link Assembly (Single Leaf)
5	EDM MD Control Box
6	Base Rail with Side Cover (Cover not shown)
7	Hanger Roller Brackets (Double Roller as standard)
8	EDM MD Motor Gear Box Assembly
9	Door Stop
10	Connection Terminal
11	Power On Off Switch

2.2 EDM MD – SENSOR & BATTERY MONITORING BOARD (SMB) - EN16005 COMPLIANCE
(European Regulation – Option outside of EU)

2.2.1 SMB








No.	Description
1	SMB output to Control Box
2	Internal Sensor Input
3	External Sensor Input
4	LED Error Indicator
5	DIP Switch
6	E-Lock Timer
7	Side Screen Sensor Input 1
8	Side Screen Sensor Input 2
9	Battery Pack
10	Selector Switch Input (4 wire)
11	E-Lock & Battery Output
12	Battery Connection

2.2.2 SMB - Function Selector Switch - 4 Position Key

Note: If SMB is not used, please refer to section 10.1 for MICOM Function Selector - 4 Position



Symbol	Description
	Closed / Locked
	Exit Only
	Automatic
	Hold Open
Exit	Exit – In case 'Locked' is selected
	Anti-Panic – In case doors are closed by hand after battery open

3. Installation

3.1 Base Rail Installation

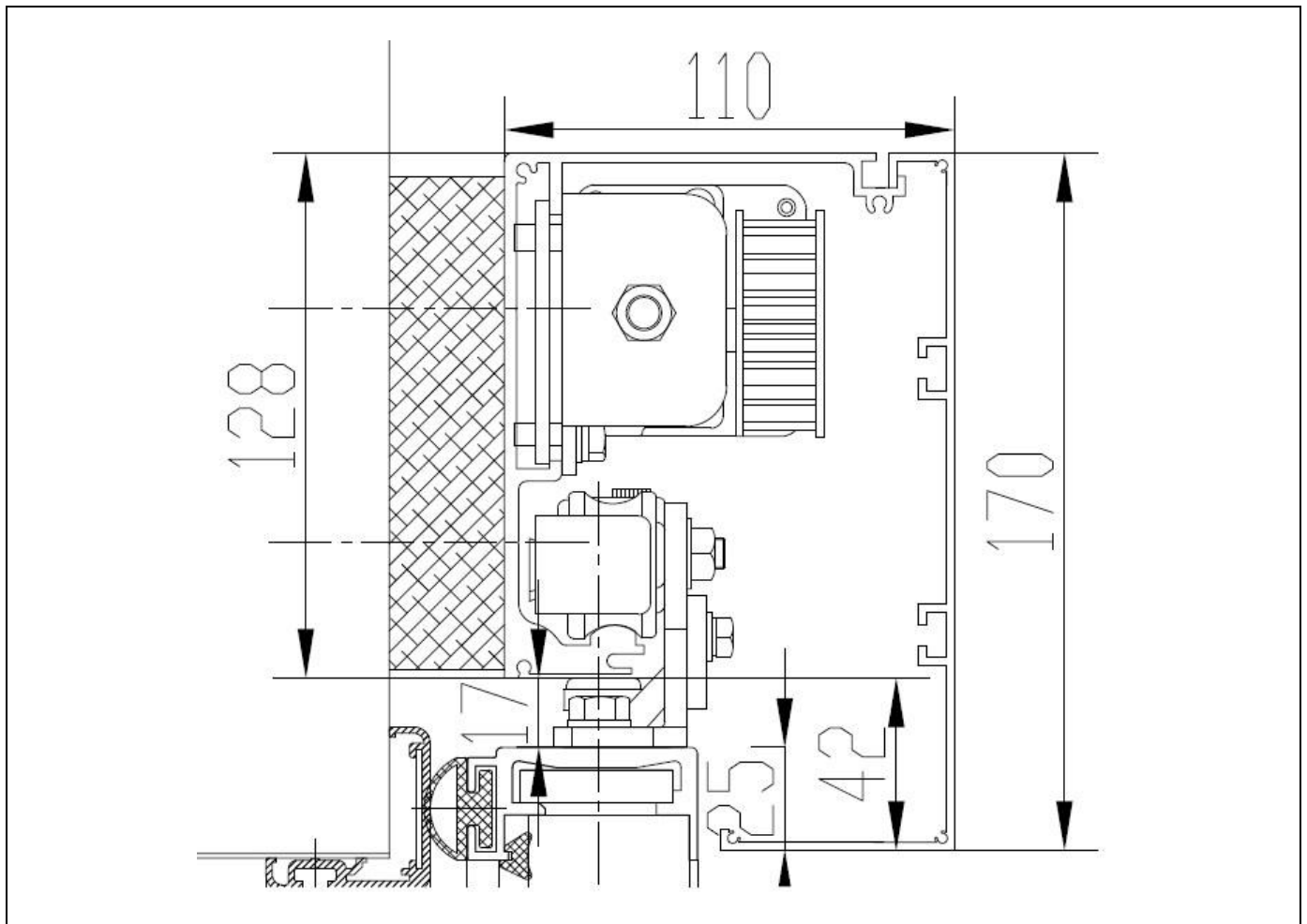


CAUTION: Reduce risk of injury. Ensure installation area is clear of tripping hazards. Ensure work area is clear of pedestrians and there is a restricted pedestrian access at all times during works being carried out.

Positioning and Installing base rail:

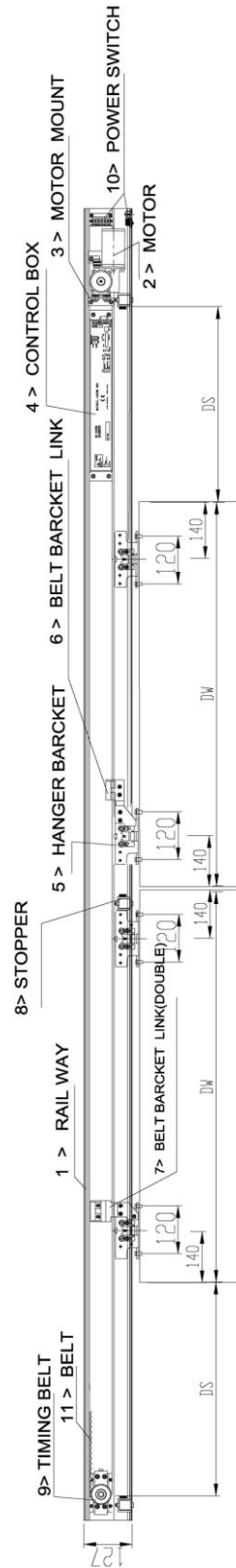
- Refer to below EDM MD Drawing to find correct measurement of base rail position.
- Ensure hanger roller brackets are above level of entrance.
- Ensure floor clearance.
- Measuring from top of door profile, allow space for hanger roller bracket (as shown) plus floor clearance.
- Secure base rail with appropriate fixings.

3.2 EDM MD – Side View Section



Measurements in mm

3.3 EDM-MD Front View



3.4 Mounting Doors

- Position hanger roller brackets on top of door leaf.
- Ensure hanger brackets are aligned, then secure in place.
- Loosen hanger bracket retainer to mount doors on rail.
- Mount doors on rail.
- Adjust and secure hanger bracket retainer 2mm from underside of base rail.
- Adjust door height for floor clearance.
- Check door alignment to eliminate gaps before tightening fully.

3.5 Smooth Operation

- Check opening and closing of door leaf with power off.
- Doors must run smoothly without friction or noise.
- Doors should be easy to push open and close.
- Check clearance from finished floor level (open & close).

3.6 Power On

Caution – Before switching the power on:

- Rail and doors are correctly installed
- Ensure tooth belt is tightened
- Main parts are correctly installed - Refer to wiring diagrams. Sec. 8.

The power switch is located to the right of motor fixed to the underside of the base rail.

4. Teaching / Learning Operation



CAUTION: Ensure that the door travel area is clear before pressing RESET in order to memorize the door stroke.

4.1 Teaching / Learning

After installation is completed, in order to memorize the door stroke by a teaching or learning stroke. The following steps are required.

- Set the slide switch (Prog / Run) down to “PROG”.
- Press and hold the “UP” button & “SET” button together. The RED and GREEN LED will flash once the RESET is complete.
- Set the slide switch up to “RUN” and the door will start to close at low speed.
Starting from the fully closed position will ensure the doors are correctly optimised.
- From the fully closed position, the door/s will open at low speed.
Here EDM MD controller is memorizing the stroke by this cycle. Once at full open, the teaching / learning stroke is complete. The door/s will then close at normal speed.

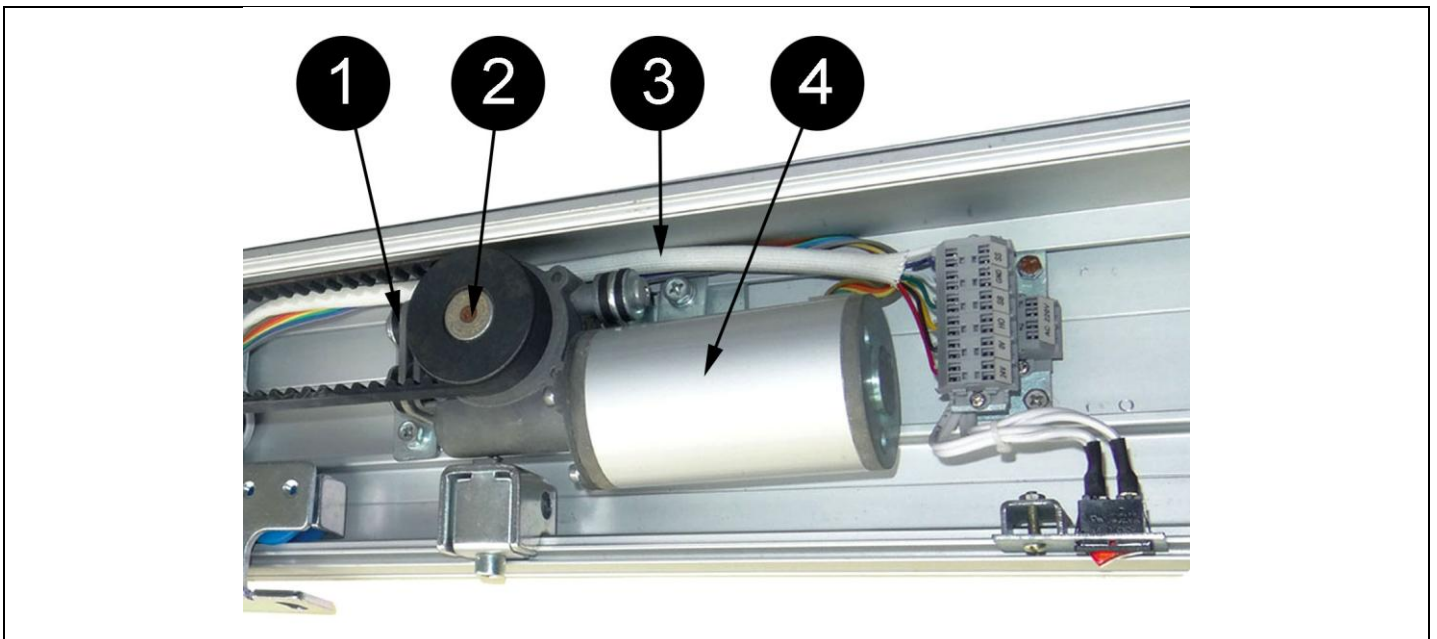
Note: Teaching data will be stored within the control unit, even if the main power is off. Once the mains power is turned on, the stored data will be reloaded and door will continue its operation with need to re-learn it's stroke.

In case of a malfunction or in the event that the stored data is affected by electric noise during its operation, the controller can be recovered by another RESET

We recommend taking a note of the Parameter settings before RESET is made.

5. Set Up & Operation

5.1 Motor Gear Box Assembly EDM MD



No.	Description
1	Motor Mount Base with Vibration Proof Rubber
2	Motor pulley
3	Connection Harness to EDM MD Control Box
4	Brushless DC Motor

5.2 Control Box Assembly EDM MD



No.															
1.	Power Input Plug in 200~240VAC														
2. RUN/PRG switch	Slide switch to change from RUN mode to PROGRAM mode														
3. TEST / UP & SET Buttons	<p>TEST Button – Used to check the basic function of the operator when servicing or installation. Activation signal for Test open cycle (RUN mode only)</p> <p>UP & SET Button – Used when in PROGRAM mode only. (To entre Programming mode: Slide switch from RUN to PROG.)</p> <p><How to RESET> <table border="0"> <tr> <td><u>UP</u></td> <td><u>SET</u></td> </tr> <tr> <td>ON</td> <td>ON</td> </tr> </table> : Hold both buttons to RESET. Set to "RUN", then teaching starts.</p> <p><How to change setting> <table border="0"> <tr> <td><u>UP</u></td> <td><u>SET</u></td> </tr> <tr> <td>ON</td> <td>OFF</td> </tr> <tr> <td>OFF</td> <td>ON</td> </tr> <tr> <td>ON</td> <td>OFF</td> </tr> <tr> <td>OFF</td> <td>ON</td> </tr> </table> : Value is fixed (LED 1/2 lights are on) (Repeat this to change setting)</p>	<u>UP</u>	<u>SET</u>	ON	ON	<u>UP</u>	<u>SET</u>	ON	OFF	OFF	ON	ON	OFF	OFF	ON
<u>UP</u>	<u>SET</u>														
ON	ON														
<u>UP</u>	<u>SET</u>														
ON	OFF														
OFF	ON														
ON	OFF														
OFF	ON														
4. LED Display	<p>LED Display is a visual display for the installer in order to correctly set up and operate MICOM EDM MD Operator.</p> <p>LED DISPLAY: LED1 : Function / Application LED2 : Parameter Value</p> <p>Green LED : Power indicator Red LED : Sensor indicator (SS or SB)</p> <p>'RUN' Mode When in 'RUN' mode, the operator will run as normal. LED display will show: a. Number of open cycles. (Memory is cleared by main-power off). b. Error indication Error Code: E0 : Door travel distance during teaching cycle is too short (less than 150mm).</p>														

	<p>E1 : Open error (Obstruction during the opening cycle) E2 : Closer error (Obstruction during the closing cycle) E4 : Loose belt (Longer stroke than stored data) E6 : E-lock error (no un-lock signal input)</p> <p>'PROGRAM' Mode When in PROGRAM mode, changes to operational parameter values can be made. (To entre Programming mode: Slide switch from RUN to PROG.) See setting table. Sec 6.</p>
5.SW4	<p>Note : After changing setting of SW4, turn the main power OFF/ON to save adjustment.</p> <p>SW1 : Opening direction SW2 : RS function (Ratchet or Flip Flop) SW3 : CE (Closed End) Output ON – Closed end output signal is given whilst door is open OFF – Closed end output signal if given whilst door is closed SW4 : E-lock (set OFF when E-lock is connected (YES))</p>
6.Motor Plug	Connection of Motor to Control by Plug in
7. Sensor Harness	Connection of Sensor Harness to Control by Plug in

6. Setting

6.1 Basic Setting Code (Set the slide switch to PROGRAM)

Code	Function	Volume	Factory setting	Remarks
LED1		LED2		
0	Hold Open Time	1~F	1	1-9sec, A:10sec, B:20sec, C:30sec, D:40sec, E:50sec F:60sec.
1	Open High Speed	0~A	7	Setting of open high speed
2	Open Low Speed	0~A	4	Setting of open low speed
3	Open Brake Force	0~A	5	Setting of open brake force
4	Open Force	0~A	5	Setting of open motor torque
5	Close High Speed	0~A	5	Setting of close high speed
6	Close Low Speed	0~A	4	Setting of close low speed
7	Close Brake Force	0~A	5	Setting of close brake force
8	Close Force	0~A	3	Setting of close motor torque
9	Partial Open Width	0~3	1	Partial open is available by HO signal. 0:35%, 1:50%, 2:65%, 3:80%
A	Open Delay (*)	0~3	1	0 : No delay time after un-lock signal is confirmed. 1/2/3 : Below delay time from SS is activated to door starts to open. < 1:0.1sec, 2:0.5sec, 3:1.0 sec.> When set 1/2/3/, door opens regardless of whether unlock signal. If E-Lock can output unlock signal, it must be set "0".

(*) :

This function is available when SW4-4 is set OFF
When SW-4 is set ON, door starts to open upon SS without delay.

6.2 Hold Open Time

Value	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Open Time (sec.)	1	2	3	4	5	6	7	8	9	10	20	30	40	50	60


6.3 Partial Open (Energy Saving) %

Value	0	1	2	3
Partial Open	35%	50%	65%	80%

6.4 Open Delay (E-Lock)

Value	1	2	3
Time Delay (After Activation)	0.1 sec	0.5 sec	1.0 sec

7. Obstruction Detection

	CAUTION: To avoid risk of injury to pedestrians, it is always recommended to install threshold safety devices such as safety beams or types threshold protection.
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In the even an object is placed in the threshold and not detected by safety devices; the following obstruction detection function will ensure safe operation as follows:

7.1 During closing travel

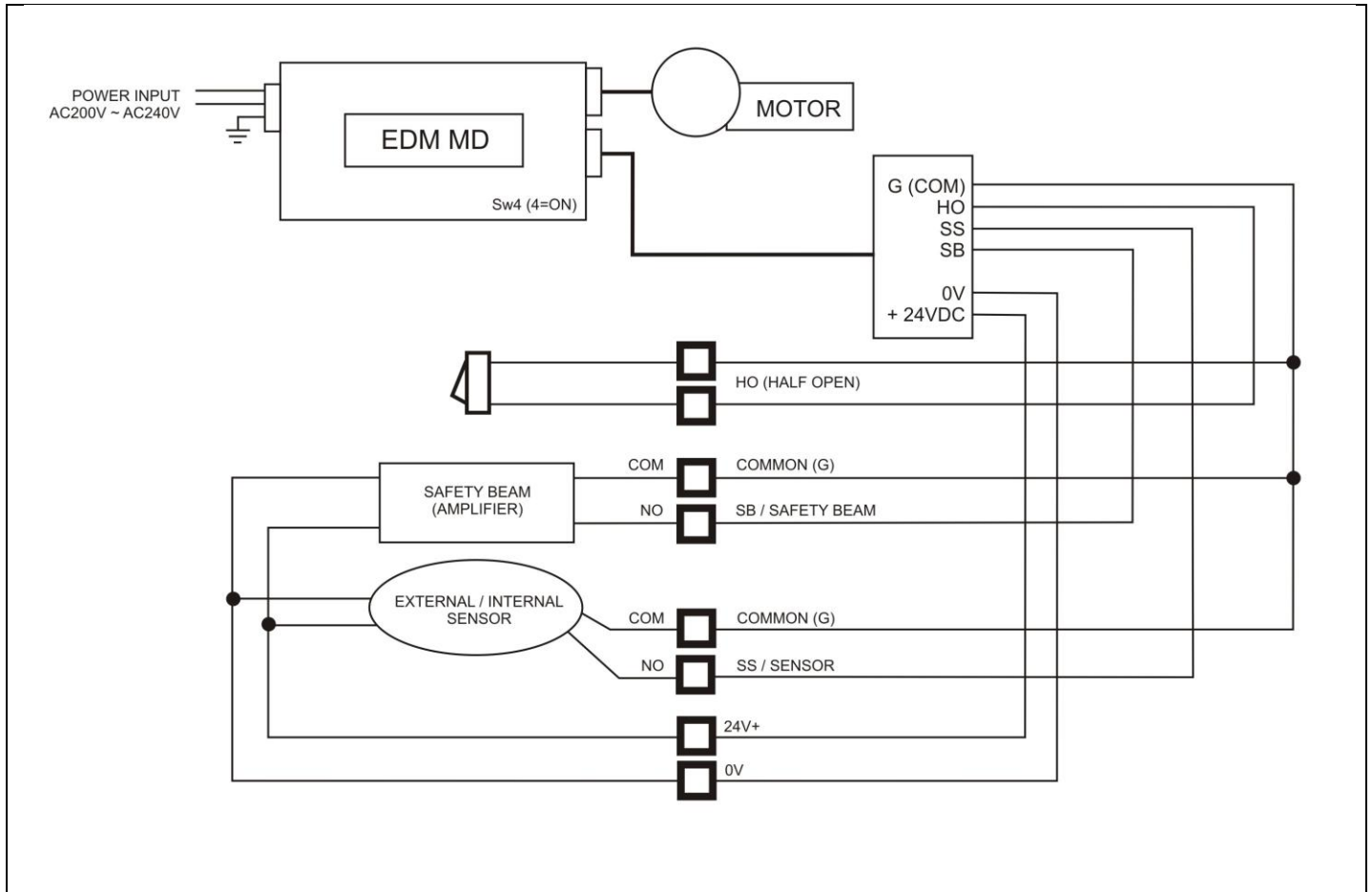
- On contact with object, doors will reverse at normal speed. After open time, door will close at low speed.
- Object is not cleared, door will stop and the controller shows E2 error.
- Object is cleared and doors continue to full closed. Here doors recover to normal status and await next activation signal.

7.2 During Opening travel

- On contact with object, door stops at the position and show E1 error.
- Recovery from E1 & E2 error: The operator will recover automatically after 15sec.

Once the object is cleared, the door will recover automatically upon the next activation.

8. EDM MD Basic Wiring



9. Specification

Model	MD-S	MD-D
Application	Single	Double
Door Weight (max)	100kg	100kg x2
Power Consumption	200 - 240V AC, 0.7A	
Power Output	24V DC, 300mA	
Manual door opening/closing force – during power failure	24.5 ~ 39.2N (2.5 ~ 4kgf)	29.4 ~ 49.0N (3~5kgf)
Open Door Speed	Adjustable 160 - 500mm/s	
Close Door Speed	Adjustable 160 - 400mm/s	
Brake Adjustment	0-F value (16 steps adjustable)	
Partial Open	35%, 50%, 65%, 80% (4 steps adjustable)	
Motor	DC 24V / 55W Brushless	
Operating Temp & Humidity	0°C – 50°C / 30% - 85%	

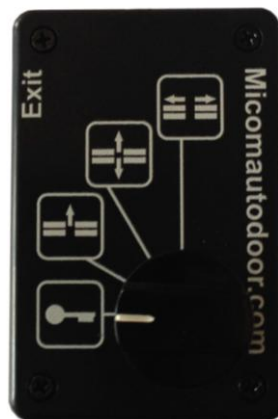
10. Optional Accessories

10.1 MICOM Function Selector Switches - 4 Positions with Rotary Knob





MICOM Function Selector Switches offer several options of door control. As either a rotary knob or with a secure key, allows selection of 4 to 5 separate door modes. Economic in design, MICOM Function Selectors are easy to install and operate. Supplied in a fire retardant black plastic mount box, with attractive cover design in white, our function selectors can be fitted to walls or aluminium frames alike.

- 1. Closed
- 2. Exit Only
- 3. Automatic
- 4. Hold Open

- Push Button (Option)
- Complete with 3m Cable



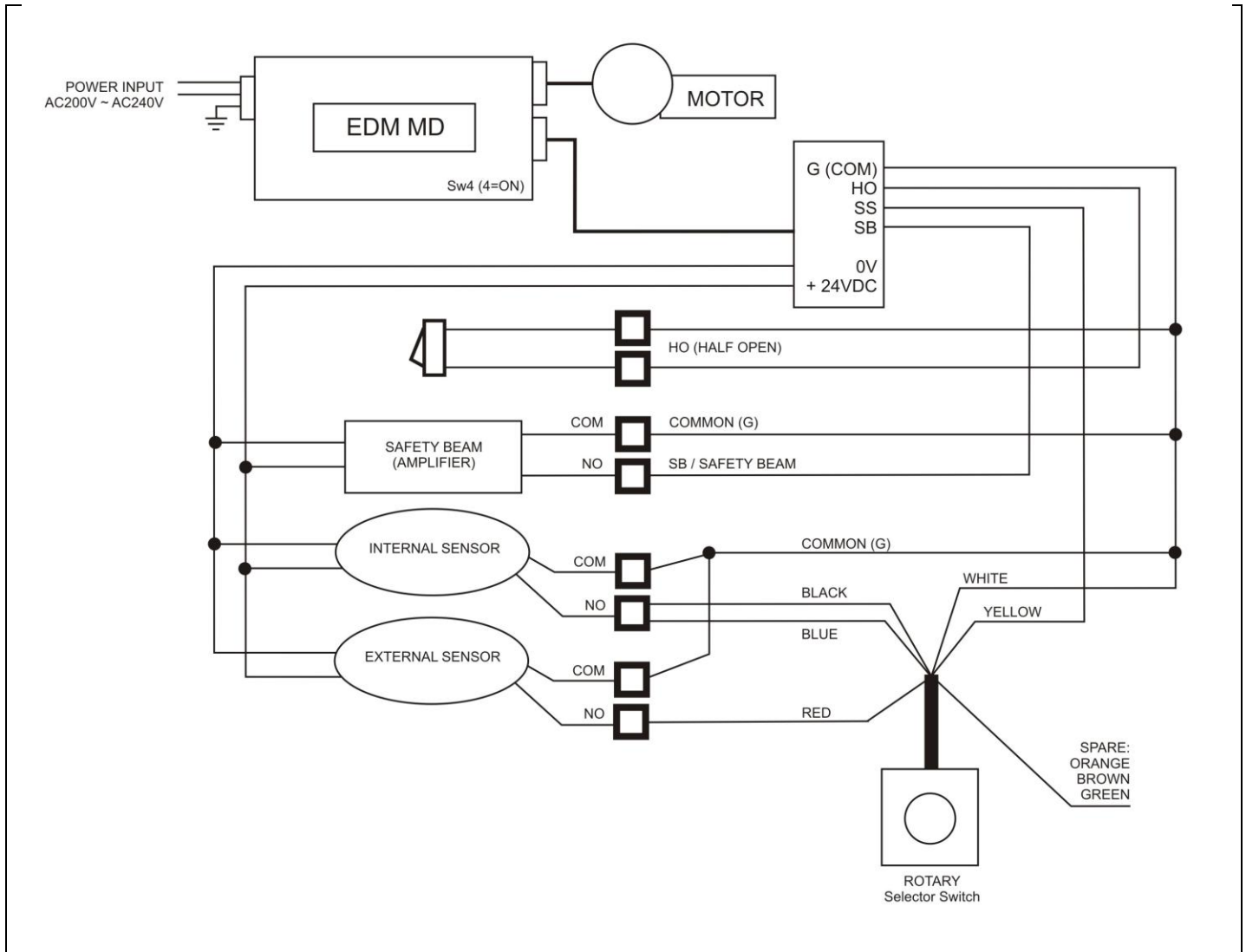
Operation Modes

Symbols	Description
	Position 1. Closed / Night
	Position 2. Exit Only (Entry Only available as additional option)
	Position 3. Automatic
	Position 4. Hold Open
Exit	Exit - Push Button (option) for in case 'Closed / Night' is selected.

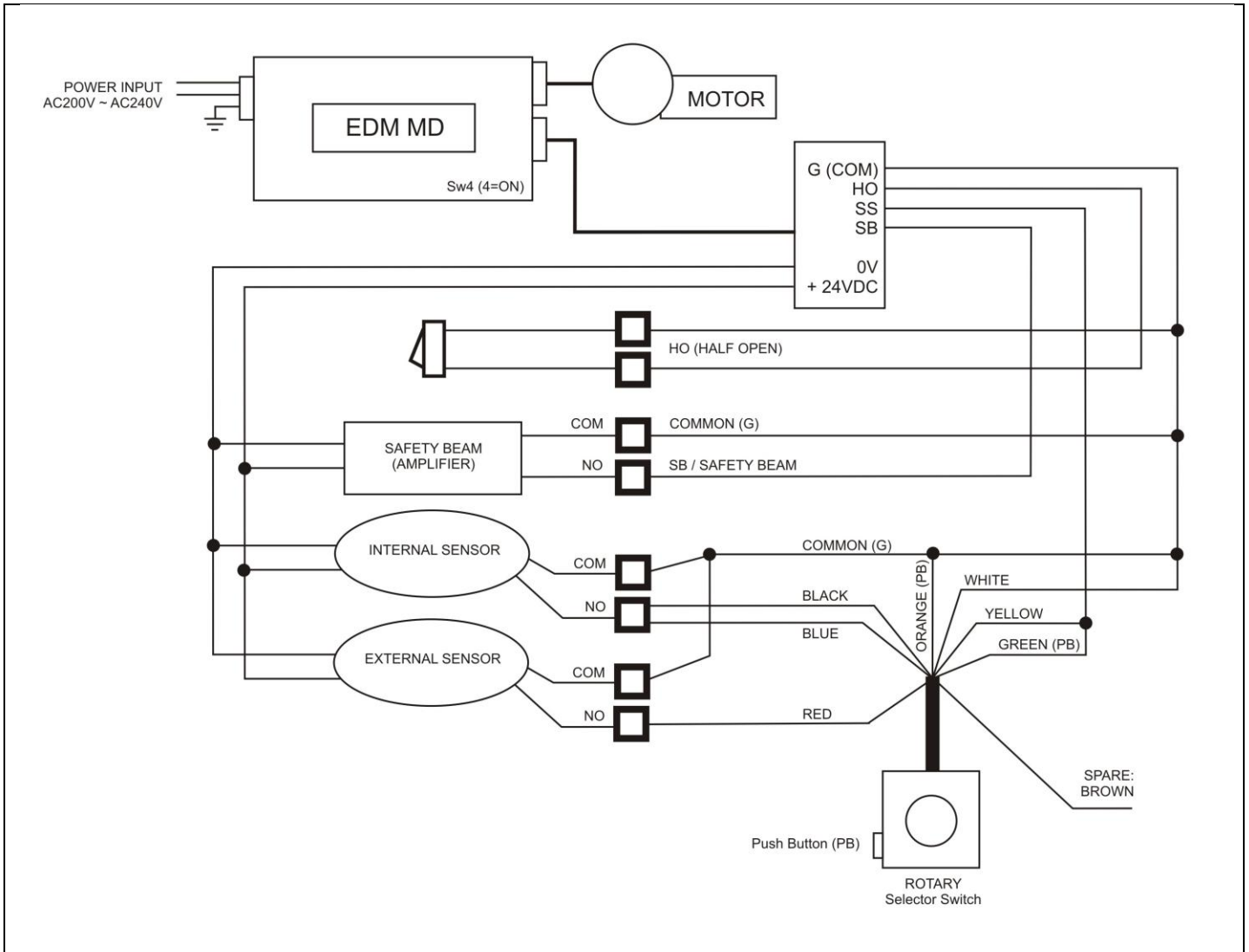
10.2 Wiring Drawing - MICOM Function Selector Switch

4 Position with Rotary Knob – Available in 2 configurations

10.2.1 Rotary Function Selector - 4 Position



10.2.2 Rotary Function Selector Switch - 4 Positions with Push Button - Exit



11. Basic Setting Table – Cut out

MICOM EDM MD			
LED1	Function	LED2 - Adjustment	Factory Setting
0	Hold Open Time	1 ~ F Steps	1
1	Open High Speed (500mm/s MAX)	0 ~ A Steps	7
2	Open Low Speed	0 ~ A Steps	4
3	Open Brake Force	0 ~ A Steps	5
4	Open Force	0 ~ A Steps	5
5	Close High Speed (400mm/s MAX)	0 ~ A Steps	5
6	Close Low Speed	0 ~ A Steps	4
7	Close Brake Force	0 ~ A Steps	5
8	Close Force	0 ~ A Steps	3
9	Partial Open Width (%)	0 ~ 3 Steps	1
A	Open Delay Time	0 ~ 3 Steps	1

MICOM Autodoor - Head Office Japan

12th Floor | Tower West | Umeda Skybuilding 1-30 | Oyodonaka 1-Chome | Kita-ku | Osaka 531-0076 | Japan
TEL: (0081) 6 6 454 9721 | FAX: (0081) 6 6 454 9726
E-MAIL: info@micomautodoor.com

MICOM Autodoor - Europe

2nd Flr . Dobson House | Regent Centre | Gosforth | Newcastle Upon Tyne | NE3 3PF | U.K.
Tel: (0044) 0191 2336323 | Fax: (0044) 0191 2840222
E-Mail: info@micomautodoor.com

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