

# MICOM AUTODOOR

## Automatic Sliding Door Operator

### Model: EDM MD

Original Instructions

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# INSTALLATION MANUAL






**IMPORTANT SAFETY INSTRUCTIONS**

- It is important for the safety of persons to follow these instructions. Save these instructions.
- Children being supervised not to play with the appliance.
- Frequently examine the installation for imbalance and signs of wear or damage to cables, springs and mounting.
- Do not use if repair or adjustment is necessary.
- Disconnect the supply when cleaning or other maintenance.
- The installer is to check that the temperature range marked on the drive is suitable for the location.
- Before installing the drive, check the driven part is in good mechanical condition, correctly balanced and opens and closes properly.
- This drive is intended to be installed at a height of at least 2.5m above floor.
- **WARNING:** the drive shall be disconnected from its power source during cleaning, maintenance and when replacing parts.



**WARNING: Avoidance of Injury, Electric shock and Fire**

- Safety Beam or Safety Curtain **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.

	<b>CAUTION: Avoidance of Injury and Malfunctions</b>
<ul style="list-style-type: none"><li>• Do not switch off power supply whilst door(s) in motion.</li><li>• Ensure sliding door travel area is clear before switching power switch ON.</li><li>• Keep fingers, clothing &amp; hair, clear of belt and all moving parts.</li><li>• Protective gloves should be worn when handling metal parts.</li></ul>	
	<b>CAUTION: Avoidance of Injury during Maintenance &amp; Disposal</b>
<ul style="list-style-type: none"><li>• 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.</li><li>• 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.</li><li>• Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.</li><li>• Contact your local government for information regarding the collection systems available.</li><li>• If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.</li></ul> 	

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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 RE-SET 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 door is in operation. Together with many other functions available, operational parameters can be adjusted to suit each individual installation through an easily accessible visual LED display found on MD Control box face.

Easily accessible connections are located either as an independent terminal on the rail or by adding MICOM Sensor and Battery Monitoring board (SMB) for EN16005 Compliance.

MICOM inbuilt safety features and quality components will ensure EDM-MD Series is safe, reliable and provides 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
- Side Screen Safety Input
- Emergency Stop Signal Input
- Ratchet or Flip-Flop Function
- 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
- Wide Parameter Adjustments
- CE Compliant

## 1.2 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, End Covers, 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).

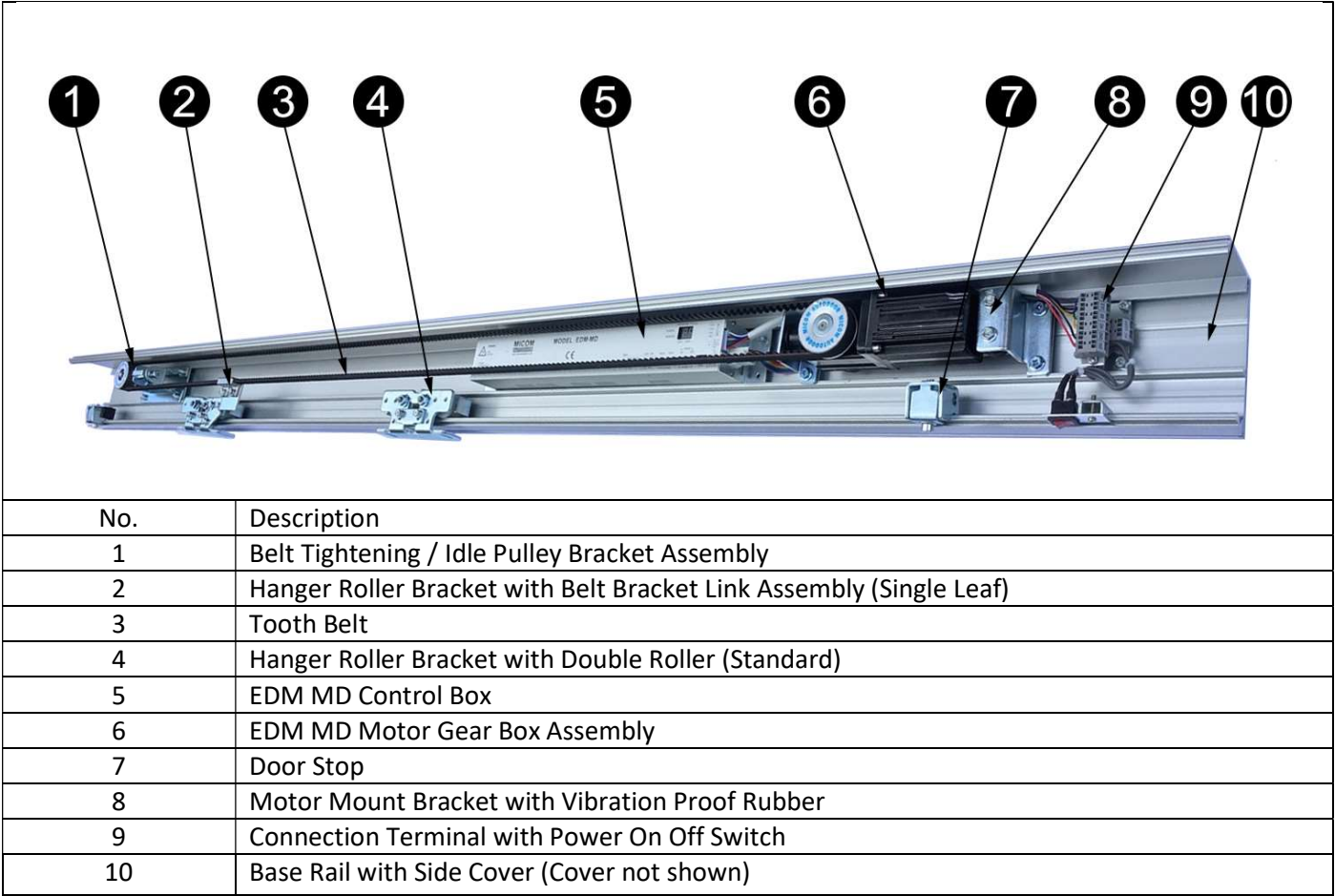
## Accessories

- 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](http://www.micomautodoor.com) or E-mail: [info@micomautodoor.com](mailto:info@micomautodoor.com)

2. EDM MD Series

2.1 EDM MD Complete Operator Parts



### 3. Installation

#### 3.1 Base Rail Installation

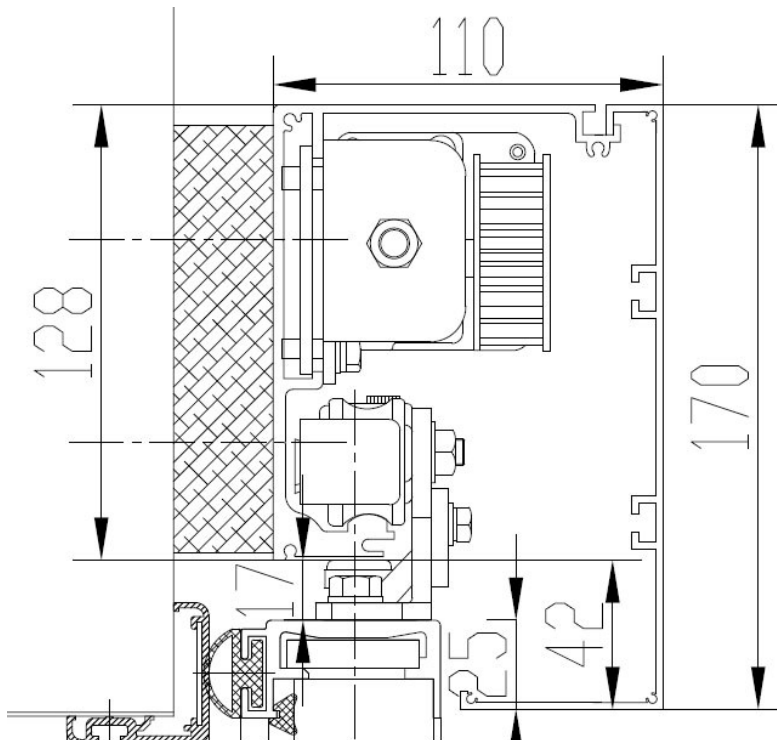


CAUTION: Reduce risk of injury. Ensure installation area is clear of tripping hazards. Ensure work area is clear of pedestrians and there is a restricted pedestrian access at all times during works being carried out.

#### 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



Measurement in mm



Technical drawing of a conveyor system with dimensions and labels:

- 1 > RAIL WAY
- 2 > MOTOR
- 3 > MOTOR MOUNT
- 4 > CONTROL BOX
- 5 > HANGER BARKET
- 6 > BELT BARKET LINK
- 7 > BELT BARKET LINK(DOUBLE)
- 8 > STOPPER
- 9 > TIMING BELT
- 10 > POWER SWITCH
- 11 > BELT

Dimensions:

- 120
- 140
- DS
- DW

### 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.

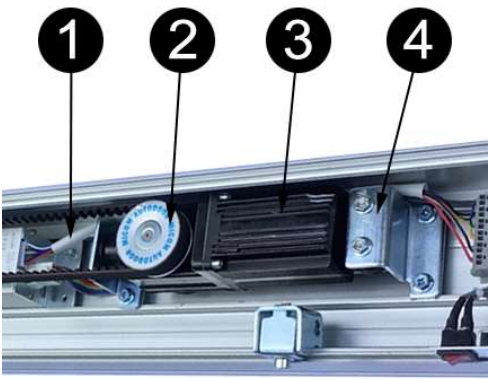
Note: Teaching data will be stored within the control unit, even if the main power is off. Once the mains power is turned on, the stored data will be reloaded and door will continue its operation with need to re-learn it's stroke.

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	Connection Harness to EDM MD Control Box
2	Motor pulley
3	Brushless DC Motor
4	Motor Mount Base with Vibration Proof Rubber

5.2 Control Box Assembly EDM MD



No.											
1.Power Supply	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><u>RUN Mode Only</u></p> <p>TEST Button – Used to check the basic function of the operator when servicing or installation. Activation signal for Test open cycle.</p> <p>UP &amp; SET Button – Push and Hold together. After releasing buttons, LED shows open counter. “OP * * * * *” (8 Digits)</p> <p>*To entre Programming mode : Slide switch from RUN to PROG.</p> <p><u>PROGRAM Mode only</u></p> <p>&lt;How to RESET&gt;</p> <p>UP &amp; SET Button – Used when in PROGRAM mode only.</p> <p>&lt;How to change setting&gt;</p> <table><tr><td>UP</td><td>SET</td></tr><tr><td>ON</td><td>OFF : Change LED 1 value</td></tr><tr><td>OFF</td><td>ON : LED 2 flash</td></tr><tr><td>ON</td><td>OFF : Change LED 2 value</td></tr><tr><td>OFF</td><td>ON : Value is fixed (LED 1/2 lights are on)</td></tr></table> <p>(Repeat this to change setting)</p>	UP	SET	ON	OFF : Change LED 1 value	OFF	ON : LED 2 flash	ON	OFF : Change LED 2 value	OFF	ON : Value is fixed (LED 1/2 lights are on)
UP	SET										
ON	OFF : Change LED 1 value										
OFF	ON : LED 2 flash										
ON	OFF : Change LED 2 value										
OFF	ON : Value is fixed (LED 1/2 lights are 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:</p> <p>LED1 : Function / Application</p> <p>LED2 : Parameter Value</p> <p>Green LED : Power indicator</p> <p>Red LED : Sensor indicator (SS or SB)</p> <p>'RUN' Mode</p> <p>When in 'RUN' mode, the operator will run as normal. LED display will show:</p> <ol style="list-style-type: none"> <li>Number of open cycles. (Memory is cleared by main-power off).</li> <li>Error indication</li> </ol> <p>Error Code:</p> <p>E0 : Door travel distance during teaching cycle is too short (less than 150mm).</p> <p>E1 : Open error (Obstruction during the opening cycle)</p> <p>E2 : Closer error (Obstruction during the closing cycle)</p> <p>E4 : Loose belt (Longer stroke than stored data)</p> <p>E6 : E-lock error (no un-lock signal input)</p> <p>'PROGRAM' Mode</p> <p>When in PROGRAM mode, changes to operational parameter values can be made. (To entre Programming mode: Slide switch from RUN to PROG.)</p> <p>See setting table. Sec 6.</p>
5.SW4	<p><b>Note : After changing setting of SW4, turn the main power OFF/ON to save the adjustment.</b></p> <p>SW1 : Opening direction</p> <p>SW2 : RS function (Ratchet or Flip Flop)</p> <p>SW3 : Close pressing – Set ON if the motor generates vibration at the closed position. Closing Press function will be cut off 2-3 sec after fully closed. Otherwise Close Press is always on.</p> <p>Set OFF – Always closing press at closed position.</p> <p>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
8. E-Lock	Relay Output (NO or NC) (DC24V 300mA)
9. DC 24V	Output for E-Lock (Can also be used for Sensors/ Accessories) (DC 24V 300mA)
10.LOT Number	Lot number is shown by 4 digits. (yyymm)

## 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 Break Force	0~F	5	Setting of open break 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 Break Force	0~F	5	Setting of close break 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".
B	Mode Switching	0~2	0	0 : HO (Half Open) 1 : AS (Side Screen Safety) 2 : ES (Emergency Stop)

(\*) :

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

	<b>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.</b>
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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:

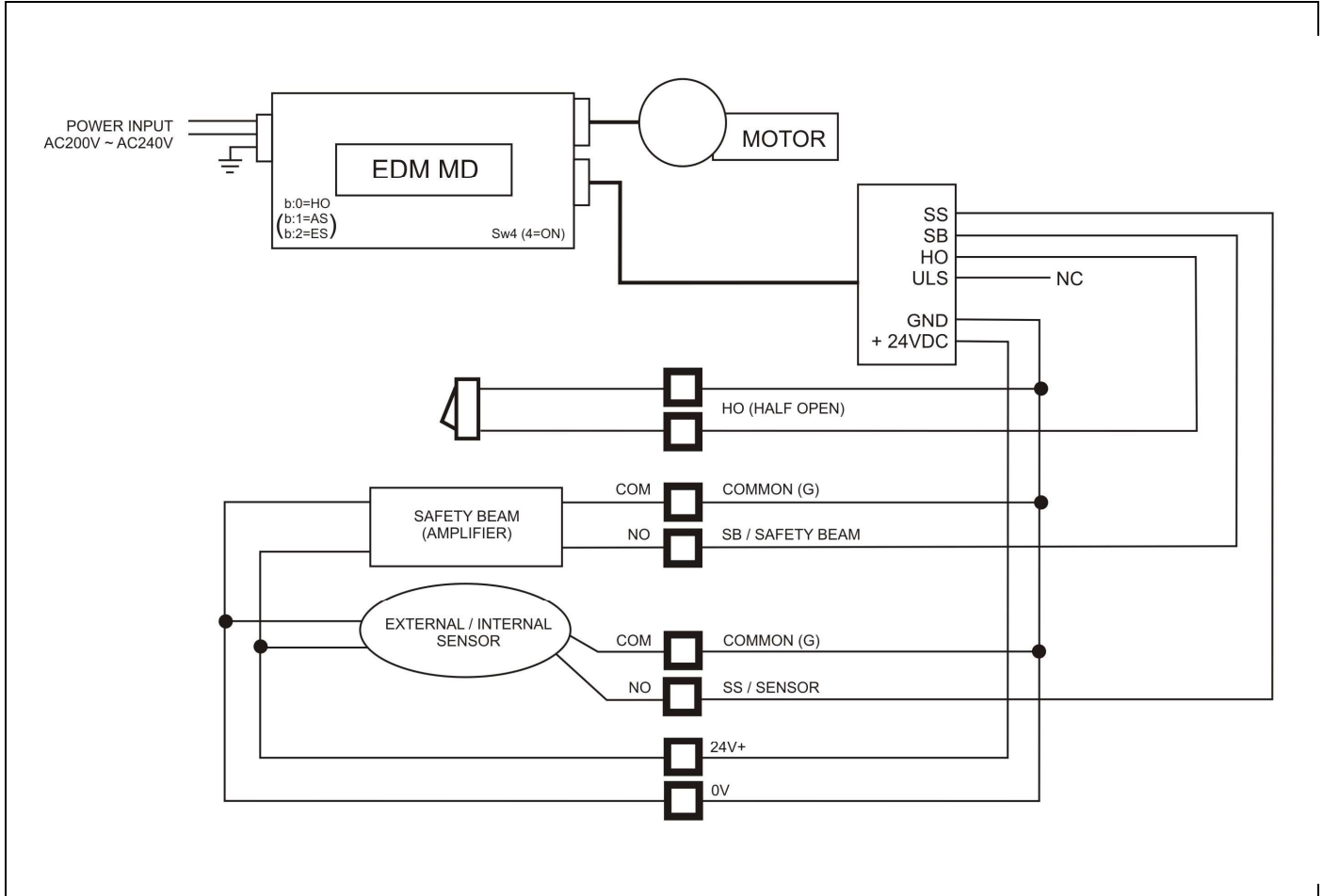
### 7.1 During closing travel

- 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
Applicable door (Max)	Weight	100kg	100kg x2
	Dimension	W1500xH2500 (Max)	W1500xH2500 (Max)
	DH/DW ratio	4.0	4.0
Open Door Speed		Adjustable 160 - 500mm/s (11 steps adjustable)	
Close Door Speed		Adjustable 160 - 400mm/s (11 steps adjustable)	
Power Consumption		200 - 240V AC, 0.7A	
Power Output		24V DC, 300mA	
Motor		DC 24V / 55W Brushless	
Braking Adjustment		0-A value (11 steps adjustable)	
Door Open Timer		1-60sec (16 steps adjustable)	
Partial Open (Winter/Summer)		35%, 50%, 65%, 80% (4 steps adjustable)	
Safety Obstruction		Closing Travel: Safety Return / Opening Travel: Safety Stop	
Operating Temperature & Humidity		0C – 50C / 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.

### 10.2 Operation Modes

- 1. Closed
- 2. Exit Only
- 3. Automatic
- 4. Hold Open
- Push Button (Option)
- Complete with 3m Cable

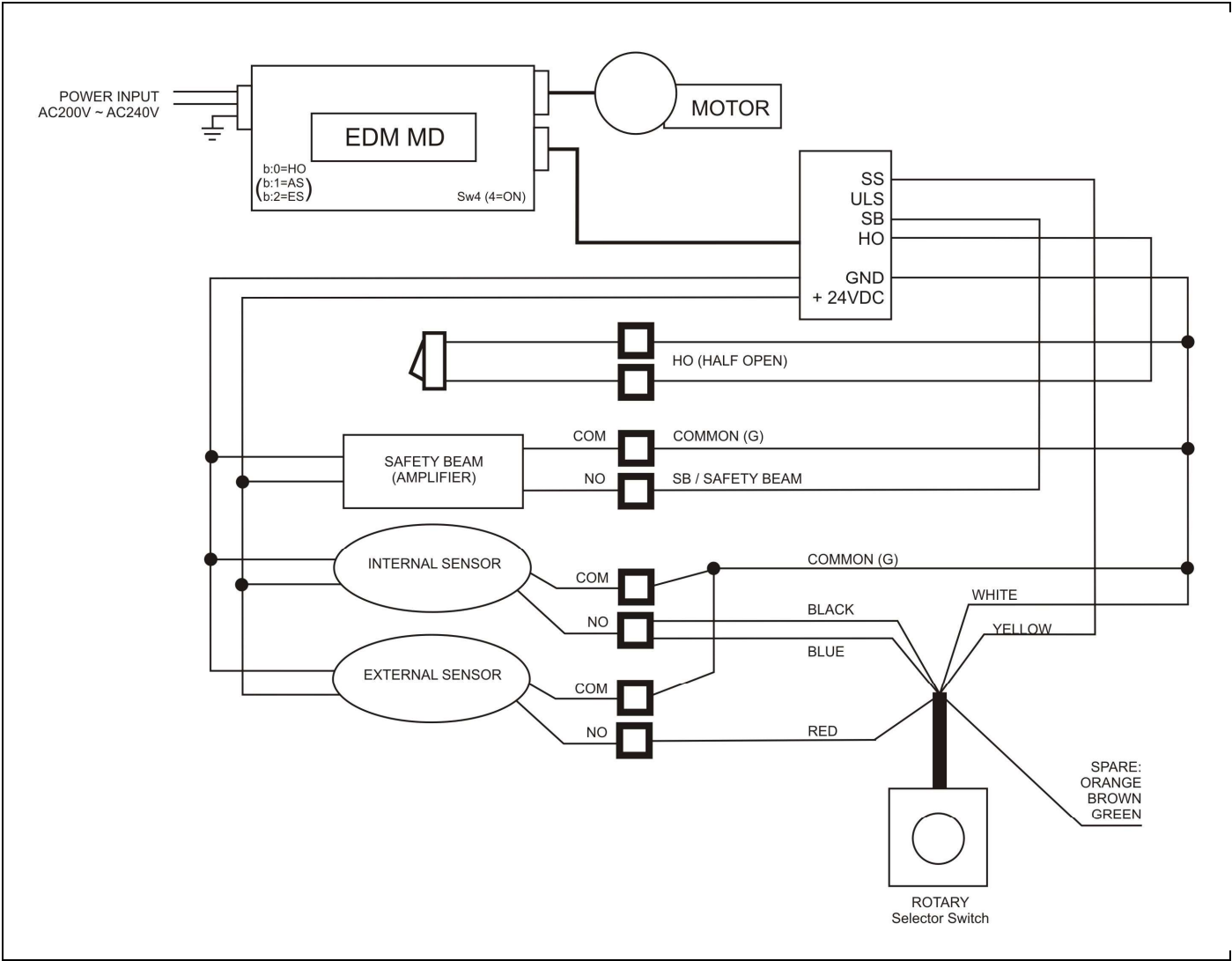


Symbols	Description
	Position 1. Closed / Night
	Position 2. Exit Only (Entry Only available as additional option)
	Position 3. Automatic
	Position 4. Hold Open
<b>Exit</b>	Exit - Push Button (option) for in case 'Closed / Night' is selected.

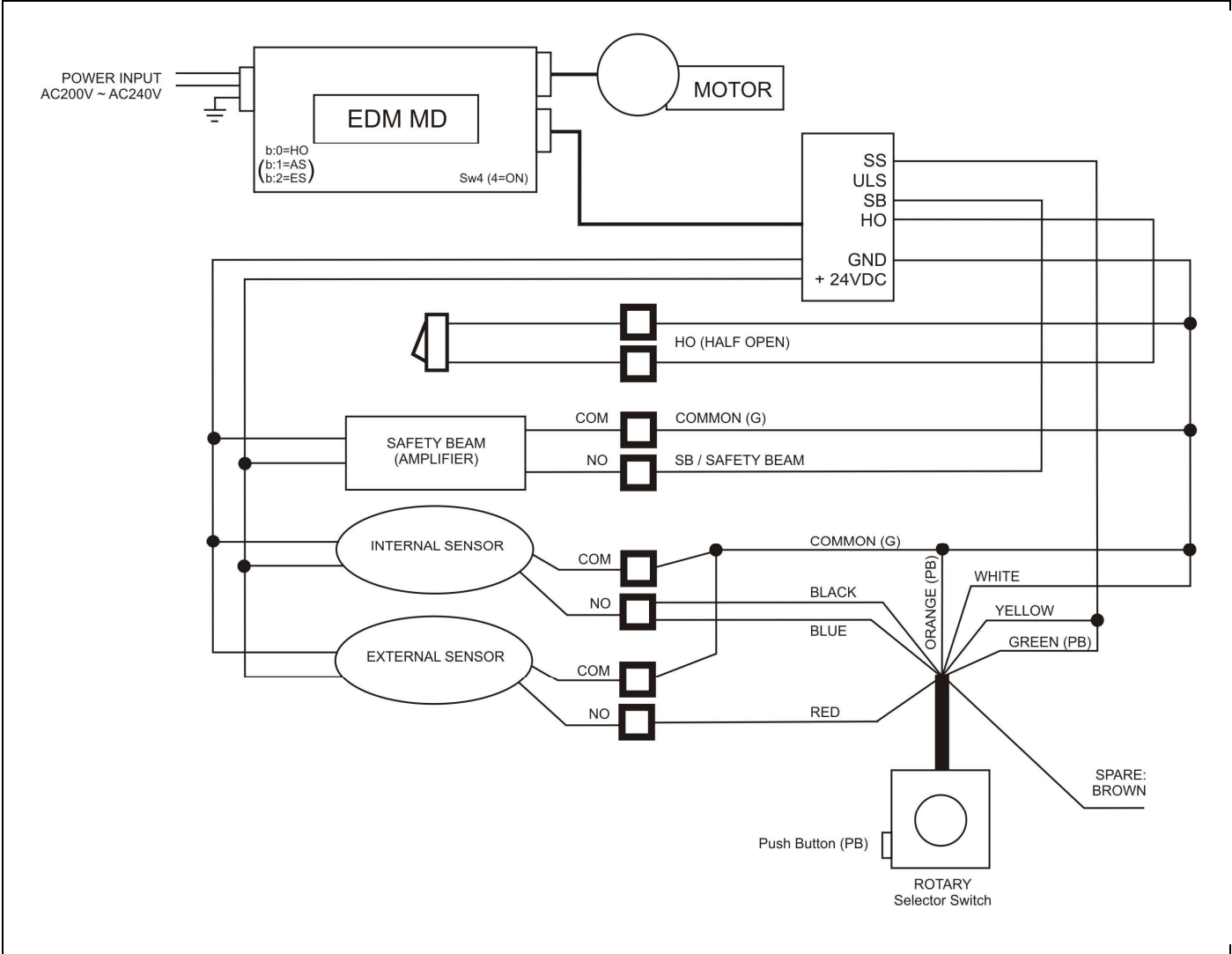
### 10.3 MICOM Function Selector Switch - Wiring Drawing

4 Position with Rotary Knob - Available in 2 configurations

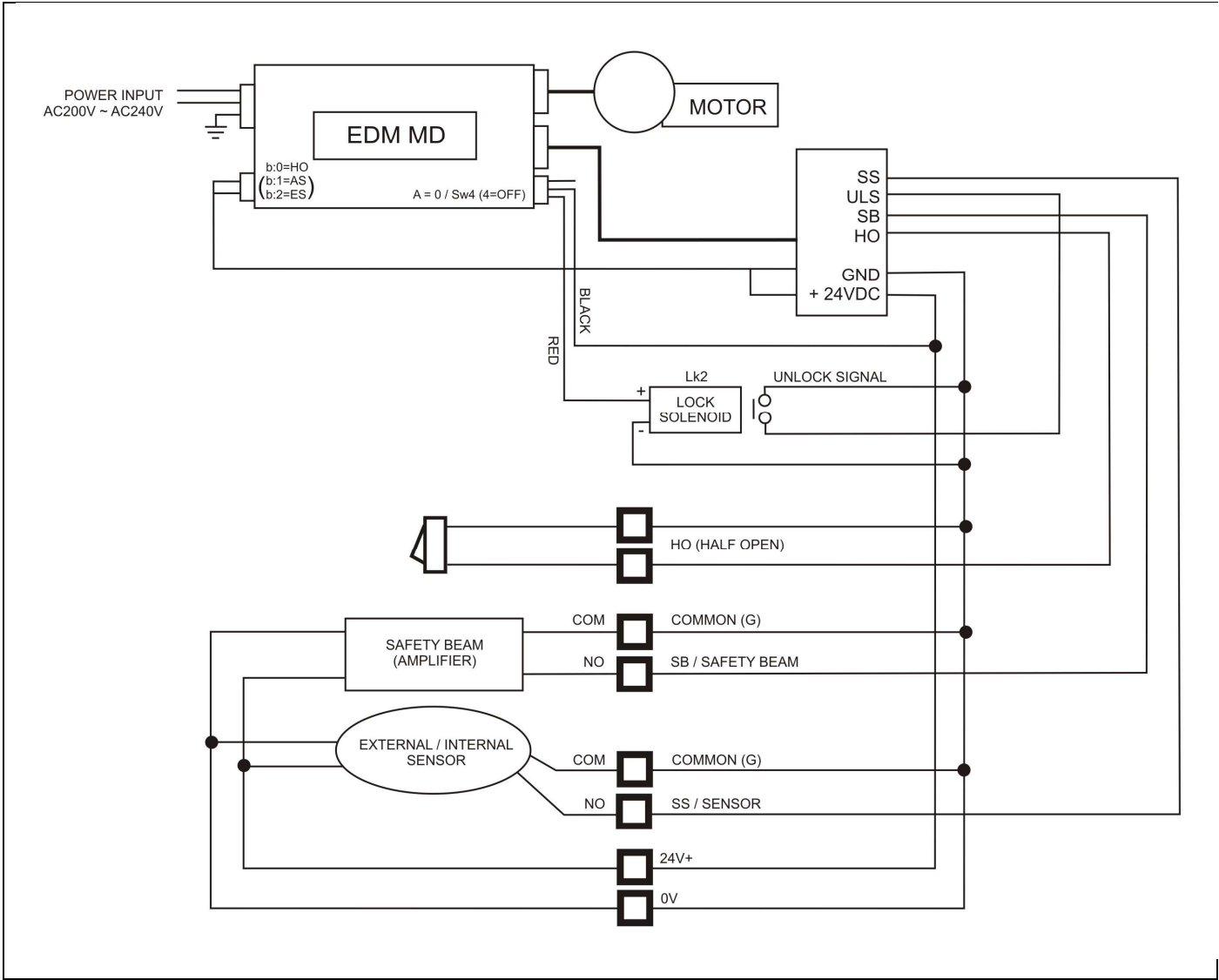
#### 10.3.1 Rotary Function Selector Switch - 4 Position - Standard



10.3.2 Rotary Function Selector Switch - 4 Positions with Push Button – Emergency Exit (Option)



# 11. Electromagnetic Lock Wiring



12. 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 ~ F 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 ~ F 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
B	0:HO / 1:AS / 2:ES	0~2 Steps	0

### EC Declaration of Incorporation

Name of manufacturer: **KENWA CO., LTD.**  
Address of manufacturer: **6th Floor, Marutake Honmachi Bldg, 1-6-18, Chuo-Ku Osaka 541-0053, Japan**  
In accordance with the following Directive: **2006/42/EC The Machinery Directive**

We hereby declare that for the partly completed machinery identified as:

Equipment: **Automatic Sliding Door Operator**  
Model Number: **EDM-MD**  
Serial Number:

*The following EHSRs have been complied with:*

- **Annex I of 2006/42/EC, except the following clauses:**

<b>1.1.7</b>	<b>1.2.4.3</b>	<b>1.4.3</b>	<b>1.5.4</b>	<b>1.6.2</b>
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- **EN ISO 12100:2010**
- **EN 60335-1:2012+A11:2014**
- **EN 60335-2-103:2015**

and the technical documentation is compiled in accordance with Annex VII (B) of the Directive.

We undertake to transmit, in response to a reasoned request by the appropriate national authorities, relevant information on the partly completed machinery identified above. The method of transmission shall be by mail. This partly completed machinery must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Responsible for making this declaration is the:

Manufacturer's Name : **KENWA CO., LTD.**  
Manufacturer's Address : **6th Floor, Marutake Honmachi Bldg, 1-6-18, Chuo-Ku Osaka 541-0053, Japan**  
Authorized Rep's Name :  
Authorized Rep's Address:

Person responsible for compiling the technical files established within the EU

Name, Surname : **Mr. Steven Liddle / C.O.O**  
Address : **The Grainger Suite, Dobson House, Regent Centre, Gosforth Newcastle Upon Tyne. NE3 3PF**

Person responsible for making this declaration:

Full name / Position : **Ms. Seiko Harada / Manager**  
Place / Date : **Osaka, Japan**

\_\_\_\_\_  
(Place)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Company stamp and legal signature)

**MICOM Autodoor - Head Office Japan**

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