

Motus® Kit Concealed Frame

Installation Guide



Thank you for choosing Enigma

To ensure the installation process is simple and efficient, we recommended you read this guide in full first.

Specific tools are also required to complete the installation:



Getting started

Before you start installation ensure you have read and understood the instructions.

DELIVERY

The Motus Enigma pocket Door system will be delivered in at least three boxes:

- 1. Pocket Frame
- 2. Trim Surround
- 3. Track

If a Door leaf has been ordered this will come separately.



POWER REQUIREMENTS

The Motus Enigma pocket Door system requires a low-voltage electrical connection. Wiring for the system can vary based on the type of connection:

Hardwired (Optional)

- 1. 13amp Fused Spur Isolation Switch
- 1.5mm Twin & Earth Cable feed to the top of the Pocket enclosure

'Kettle-lead' Wiring (Standard)

1. 13amp Single Socket

IMPORTANT SAFETY INFORMATION

The unit should be installed and commissioned by a trained and qualified personnel.

The unit may only be opened and repaired by the manufacturer.

This unit may only be operated from a protective low-voltage with safe electrical isolation.

Always consider the safety functions of your application as a whole, never just in relation to one individual component of the system.

The installed is responsible for carrying out a risk assessment and installing correctly.

Avoid touching any electronic components.

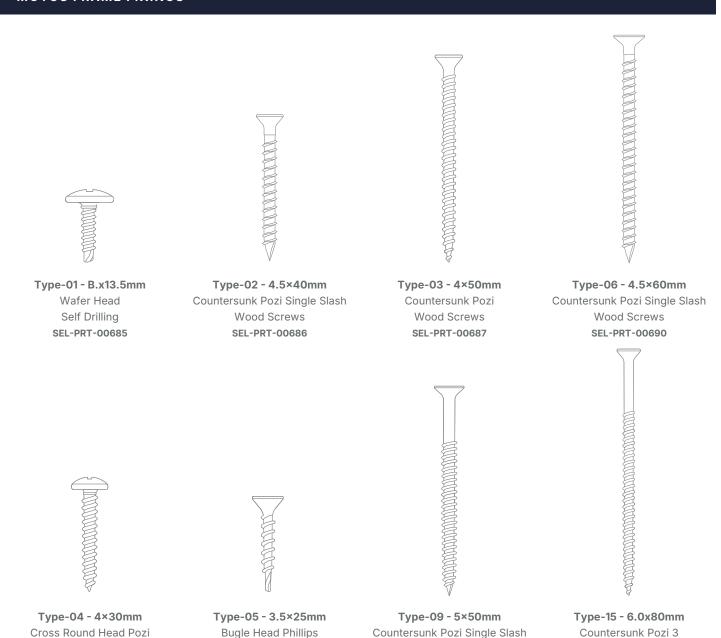
Motus® Frame kit NFR C

Familiarise yourself with components included. All fixings will come pre-packaged to suit your specific project requirements.

MOTUS FRAME FIXINGS

Wood Screws

SEL-PRT-00688



Wood Screws

SEL-PRT-00693

Wood Screws

SEL-PRT-00770

Self Drilling

SEL-PRT-00689

MOTUS FRAME COMPONENTS



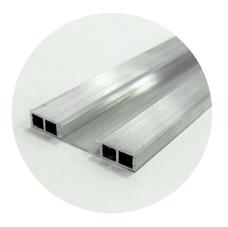




Head Channel



Leading Edge Jamb



Intermediate Jamb



Timber Insert



Door Guide Pin & Channel



Motus Sliding Track



Brush Strip

Wall construction preparation

The Motus Enigma system can be fitted to steel or timber studwork partitions. You must ensure the Head stud is strong enough to take the Door weight.

IMPORTANT INSTALLATION NOTES

1. Studwork size

The studwork size required is **94mm**. If using steel studs a 94mm Head and base Track and 92mm uprights should be used.

2. Steel studs

If using steel studs, timber inserts are required within the studs to provide additional strength and purchase for 60mm Track Screws.

3. Doors above 2300mm

If the Door height you are installing is above 2300mm then using 2 layers of plasterboard is recommended.

To order kits to suite two layers of plasterboard add 'Double Board' to the product code.

4. Self-supporting Head

For situations in high rise buildings where you cannot fix to the ceiling or soffit then use the Enigma Self-supporting Head installation detail. Follow standard Enigma instructions to calculate your studwork structural opening and add the following dimensions: Width +94mm and Height +220mm. Refer to the specific Self-supporting Head installation instructions for further details.

Bespoke requirements?

Enigma can be customised to suit bespoke projects. In principle, the installation process remains the same, however certain installation dimensions may differ. Please contact the Selo team to discuss your bespoke requirements.

Dimensions

Motus Concealed



SELF-SUPPORTING HEAD

Follow the standard Enigma instructions to calculate your studwork structural opening and add the following dimensions: **Width +94mm** and **Height +220mm**

IMPORTANT

If installing Self-supporting Head please refer to the specific installation instructions for further details.

MOTUS TRACK SIZE

ITEM		1750mm	2000mm	2250mm
Door sizes (mm) Height = S/O -76mm	Width	875	1000	1125
	Min. Height	1500	1500	1500
	Max. Height	2815	2815	2815
Clear openings (mm)	Min. Single Max. Single Min. Double Max. Double	600 842 1000 1710	843 967 1711 1960	968 1092 1711 1960
Structural openings (mm)	Width Single	1870	2120	2370
	Width Double	3700	4200	4700
	Height	Door +76mm	Door +76mm	Door +76mm

Base Channel Calculations

Please refer to Step 4 of the Frame Installation instructions shown on page 12.



STRENGTHEN HEAD

When constructing your stud partition, please ensure the Head is strong enough to take the weight of the sliding Door that will hang from it.

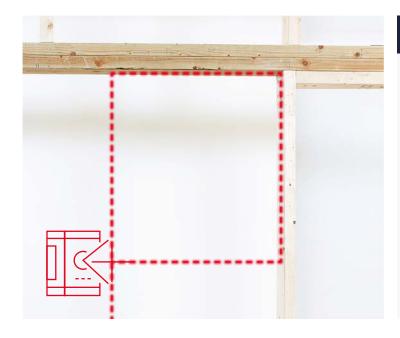
IMPORTANT

If using a Self-supporting Head please refer to those specific installation instructions.



CHECK SIZE WITH SCHEDULE

When forming the structural opening, please ensure you are working to the correct opening size provided on the Door schedule.

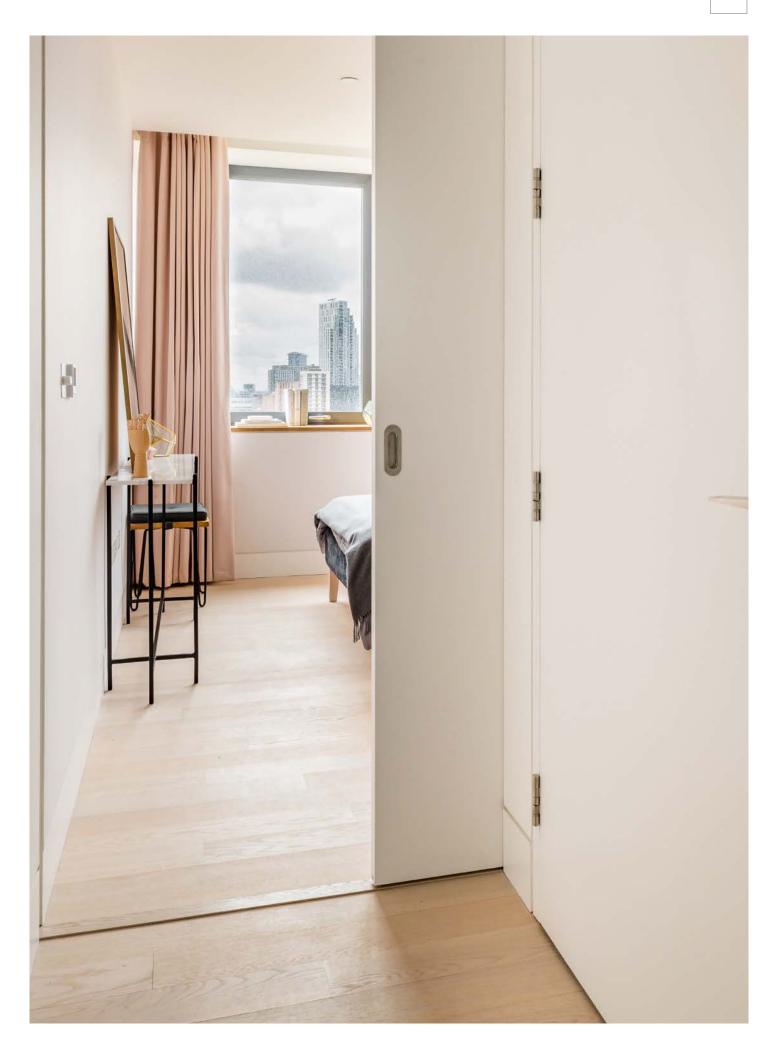


LEVEL-UP

Ensure the opening is square and plumb.

IMPORTANT

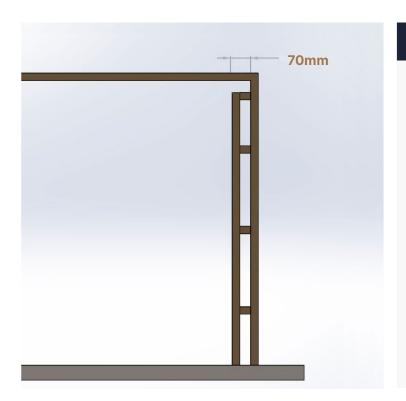
We strongly recommend using a laser level for setting out.



Frame installation

IMPORTANT

If installing Self-supporting Head please refer to the specific installation instructions for further details.



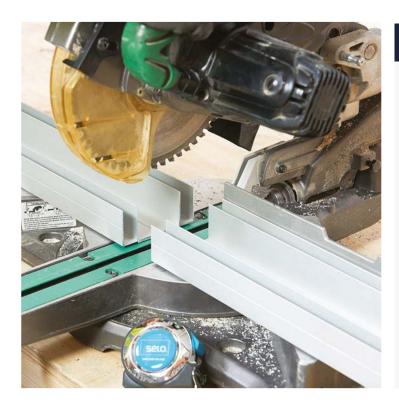
PREPARE THE STRIKE JAMB

IMPORTANT

If installing double Doors skip this step.

Cut some C16 timber stud (70mm x 45mm) to the height of the structural opening.

Cut noggins at 26mm thick. Space at a maximum of 500mm centres and fix to the Strike as per the drawing.



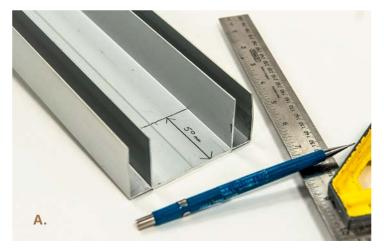
PREPARE HEAD CHANNEL & SLIDING TRACK

Single Doors

Cut the Head Channel to S/O width.

Double Doors

Cut the **Head Channels** equally to take up the whole S/O. It is important to ensure that where the two Channels meet is in the centre of the opening.





HEAD CHANNEL PREPARATION

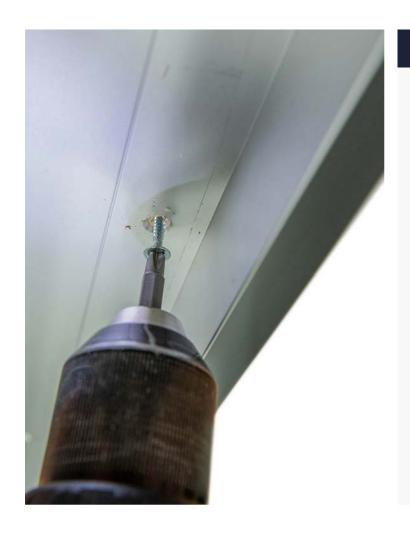
Single Doors

A. Mark 50mm from the rear end of the Head Channel and 70mm from the Strike/front end.

B. The Kettle Lead port is at the front of the Track and will be installed at the Strike end of the pocket. Place the Track on the Head Channel and line-up the Kettle Lead entry point with the 70mm mark. Align the centre lines of the Track and the Head Channel together, pilot drill the screw holes.

Double Doors

Mark **50mm** from each end. The **Tracks** will be installed with the Kettle Lead ports in the middle to aid wiring. Place the two **Head Channels** together with the Tracks inside lining up the centre lines. Ensure there is **100mm** gap between the Tracks for the wire box and then pilot drill the screw holes.



FIT THE HEAD CHANNEL

Using a laser level, fit the Head Channel to the top stud with **Head Channel** Screws using **Type-02** Screws provided.

IMPORTANT

It is important to ensure the Head Channel is level with no bends or bows. If the top stud is not straight then pack the Head Channel out with packers to maintain level.

Single Doors

The 70mm gap and the Kettle Lead port should be at the Strike end of the pocket.

Double Doors

For double ensure the Kettle Lead ports are facing each other in the centre of the opening and with 100mm gap between the Tracks.

Base Channel length

Single Doors NFR C

Structural Opening (minus) - Clear Opening (minus) - 89mm

Double Doors NER C

Structural Opening (minus) - Clear Opening (minus) - 6mm ÷ 2



System calculations

Structural opening examples*

1750mm wide

1820mm (Track +70mm) Single S/O Double S/O 3600mm (Track x2 +100mm)

Max. movement range 875mm

2000mm wide

Single S/O 2070mm (Track +70mm) 4100mm (Track x2 +100mm) Double S/O

1000mm Max. movement range

2250mm wide

2070mm (Track +70mm) Single S/O 4100mm (Track x2 +100mm) Double S/O

1125mm Max. movement range

Door leaf +95mm *S/O height

Permitted Door leaf sizes

Min. height 1500mm Max. height 2815mm Min. width 875mm Max. width 1125mm

Travel for unit = The amount which goes into the Strike Jamb.

CALCULATE BASE CHANNEL & FIX

Single/Double Doors

To accurately determine the length of the Base Channel, refer to the calculations on the left.

Cut the **Base Channel** to this dimension. Do NOT cut-off the end with the notch. Image A.

Base Channel fitting

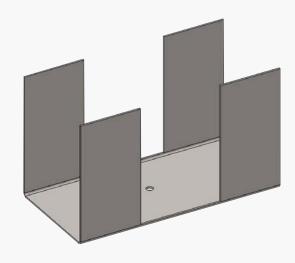
Place the Base Channel on the floor against the rear stud.

If provided with a 'cut-to-size' system position the notched end tight against the rear stud.

At this stage it is vital that to ensure that the centre line of the Base Channel is secured directly underneath the centre line of the Track above. Any deviation will result in misaligned Doors and Trims. Secure to the ground with fixings suitable for substrate.

Cover-plate (Non-Sync)

If the Sync unit is not used, screw the Cover-plate provided between the Tracks to Cover the cable.







FIT TOP TRACK

A. Using **x4 Type-09 Screws** fix the **Track Tongue** in place ensuring it is central inside the Head Channel and up against the **rear Stud**, as shown.

B. Slide the rear of the Track into the Track Tongue, then, using the Type-15 Screws; fix the remaining x2 screw holes located at the Front and Middle of the Track (NOT the Rear).

Once fixed in place, the **front of the Track** should be lined-up with the **70mm** mark for a **Single Door**, or **50mm** mark for **Double Doors**. (Detailed in **Step 2**).

IMPORTANT

Do not fix the rear of the Track (where the tongue is holding the Track in place) This is to ensure that the Track can be removed if required for servicing.



CUT LEADING EDGE & INTERMEDIATE JAMB

Cut the **Leading Edge Jamb** and **Intermediate Jamb** 15mm less than the structural opening height.





CUT & FIT INTERMEDIATE TIMBER INSERT

Cut the Intermediate **Timber insert** 100mm shorter than the Aluminium Jamb and slide the insert into the Intermediate Jamb so it sits 50mm from each end.

IMPORTANT

When using Door leafs wider than 926mm the kit will be supplied with extra Intermediate Jambs to be fitted equally space within the pocket width.



CONNECTING THE TRACK

Single Doors

Push the Kettle Lead in the Strike end of the Track. Run the excess cable behind the Strike Trim packer to the Plug. DO NOT power on at this point.

Double Doors

Remove the Kettle Lead ports on both Tracks. As standard; Motus Double Doors utilise a Sync unit to open both Doors at the same time, additional wiring is required - See **p19**.

For Hardwired Power Supply please see p28.





FIT POCKET SIDES & FIX THE JAMB

- A. Slide the Intermediate Jamb into the Head Channel and Base Channel with the Timber inserts facing out so it sits centrally in the pocket. Fix using Type-01 Screws.
- **B.** Slide the **Leading Edge Jamb** into **Base Channel** with notched end at the top, so the flange sits hard against the end of the **Base Channel**.

Plumb the Jamb and fix into place using one **Type-01** screw top and bottom as shown in the image. Must be posited furthest from the opening.



FIT BRUSH STRIP

Cut the **Brush Strip** to length and fit to the Leading Edge Aluminium profile.

IMPORTANT

If using simultaneous opening ensure that the Door leafs and Head Trims have been fitted. Refer to the simultaneous opening instructions for more.

Door leaf installation

The Door leaf needs to be hung before the trim is fitted.

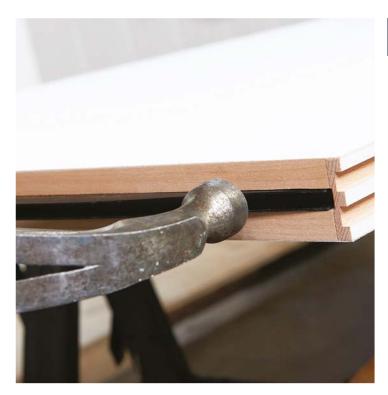


FIT HEAD BRACKETS

Fit the Head Brackets in the rebates provided in the Door Head with the Type-03 Screws. The longer Bracket is used at the front of the Door.

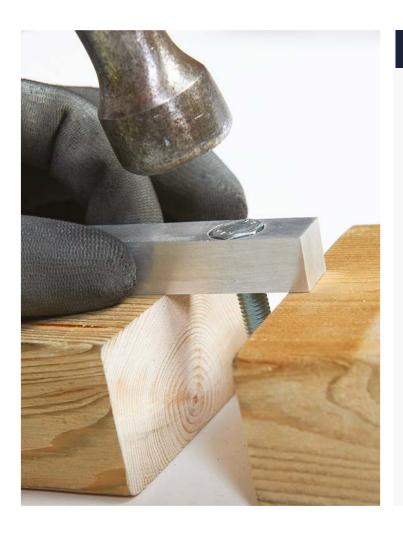
IMPORTANT

Allow space for the end cap to sit flush with the Door.



FIT THE GUIDE CHANNEL

Tap the black nylon Door guide Channel into the groove in the bottom of the Door and fix into place using a thin bead of adhesive.



ASSEMBLE GEAR BRACKETS

Force the hanger Bolt into the gear Bracket using a mallet or hammer.

This will hold the Bolt captive in the Bracket.



SLIDING GEAR PREPARATION

Slide the Trolley into the top Track.

Adjust Brackets so they are 25mm from underside of the Track.

IMPORTANT

Maximum undercut must not exceed 8mm.



FIT DOOR GUIDE PIN

Fit the Door Guide Pin at the finished floor level with fixings suitable for substrate. The Pin offset needs to be facing the Strike stud and aligned centrally with the centre line on the Base Channel. If your installation requires the Door Guide Pin to be raised up use suitable packers.

IMPORTANT

The Pin needs to be fitted at FFL (finished floor level). If the finished floor is not yet installed delay until complete.





HANGING THE DOOR LEAF

Insert the rear Bracket into the Channel first, then take the weight of the front edge of the Door and carefully slide it back into the pocket.

Take care to line it up with the Guide Pin.





Securing the Door leaf

- A. Slide the front Bracket into place and tighten the Bolt
- B. Fit the Bracket end cap (can be removed and refitted for painting)
- C. Ensure the Door is plumb and level. Bolts in the roller Trolley can be used for adjustment



FIT THE DOOR STOPS

Slide the **Door Stop** into the Track, fix into place by tightening the grub Screws. This can be finally adjusted once the Trims are installed. To set the rear stop, slide the Door back into the pocket until the Door will be flush with the Leading Edge Trims, then tighten the stop up against the carriages.

IMPORTANT

It is important to set the rear stop at this point as once plasterboard is installed there is no access to rear stop.



DRILL HEAD CHANNEL

IMPORTANT

The next steps A-E refer to the installation of a Sync unit and is used with Double Doors ONLY. For Single Door installation please skip the following steps.

Work out in relation to your current internal wall cabling as to the route to the centre of the Tracks, then drill a hole **no smaller than 8mm** in the **Head Channel** as shown.



REMOVE KETTLE-LEAD PORTS

Remove the fascias on both Tracks to expose the Kettle Lead port and Connection Terminals.

Remove x2 Screws before removing port.

Ports need to be removed from **both Tracks**.

IMPORTANT

Do not bend-down switchboard when removing the ports.



PREPARE CABLE

Cut the **Kettle-lead Plug off** the Power Cable supplied and thread through the Head Channel hole drilled previously.

Strip the cable approximately **30mm** from the ends.



CONNECT TRACKS

Wire the block to the Tracks as shown.

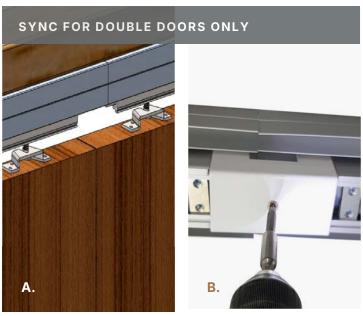
Connect the two Tracks together with the Sync-cable provided in the plugs shown.



WIRE POWER CABLE

Wire the Power Cable to the Connector Block as shown then 'power-up' the Track.





CALIBRATE TRACKS

Prior to configuration ensure Doorstops are correctly fitted to avoid any potential damage.

Power-up the Motus. **Press-and-hold** the 'reset' button (both Tracks if installing a Double Door) for **3 seconds** - The LED light will flash, let go and stand clear of the Door(s) while it self calibrates. Usually the Door will open/close 2-3 times during the process. Adjust the Door levels if needed so it closes straight against the Strike Jamb.

- **A.** Adjust the Door levels if required so they close straight and level with each other.
- **B.** Test the Doors to ensure correct movement/function. Attached the **Cover Plate** to Cover the gap and screw into place.

IMPORTANT

The Tracks must have the same Speed/Delay times to Sync correctly. These can be adjusted with the plastic screwdriver (enclosed). Do not over turn the adjustment Screws; only turn between Min and Max indicators.

Use the provided plastic screwdriver ONLY.



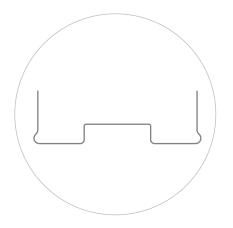
PLASTERBOARD ONE SIDE

Plasterboard over one side of the pocket along with the rest of the wall using the **Type-05** self drilling Screws provided. It is vital to ensure the Leading Edge Jambs remain completely vertical and plumb once boarded. It is essential to clear any swarf or debris that may be in the top Track and Bottom Channel at this stage.

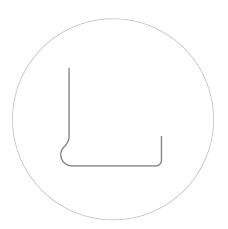
Motus® Trim kit NFR C

All fixings will come pre-packaged to suit your specific project requirements.

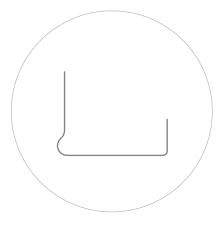
CONCEALED TRIM COMPONENTS



Concealed Strike Trim x1



Concealed Leading Edge Trim x2



Concealed Head Trim



Timber Head Trim



Strike Jamb Seals



Type-05 - 3.5×25mm Bugle Head Phillips Self Drilling SEL-PRT-00689



INSTALL THE STRIKE TRIM

Cut the trim to the height of the opening and fit over wall end and fix through the perforated flanges using the **Type-05** screw.

IMPORTANT

The notched end of the trim goes at the top and fits inside the Head Channel.

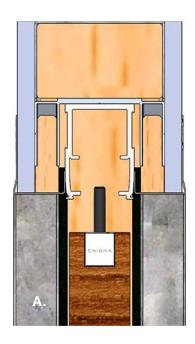


INSTALL LEADING EDGE TRIM

Cut the trim to the height of the opening and fit over the pocket sides and fix through the perforated flanges using **Type-05** screw.

IMPORTANT

- 1. Fixings need to be every 200mm.
- 2. Ensure opening is plumb and square before plastering.





INSTALL THE HEAD TRIM

Slide the Door into the pocket to fit **Head Trims**.

- **A.** Cut the trim to the width of the opening, fit the timber first securing with **Type-05** Screws.
- **B.** Cut and fit the metal trim so it wraps around the Timber and the Plasterboard.

IMPORTANT

1. Ensure the rebates in the profiles line up.



FINISHING PREPARATION

Test the action of the Door, once you are satisfied that it functions correctly apply plaster fibre tape to top corners.

IMPORTANT

Before tape and jointing over the Trims, using a laser level ensure that they are straight and true.



FINISHING

Now the wall can be tape and jointed and wall and Trims painted.

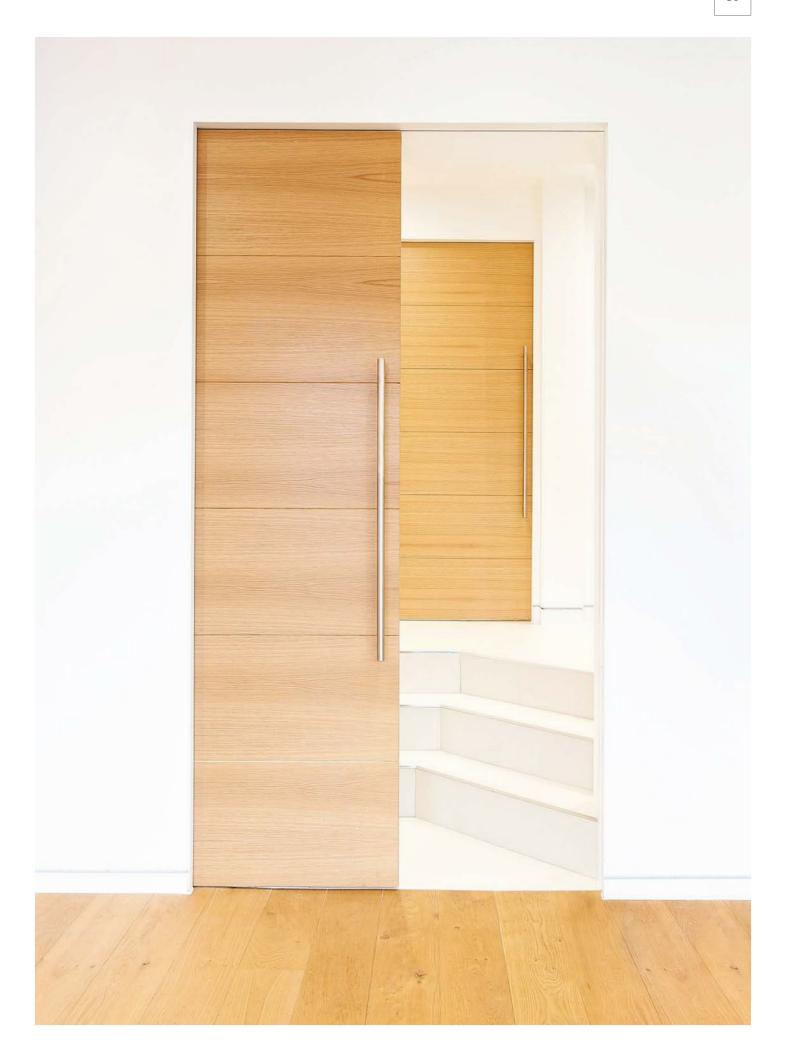
IMPORTANT

We recommend tape and jointing not plastering.



STRIKE JAMB SEALS

If the kit used is a single Door leaf then the rubber corner seals need to be applied to the corners of the rebate in the Strike Jamb.



Troubleshooting





MALFUNCTION	POSSIBLE CAUSES	REMEDY				
Door is switched on Door is not responding Green LED is off	No power supply available	Check power supply				
	Power cable connection not firmly plugged in	Plug in the power cable connection firmly				
	Power cable defective	Replace power cable				
	Mains plug defective	Replace drive				
Door not responding Green LED lights up	Program switch in position [0] (OFF)	Switch program switch to the desired position				
	Program switch in position [II] (PERMANENTLY OPEN)	Switch program switch to the desired position				
	Door was opened by double-clicking PERMANENTLY OPEN switched on	Close the door by double-clicking again				
	Safety sensor on the door is active (obstacles in the sensor's detection area)	Remove obstacles and adjust safety sensors if necessary				
	Cable to sensor defective	Check cable and replace if necessary				
	No safety sensors connected	Check jumpers and replace if necessary Terminals must be jumpered				
	Drive defective	Replace drive				
LED flashes green	Learning cycle was not completed	Restart learning cycle				
	Drive defective	Replace drive				
Door stops while moving	Door moves stiffly	Check the door's area of movement and eliminate any reason for the stiffness				
		Check track and floor guide for dirt or wear and clean if necessary				
Door moves past the set OPEN or Closed position	Corresponding end stop has shifted	Readjust and retighten end stop Carry out a learning cycle				
Red LED lit up constantly	Control defective	Turn the power switch off and then on again				
Constantly		Replace drive				

Control defective	Turn the power switch off and then on again				
	Replace drive				
Power range switch has been switched over	Turn the power switch off and then on again				
Testable safety sensors defective	Check safety sensor and replace if necessary				
Sensor's cable defective	Check cable and replace if necessary				
DIP switches 1 to 3 set incorrectly	Check and reset DIP switch settings				
Incremental encoder or incremental encoder cable defective	Turn the power switch off and then on again				
	Replace drive				
Opening width set incorrectly	Reset opening width (end stops) Carry out a learning cycle				
Door's area of movement is blocked	Clear the area of movement				
Opening width set incorrectly	Reset opening width (end stops) Carry out a learning cycle				
Stator or stator cable defective	Turn the power switch off and then on again				
	Replace drive				
Short circuit at the connection terminal	Eliminate short circuit Turn the drive off and then on again using the power switch				
Unfavourable end position of the door leaf	Move end stop by at least 2 mm Carry out a learning cycle				
Guide mechanism is tight	If necessary, readjust the door leaf connection and floor guide Rotate nuts several times to fix door leaves				
	Testable safety sensors defective Sensor's cable defective DIP switches 1 to 3 set incorrectly Incremental encoder or incremental encoder cable defective Opening width set incorrectly Door's area of movement is blocked Opening width set incorrectly Stator or stator cable defective Short circuit at the connection terminal Unfavourable end position of the door leaf				

Dip Switch Settings

Activate different inputs at the Connection Terminals via the Dip Switches to adjust operation modes.

8 OFF = No locking function

7 OFF = Reduced closing force

6 OFF = Automatic Function activated

5 OFF = External motion detector activated

4 OFF = Internal motion detector activated

3 OFF = Test low active

2 OFF = Sensor test at secondary closing edge deactivated ON = Sensor test at secondary closing edge activated

1 OFF = Sensor test at main closing edge deactivated

ON = Locking function

ON = Enhanced closing force

ON = Permanent Open Function activated

ON = External pushbutton activated

ON = Internal pushbutton activated

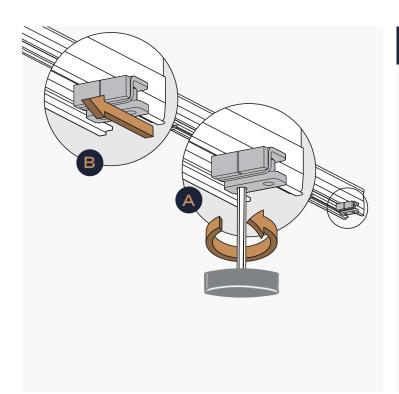
ON = Test high active

ON = Sensor test at main closing edge activated



Hardwired Power Supply

How to hard-wire a permanent Power Supply to your Motus powered Enigma pocket Door system.



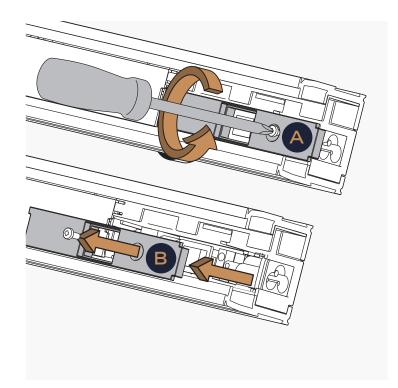
MOVE END STOP

When the system is installed with permanent Power Supply, the internal Power Supply socket has to be removed.

Loosen the Screws at the End Stop and move the End Stop to the centre of the system.

IMPORTANT

Do not remove or screw down the End Stop.

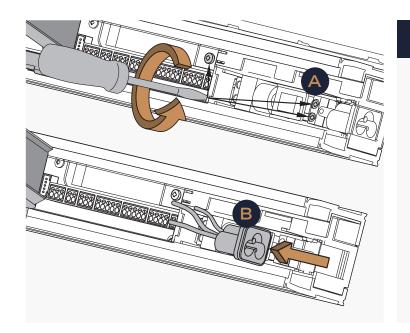


REMOVE POWER SUPPLY COVER

Loosen the screw in the Cover of the Power Supply housing and remove the Cover (on the side where the connections are located).

IMPORTANT

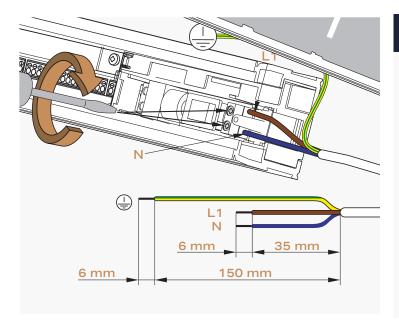
Keep the Cover and the screw in a safe place as you will require it later.



REMOVE INTERNAL SOCKET

Carefully open the Cover of the Control Unit housing by levering it out with the tip of a flat-bladed screwdriver.

Relax the Screws of the Connection Terminals and remove the internal shockproof socket.

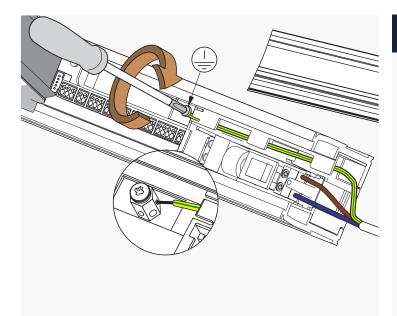


LIVE & NEUTRAL CONNECTIONS

Cut the Leads to length, dismantle them and connect $\bf L1$ and $\bf N$ to the Connection Terminals of the Power Supply as shown.

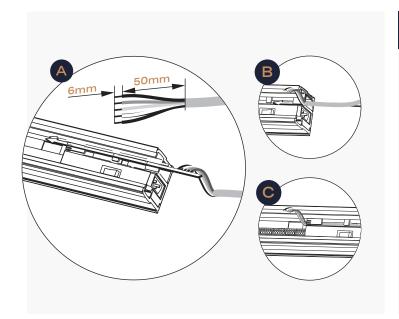
IMPORTANT

Before starting with the installation, make sure that the Power Supply line is dead (de-energized).



EARTH CONNECTION

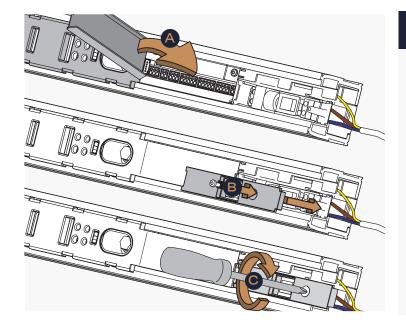
Lay the grounding line through the housing of the operator as shown in the picture and connect it to the Grounding Terminal (PE).



CONNECT EXTERNAL ACCESSORIES

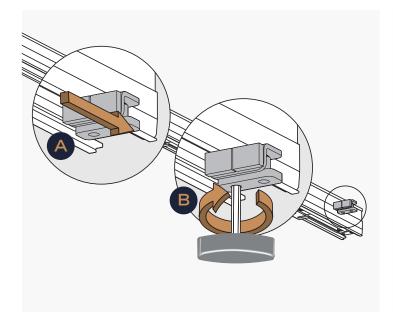
Connect all external accessories, except Safety Sensors. The cables for Sensors, Push-buttons etc have to be laid inside a Cable Channel as indicated in the picture.

If additional Accessories are not required move to next Step.



CLOSE AND SCREW-DOWN COVERS

Close the Cover of the Control Unit housing. Fix and screw down the Cover of the Power Supply housing.



RETURN END STOP

Move the End Stop to the end of the Channel and screw it down thoroughly.

IMPORTANT

The End Stop must not overlap.

Commissioning and inspection

These checks should be carried out on a routine basis to be determined based on risk assessment.

RISK ASSESSMENT GUIDANCE

Low energy movement of the doorset is generally not protected with additional protective devices because the kinetic energy levels are not considered to be hazardous. However, use of low energy doorset movement should only be considered when the risk assessment has taken account of elderly, frail and disabled users and indicates that the risk to these users is low.

The result of the final verification and operational tests should be recorded in a log book. The log book shall refer to applicable instruction for use and shall have space available to record:

- **1.** All maintenance and repairs carried out, including recommendations (Improvements, replacements etc)
- 2. All significant changes or upgrading carried out
- 3. Any work undertaken to the doorset
- 4. Name, date, signature of designated responsible person
- **5.** Include copies of the 'Check Details' table below, filled out at periods defined in the risk assessment

INSPECTION RECORD Name	Signed Date / /	
✓or X Initials	✓or X Initia	als
Risk assessment carried out within the last 12 months.	Test Door closing time (see Table F.2 Min Time for 90% Travel Distance).	
Check Door and pocket condition ensuring no sharp edges* or other hazards. Check	Test auto reverse function works when the Door contacts an obstruction.	
all essential components are fitted and in serviceable condition. *If flush handles are fitted then the Doors stop should be set so the handle remains out of the pocket when open to mitigate risk of injury.	If auto close is enabled ensure users are aware of this function.	
Isolate the power to the doorset and check to ensure manual operation is achievable.	If switches are present, check condition and function.	
Restore power and check Door cycles twice whilst initiating, led lamp should remain green when finished.	If additional sensors have been fitted following risk assessment check condition and function.	

Table F.2 - Minimum Travelling Time per Doorset vs. Mass of Door Leaf

Mass of Door Leaf (Kilogram)	80kg	70kg	60kg	50kg	40kg	30kg	20kg	10kg	90% Travel Distance Per Leaf
Max. Travelling Speed (Meters/Sec)	0.21mps	0.22mps	0.24mps	0.26mps	0.29mps	0.34mps	0.41mps	0.58mps	(Meters)
Min. Travelling Time (Seconds)	3.5s 3.9s 4.4s 4.9s 5.4s	B.s 3.7s A.s 4.6s A.s	3.0s 3.4s 3.8s C.s 4.7s	2.7s A.s 3.5s 3.9s C.s	2.5s 2.8s A.s 3.5s 3.8s	A.s 2.4s 2.7s 3.0s C.s	1.8s 2.0s B.s 2.5s 2.7s	C.s 1.4s 1.6s 1.8s 1.9s	0.7m 0.8m 0.9m 1.0m A.m



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