TORMAX®
AUTOMATIC

Installation and Service Manual

iMotion®1301 / 1302 Swing Door Operators

Warning - To reduce the risk of injury of persons - Use this operator only with swing doors.

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Important Information

SAFETY/ WARNINGS SYMBOLS

NOTE indicates important information specific to the process or steps being performed.

ELECTRICAL VOLTAGE indicates that electrical voltage is present and that caution should be taken to prevent injury or property damage.

CAUTION indicates failure to follow instructions may result in personal injury and/ or property damage.

OPTIONAL COMPONENTS indicates components that are not installed in all systems.

WARNING - Failure to observe the information in this manual may result in personal Injury or damage to equipment. To reduce the risk of injury of persons use this operator only with pedestrian swing doors.
Save these instructions for future reference.

Installation and Service

Any and all TORMAX equipment must be installed, serviced and inspected by an *AAADM* Certified technician, to meet the current ANSI A156.10 and/ or ANSI A156.19 standard and any local or state building codes.

The person responsible for the daily operation and maintenance of the system is referred to as “End-User”.

It is the technicians responsibility:

1. Review the functions of the equipment with the end-user. *Failure to do so, may lead to the improper use, could cause injury to persons and/ or damage to the equipment.*
2. Familiarize the end-user with the Daily Safety Check Decal and how to perform the walk test procedures.
3. Illustrate to the end-user how to place the door out of service (turn off power or place in P mode or OFF mode of operation), if the equipment does not perform as described in the Daily Safety Check Decal.
4. Recommend to the end-user to have their equipment inspected annually by an *AAADM* certified technician.

ANSI/ BHMA A156.10, A156.19 standards - Knowing Act Switch

Doors activated by a manual switch must have the switch installed in a location from which the operation of the door can be observed by the person operating the switch. Refer to the latest revision of ANSI/ BHMA A156.10 or A156.19 for location of Knowing Act switch and time delays.

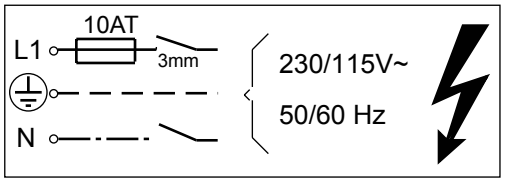
Electrical Requirements for Installation Personnel

Have a licensed electrician:

- Make all mains primary power connections in accordance to federal, state and local regulations.
- Route mains primary power from power distribution panel (10 amp circuit breaker minimum per operator) to the operator.
- Install a service switch or emergency shut OFF switch, if required by customer or per regulations. This is in addition to the mains circuit breaker to interrupt power, switch must be rated @ 10 amp minimum.

Mains Connection

Connection: N + L1 + PE protected on site with 10 AT, protective earth necessary
Power rating: 1 x 230 / 1 x 115 V AC (+5 %/ – 10 %) 50– 60 Hz, max. 250 W
Supply cable: Type H05VV-F, H05RR-F or flexible cord of type S, SO, SJ, SJO, ST, STO, SJT, SJTO or AFS



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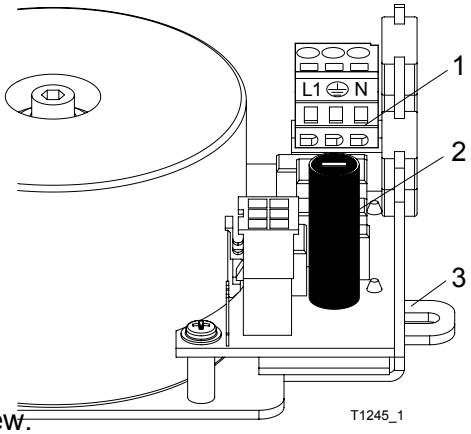
Before beginning the work described below, check that the mains primary power is switched off. If required place “Out of Service” tag on circuit breaker or service switch.

- Route the mains connection to the operator along the side of the power supply.
- The edges must be rounded off on all bushings for the mains connection.
- Loosen power supply bar (3) and pull out power supply.
- Route mains cable either through the header end cap or through header back plate.
- Use only cable bushings made from synthetic. materials Metallic bushings must be grounded.
- Connect mains cable to terminal (1) as shown in the illustration.
- Check the correct setting of the voltage selector switch (2). Re-insert power supply and tighten screw.



T1245_1

- Secure mains cable with a cable strap at a synthetic lug on the base plate.
- Do not apply power to the door until ready for commissioning.
- A system switch (FCP or 3-position switch) must be on site.

Make sure that the mains cable is secured properly to prevent it from getting into the moving parts of the operator or door system.

The commissioning of the system may only take place through a qualified person and under consideration of the required documents for commissioning and examination!

Important Information

Glazing

The glazing material of all doors shall comply with the requirements of ANSI Z97.1, American National Standard Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.

Intended Installation Environment

The 1301 and 1302 are non-handed swing door operators that can be used on interior or exterior doors. The operator is mounted above the door on the inside of the building. 1301 surface applied operators must be mounted on the inside of the building. Any other use, or any use exceeding this aim, is deemed as not used in accordance with its intended purpose.

The manufacturer will not be liable for damages resulting from such applications or warranty the product. Arbitrary changes to the system will exempt the manufacturer from any liability for damage resulting from this.

The 1301/ 1302 can be utilized as a Low Energy operator and comply with ANSI A156.19 standard, or setup to operate as a Power Operated Pedestrian Door and comply with ANSI A156.10 standard.

Upon completion of the installation the technician should perform an AAADM inspection to ensure that the door complies to the appropriate standard in which it is setup to operate within.

Door Operation

The 1301/ 1302 mode of operation is control by a 3-position switch (standard) or a (FCP) Functional Control Panel (optional). The primary mode of operations are:

Off - The door remains in the closed position with lock engaged, but can be opened by the Key Switch activating input.

Automatic - Two-way traffic, typical setting for normal operation. Allows the interior & exterior sensors, Key switch and safety devices (if applicable) to operate the door.

(P) Manual - The door operates as a manual door and utilizes spring closing. Lock remains unlocked during this mode. Use this mode of operation to place door out of service.

Upon a power loss the operation of the 1301/ 1302 operating system will function according to specifications:

- Immediate spring closing.
- The operator functions as a manual door closure.
- Lock function will operate to specification (fail secure/ fail safe).
- Continued operation , if equipped with a battery backup.

Important Information

The 1302 has for emergency egress purposes a switch that when the door is pushed in the opposite direction of normal operation (breakout) the switch interrupts 24 volts to the control. This prevents the door from opening automatically, until the door is pushed back into normal operating position. Resetting the breakout switch, reapplying 24 volts to the control.

Operator Applications

1301 Surface Applied (SA)

The 1301 (SA) operator is power open and spring close. A FCP will be needed to program the operator.

The operator has 2 standard applications:

Outswing - The operator pushes the door open.
Inswing - The operator pulls the door open.

Within each standard application there are important points to know and consider during the installation process.

Arm types: Standard (aluminum/ steel) or Stainless Steel

Outswing Application: 8-10 lbs. of manual opening force (Low Energy ANSI A156.19) or Knowing Act Door Activation (Power Operated Pedestrian Door ANSI A156.10)

18-20 lbs. of manual opening force (Power Operated Pedestrian Door ANSI A156.10)

OutSwing: 0”- 4 3/16” reveal, non-handed arm
4 1/8” - 9 7/8“ reveal, handed arm

InSwing: 0” reveal, non-handed arm
0“ - 6” reveal, handed arm

1302 Overhead Concealed (OHC)

The 1302 (OHC) operator is power open and spring closed. A FCP will be needed to program the operator.

For emergency egress purposes the 1302 has a switch that when the door is pushed in the opposite direction of normal operation (breakout) the switch interrupts 24 volts to the control.

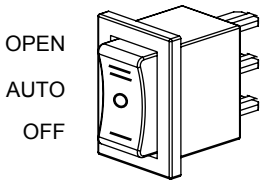
The 1302 (OHC) unit can be ordered in many different applications:

- Right hand(RH) or Left hand(LH) swing with or without panic (breakout).
- Simultaneous pair (1)RH and (1)LH swing with or without panic.
- Double Egress (2) RH or (2) LH swing units
- With or without Jambs and/ or threshold.

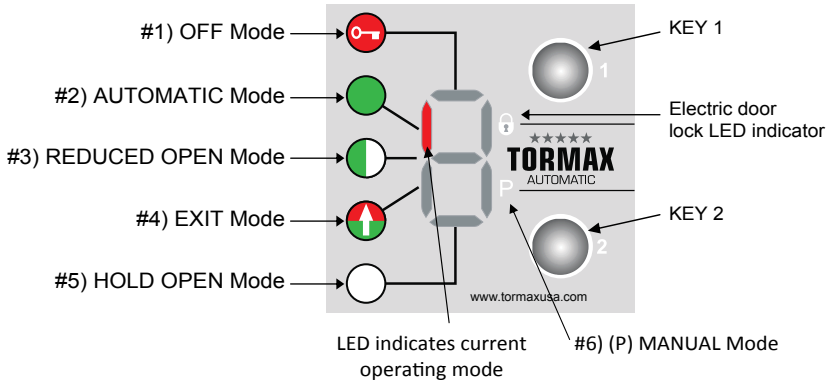
Modes of Door Operation

Modes of operation can be selected with the 6 position Functional Control Panel (FCP). The technician will review the appropriate mode switch with the end-user.

Standard:
1301
Optional:
1302



Standard:
1302
Optional:
1301



1. **OFF** - The interior and exterior activators are inhibited after the door reached the fully closed position, if an electric lock is present it will be activated. Door will cycle open, if a signal is sent to the key switch input.

2. **AUTOMATIC** - Typical setting for normal 2-way traffic operation with interior and exterior activators, key switch input and safety devices operating the door.

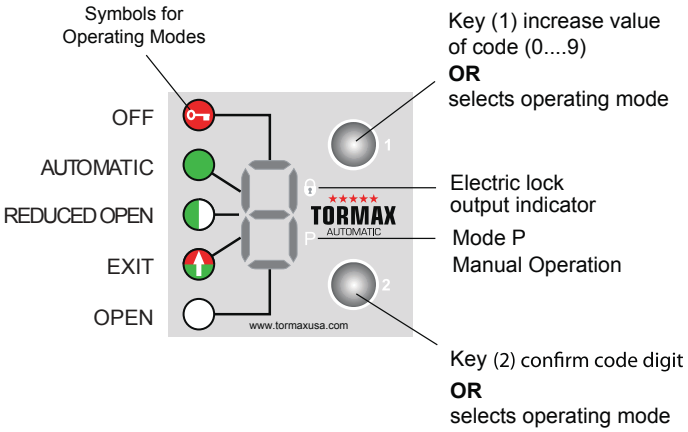
3. **REDUCED OPERATING** - Allows the door to open with a reduced opening width. Activators and safety devices operate the same as automatic mode.

4. **EXIT** - (1-way traffic) Allows interior activator and key switch inputs to operate the door. The exterior activator input is inhibited from opening the door while the door is closed. When the door is opened/ closing the exterior activator becomes operational and will re-open a closing door.

5. **HOLD OPEN** - Hold and maintains the door in the open position.

6. **(P) MANUAL OPERATION** - Allows the door to be used manually without the use of sensors. Push and pull motion applied to the door to open and close the door.

Programming with the FCP



The Functional Control Panel (FCP) has 2 function levels:

Level 1 - End user

- Select operating modes
- Display three-digit fault codes.
- Access protected eliminates unauthorized programming.

Level 2 - AAADM Certified Technician

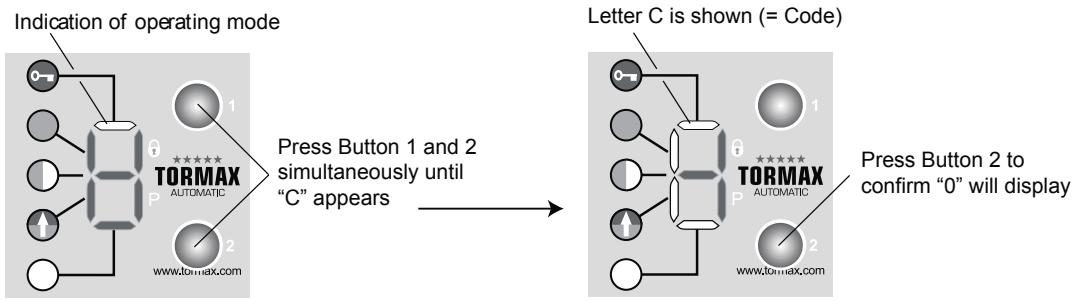
- Access protection, access code (111)
- Programming door system to comply with the current ANSI 156.10 standard.
- Displays currently set parameter.
- 10 min time out after the last programming entry is made. The technician will be required to enter the access code (111) to make further adjustments.

Visit TORMAXUSA.com for a online Tutorial.

Programming with the FCP

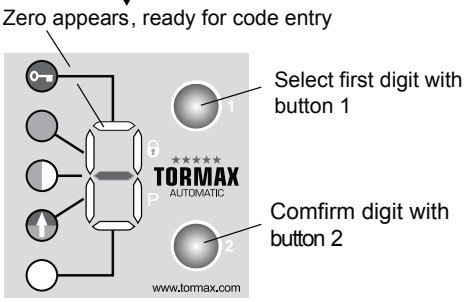
Button 1 - The value of the number / letter is increased by one (0 - 9,a,b,c,...back to 0)
Button 2 - Displayed character is confirmed / sent to control

1) Start Access Code



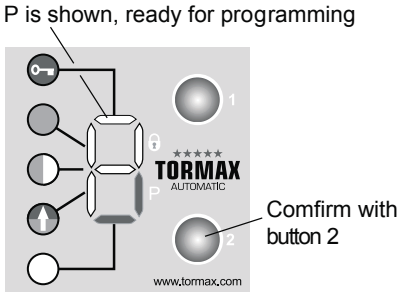
2) Entering Access Code 111

A) Select the number "1" with button 1, confirm with button 2.
B) Repeat this step two more times entering the code 1-1-1.



3) Start Programming Level

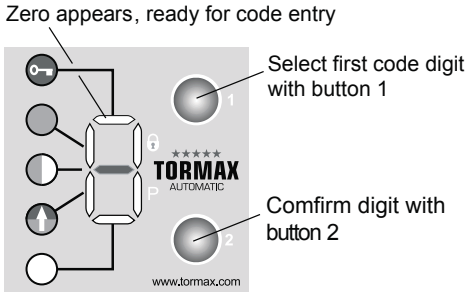
A) Press buttons 1 and 2 simultaneously until "P" appears.
B) Confirm with button 2.



4. Entering Parameter Code

A) Select the number "1" with button 1, confirm with button 2.
B) Select and confirm the 2nd and 3rd code digits using the same sequence as shown in Step 2.

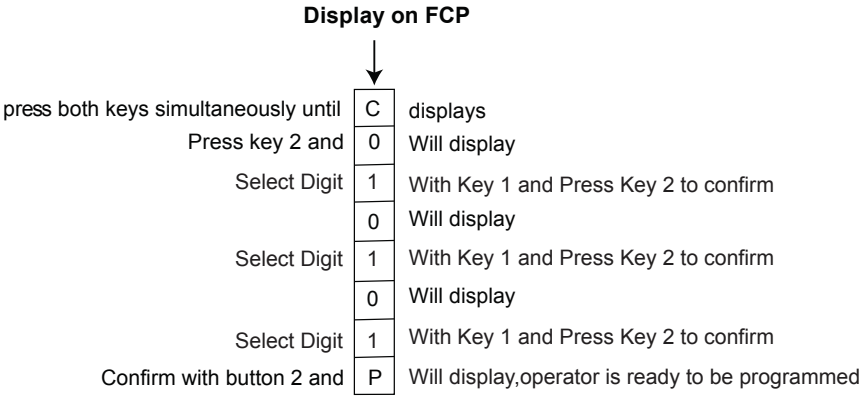
Note: After confirming the 2nd number the 3rd number will be blinking indicating the setting of the function.



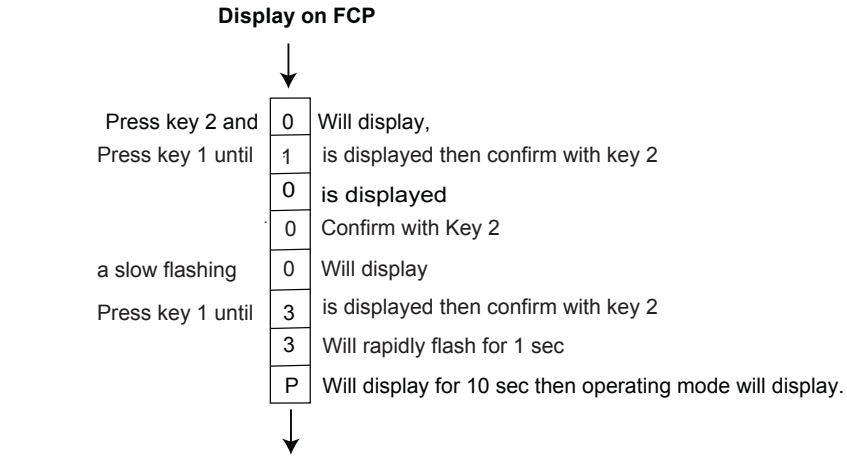
Time out occurs, if no input is made during 10 s, the FCP reverts back to displaying P, then displays the operating mode.

Programming with the FCP

Example 1: Enter access code 111



Example 2: Enter code 103 to adjust the Hold Open time for 2 sec



Within 10 minutes you can enter the programming mode by pressing both keys simultaneously and P will display. If no further adjustments are made after 10 minutes the FCP will time out and require access code re-entry. Repeat example 1.

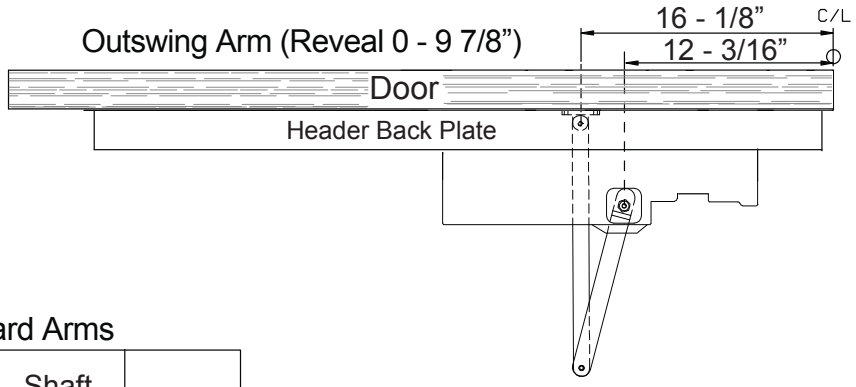
After the 2nd code digit has been confirmed, the flashing digit show set value of the parameter (= 3rd digit of the parameter code). If the value is confirmed the FCP will rapidly flash for 1 sec then display “P” again.

Quickly pressing and releasing both buttons simultaneously the FCP will return to displaying the mode of operation.

Applications - 1301 Outswing Full Pedestrian 18 - 20 lbs. of spring holding force

Refer to page 12 for programming steps.

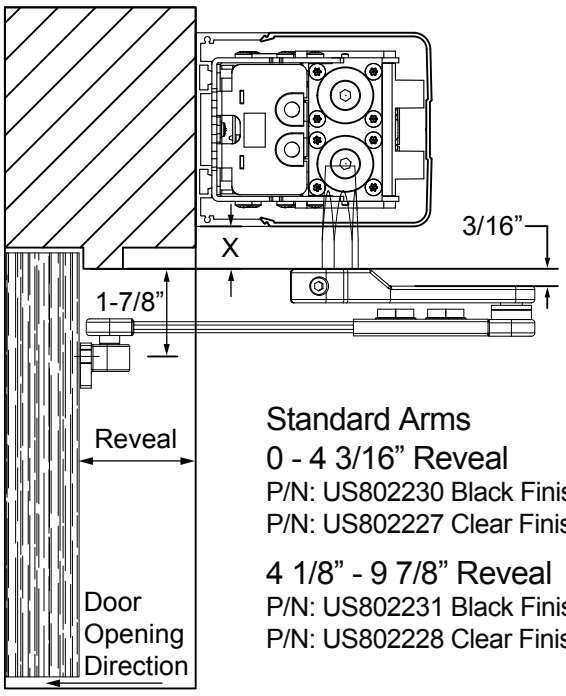
Do not tighten output Shaft to the operator until programming step 3. Arm Preload on Page 12.



Standard Arms

Part Number	Shaft Length	X
141032 (STD)	3-7/32"	1-1/4"
141106 (D.E.)	3-15/16"	1-15/16"
141205 (Cust)	4-27/32"	2-7/8"

X = Mounting Height

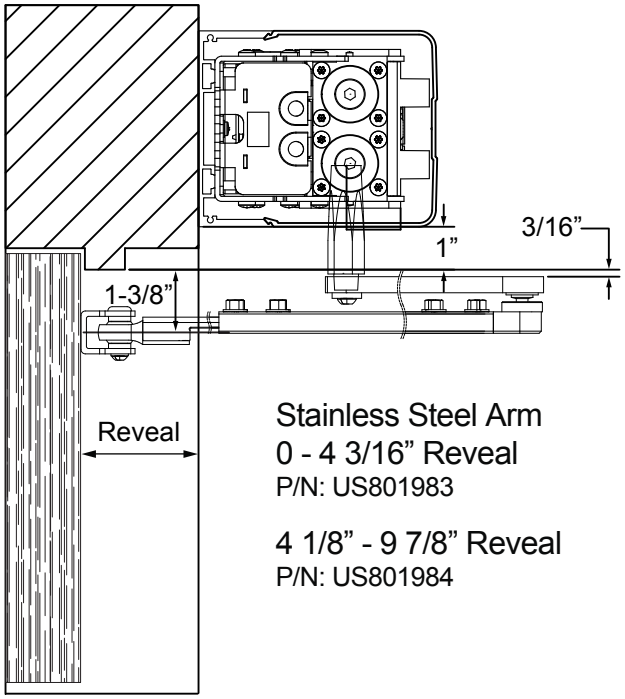


Standard Arms
0 - 4 3/16" Reveal
P/N: US802230 Black Finish
P/N: US802227 Clear Finish

4 1/8" - 9 7/8" Reveal
P/N: US802231 Black Finish
P/N: US802228 Clear Finish

Stainless Steel Shaft

Part Number	Shaft Length	Mounting Height
US801966	3-7/32"	1"



Stainless Steel Arm
0 - 4 3/16" Reveal
P/N: US801983

4 1/8" - 9 7/8" Reveal
P/N: US801984

For extended reveal Contact TORMAX

Applications - 1301 Outswing Full Pedestrian 18 - 20 lbs. of spring holding force

Refer to page 11 for mechanical placement and dimensions. Refer to page 4 for primary power connections.

Place 3-position switch if equipped in the AUTO position (center position)

1. Operator Type (H11 displayed on FCP = not yet programmed)

Enter **Code 015** to designate the operator as a 1301.

2. Door Leaf Weight (H12 displayed on FCP = not yet programmed)

Enter **Code 07?** for the corresponding value for the proper estimated door width and weight.

Example:
36" door weighing 440 lb's will have **code 078** .

Door	Width (in)								
	27"	32"	36"	40"	44"	48"	50"	56"	60"
`Weight	Code 07 ..								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

3. Arm Preload (H13 displayed on FCP = preload not selected yet)

Enter **Code 092** then **select Hold Open mode**, motor will rotate 20 degrees then stop.

Place the arm to the configuration illustrated on page 10, while the door is in the full closed position tighten the shaft 6mm bolt to 25 ft. lb.'s.

Enter **Code 090** to terminate the Preload procedure.

4. Electric Lock Output

Enter **Code: 570** for fail secure **Code: 571** for fail safe **Code: 572** turn off the electric lock

We recommend to turn off the electric lock as it is a default setting with the operator and the door does not have electric lock installed on it.

5. Safety slow - *If door mounted safety sensors are installed.*

Enter **Code 641** for to program SF1

6. Automatic Configuration (H14 displayed on FCP= automatic configuration required)

Enter **Code 021** to begin the auto configuration which consists of the following:

- NO or NC will be automatically detected on the safety inputs (SF1 - SF4). Make sure the safety sensors are not in detection when 021 is entered.
- Battery backup US801102
- I/O module US801405

7. Set FCP to (P) Manual/ Park mode

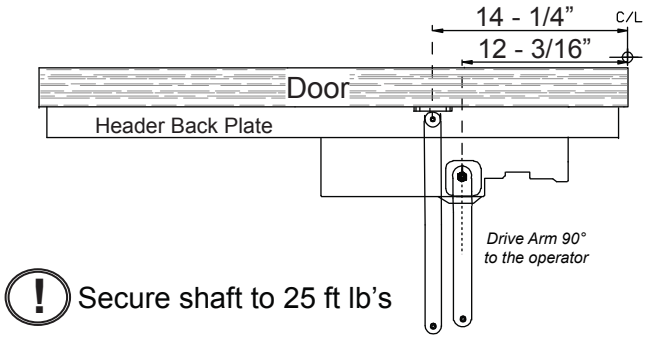
Continued on page 22 for Teach In

Applications - 1301 Outswing Low Energy 8 - 10 lbs. of spring holding force

Refer to page 14 for programming steps.

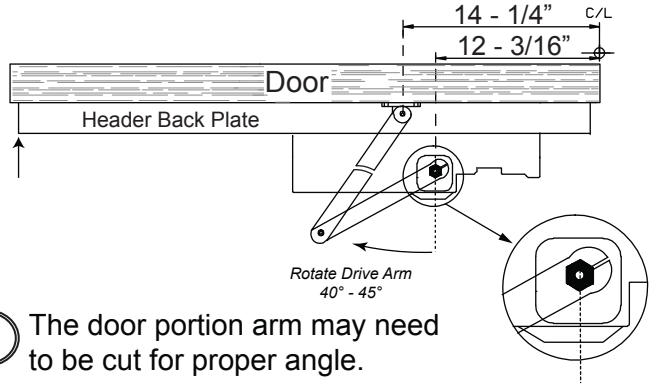
1. Tighten output shaft and operator arm 90° to the operator as shown in figure 1.
2. Manually rotate arm 40-45°and connect the ball joint of the door portion arm. Door portion arm may need to be cut to make connection. Note output shaft orientation as shown in figure 2.

Outswing Arm (Reveal 0 - 9 7/8")



Secure shaft to 25 ft lb's

Figure 1



The door portion arm may need to be cut for proper angle.

Figure 2

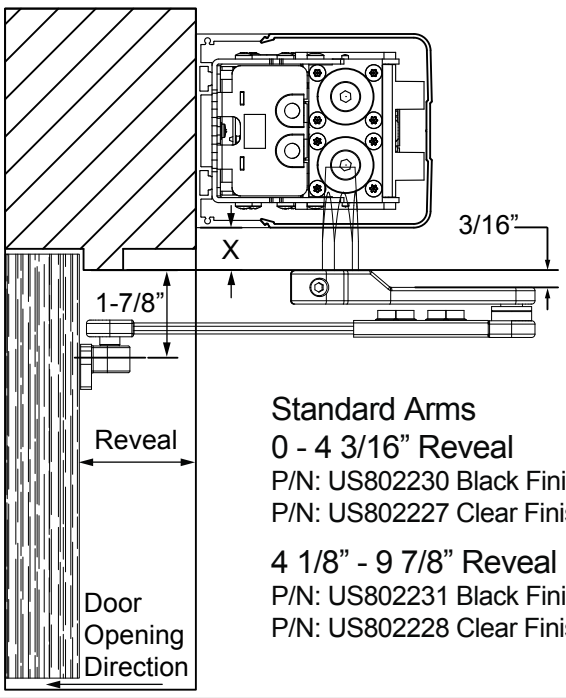
Standard Shafts

Part Number	Shaft Length	X
141032 (STD)	3-7/32"	1-1/4"
141106 (D.E.)	3-15/16"	1-15/16"
141205 (Cust)	4-27/32"	2-7/8"

X = Mounting Height

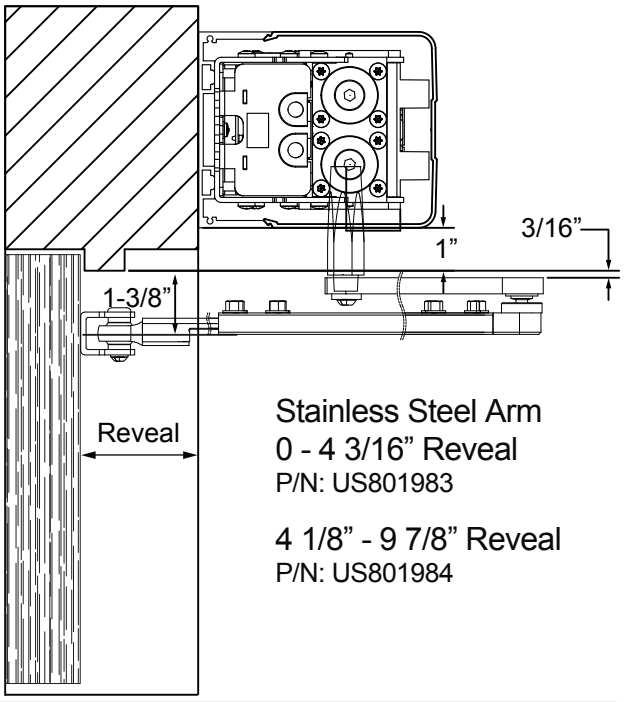
Stainless Steel Shaft

Part Number	Shaft Length	Mounting Height
US801966	3-7/32"	1"



Standard Arms
0 - 4 3/16" Reveal
P/N: US802230 Black Finish
P/N: US802227 Clear Finish

4 1/8" - 9 7/8" Reveal
P/N: US802231 Black Finish
P/N: US802228 Clear Finish



Stainless Steel Arm
0 - 4 3/16" Reveal
P/N: US801983

4 1/8" - 9 7/8" Reveal
P/N: US801984

Applications - 1301 Outswing Low Energy 8 - 10 lbs. of spring holding force

Refer to page 13 for mechanical placement and dimensions. Refer to page 4 for primary power connections.

Place 3-position switch if equipped in the AUTO position (center position)

1. Operator Type (H11 displayed on FCP = not yet programmed)

Enter **Code 015** to designate the operator as a 1301.

2. Door Leaf Weight (H12 displayed on FCP = not yet programmed)

Enter **Code 07?** for the corresponding value for the proper estimated door width and weight.

Example:
36" door weighing 440 lb's will have **code 078** .

Door	Width (in)								
	27"	**32"**	**36"**	**40"**	**44"**	**48"**	**50"**	**56"**	**60"**
`Weight	**Code 07 ..**								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

3. Arm Preload (H13 displayed on FCP = preload not selected yet)

See page 12 , follow the directions noted in steps I and 2 carefully, then continue with programming.

Enter **Code 092** then select **Hold Open mode**, the door will open a few inches then stop.

Enter **Code 090** to terminate the Preload procedure and the door will return to the closed position.

4. Electric Lock Output

Enter **Code: 570** for fail secure **Code: 571** for fail safe **Code: 572** turn off the electric lock

We recommend to turn off the electric lock as it is a default setting with the operator and the door does not have electric lock installed on it.

5. Safety slow - *If door mounted safety sensors are installed.*

Enter **Code 641** for to program SF1

6. Automatic Configuration (H14 displayed on FCP= automatic configuration required)

Enter **Code 021** to begin the auto configuration which consists of the following:

- NO or NC will be automatically detected on the safety inputs (SF1 - SF4). Make sure the safety sensors are not in detection when 021 is entered.
- Battery backup US801102
- I/O module US801405

7. Set FCP to (P) Manual/ Park mode

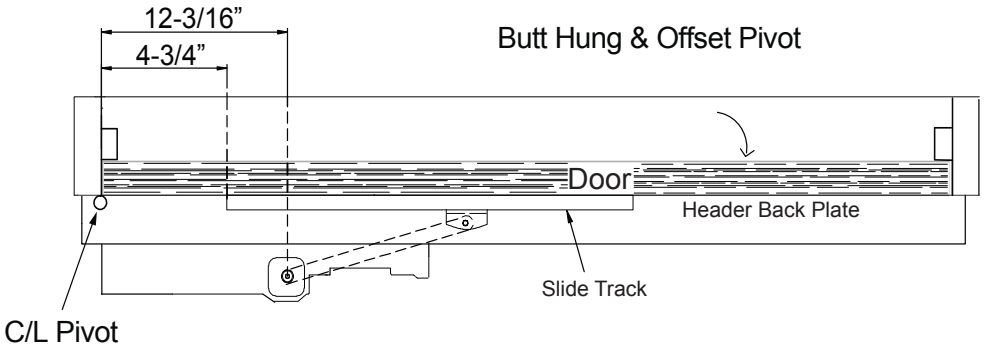
Continued on page 22 for Teach In

Applications - 1301 Inswing 0” Reveal

Refer to page 16 for programming steps.

Do not tighten output Shaft to the operator until programming step 3. Arm Preload on Page 16.

Inswing Arm (Reveal 0 “)



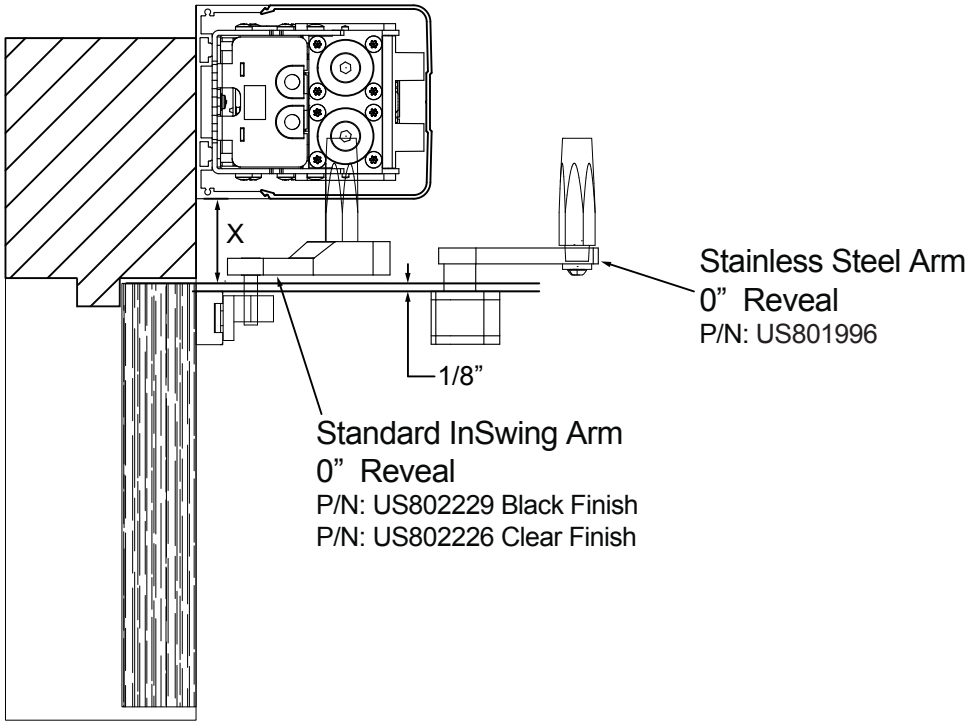
Standard Shafts

Part Number	Shaft Length	X
141032 (STD)	3-7/32”	2”
141020 (DE)	2-5/8”	1-3/8”
141205 (Cust)	4-27/32“	3-5/8”

X = Mounting Height

Stainless Steel Shaft

Part Number	Shaft Length	Mounting Height
US801966	3-7/32”	2”



Applications - 1301 Inswing 0” Reveal

Refer to page 15 for mechanical placement and dimensions. Refer to page 4 for primary power connections.

Place 3-position switch if equipped in the AUTO position (center position)

1. Operator Type (H11 displayed on FCP = not yet programmed)

Enter **Code 015** to designate the operator as a 1301.

2. Door Leaf Weight (H12 displayed on FCP = not yet programmed)

Enter **Code 07?** for the corresponding value for the proper estimated door width and weight.

Example:
36” door weighing 440 lb’s will have **code 078** .

Door	Width (in)								
	27”	32”	36”	40”	44”	48”	50”	56”	60”
`Weight	Code 07 ..								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

3. Arm Preload (H13 displayed on FCP = preload not selected yet)

Enter **Code 091** then select **Hold Open mode**, the motor will rotate 20 deg then stop.

Place the arm to the configuration illustrated on page 14, while the door is in the fully closed position tighten the shaft 6mm bolt to 25 ft lb’s.

Enter **Code 090** to terminate the Preload procedure.

4. Electric Lock Output

Enter **Code: 570** for fail secure **Code: 571** for fail safe **Code: 572** turn off the electric lock

We recommend to turn off the electric lock as it is a default setting with the operator and the door does not have electric lock installed on it.

5. Safety slow - *If door mounted safety sensors are installed.*

Enter **Code 641** for to program SF1

6. Automatic Configuration (H14 displayed on FCP= automatic configuration required)

Enter **Code 021** to begin the auto configuration which consists of the following:

- NO or NC will be automatically detected on the safety inputs (SF1 - SF4). Make sure the safety sensors are not in detection when 021 is entered.
- Battery backup US801102
- I/O module US801405

7. Set FCP to (P) Manual/ Park mode

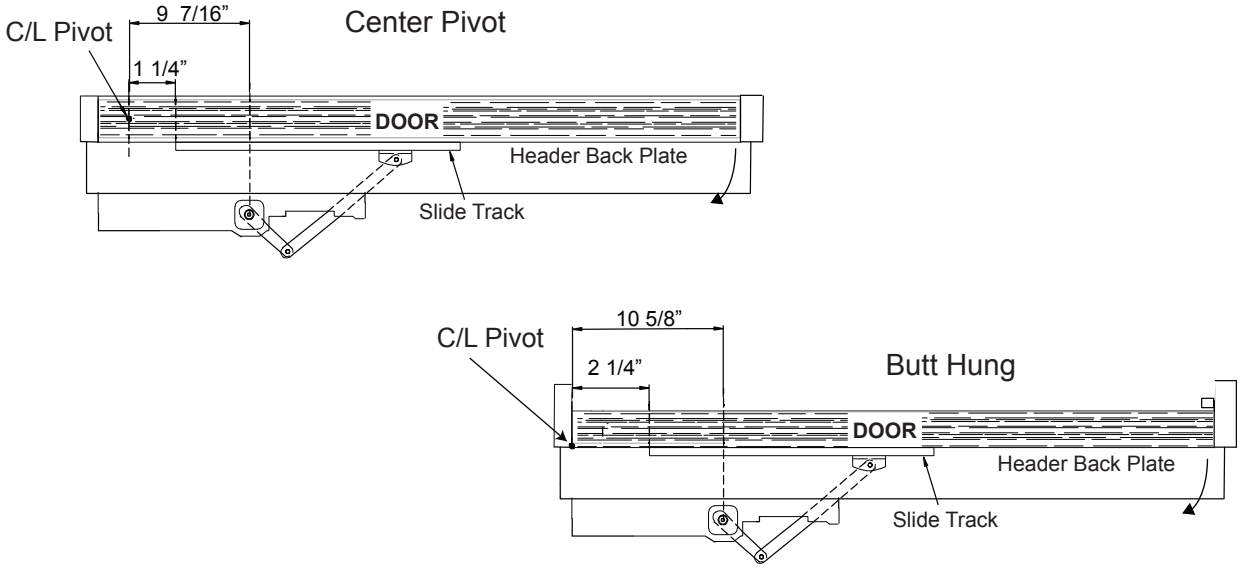
Continued on page 22 for Teach In

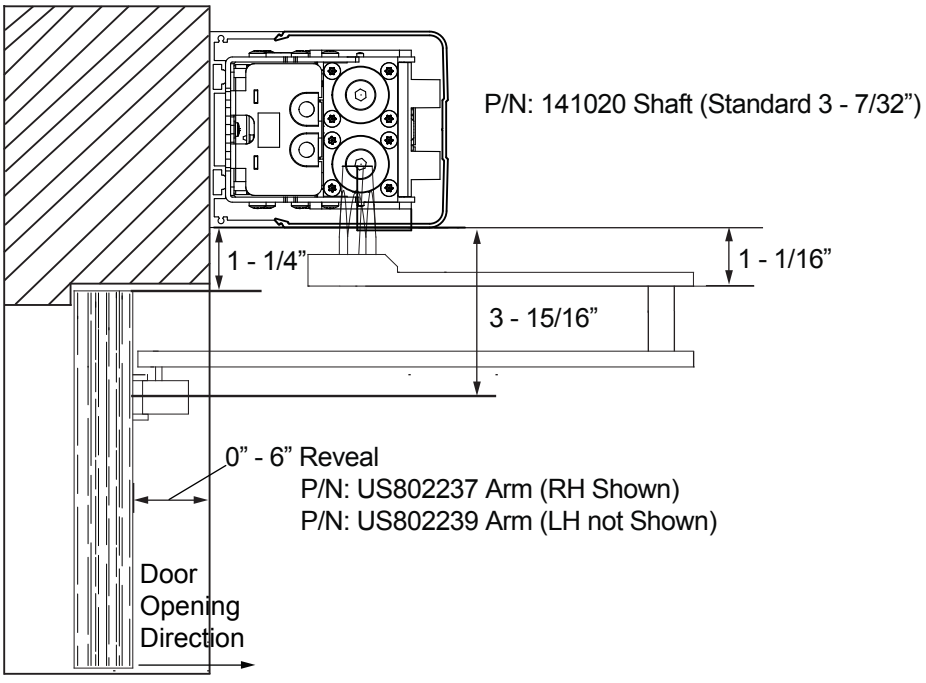
Applications - 1301 Inswing 0”- 6” Reveal

Refer to page 18 for programming steps.

Do not tighten output Shaft to the operator until programming step 3. Arm Preload on Page 18.

Inswing Arm (Reveal 0 “- 6”) RH Shown





Applications - 1301 Inswing 0”- 6” Reveal

Refer to page 17 for mechanical placement and dimensions. Refer to page 4 for primary power connections.

Place 3-position switch if equipped in the AUTO position (center position)

1. Operator Type (H11 displayed on FCP = not yet programmed)

Enter **Code 015** to designate the operator as a 1301.

2. Door Leaf Weight (H12 displayed on FCP = not yet programmed)

Enter **Code 07?** for the corresponding value for the proper estimated door width and weight.

Example:
36” door weighing 440 lb’s will have **code 078** .

Door	Width (in)								
	27”	32”	36”	40”	44”	48”	50”	56”	60”
`Weight	Code 07 ..								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

3. Arm Preload (H13 will be displayed on FCP = preload not selected yet)

Enter **Code 092** then select **Hold Open mode**, the motor will rotate 20 deg then stop.

Place the arm to the configuration illustrated on page 16, while the door is in the fully closed position tighten the shaft 6mm bolt to 25 ft lb’s.

Enter **Code 090** to terminate the Preload procedure.

4. Electric Lock Output

Enter **Code: 570** for fail secure **Code: 571** for fail safe **Code: 572** turn off the electric lock

We recommend to turn off the electric lock as it is a default setting with the operator and the door does not have electric lock installed on it.

5. Safety slow - *If door mounted safety sensors are installed.*

Enter **Code 641** for to program SF1

6. Automatic Configuration (H14 displayed on FCP= automatic configuration required)

Enter **Code 021** to begin the auto configuration which consists of the following:

- NO or NC will be automatically detected on the safety inputs (SF1 - SF4). Make sure the safety sensors are not in detection when 021 is entered.
- Battery backup US801102
- I/O module US801405

7. Set FCP to (P) Manual/ Park mode

Continued on page 22 for Teach In

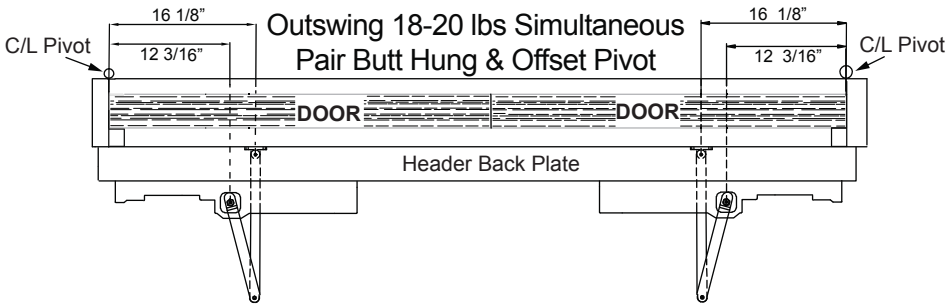
Applications - 1301 Double Egress/ Pairs

Refer to page 20 for wiring between operators, page 21 for programming steps.

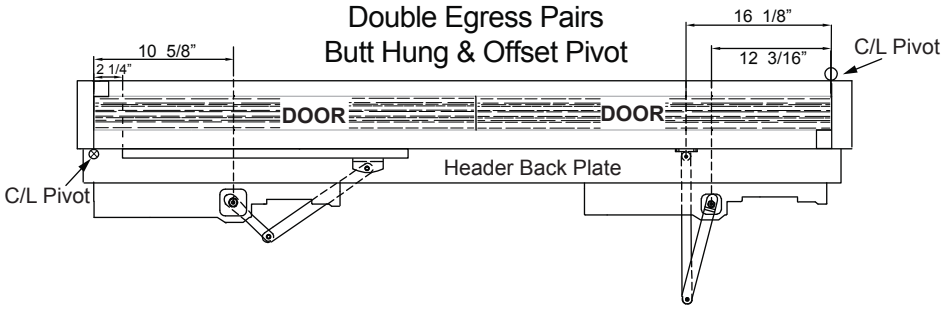
Do not tighten output Shaft to the operator until programming step 3. Arm Preload on Page 21.

Mounting height for operators in a continuous header:

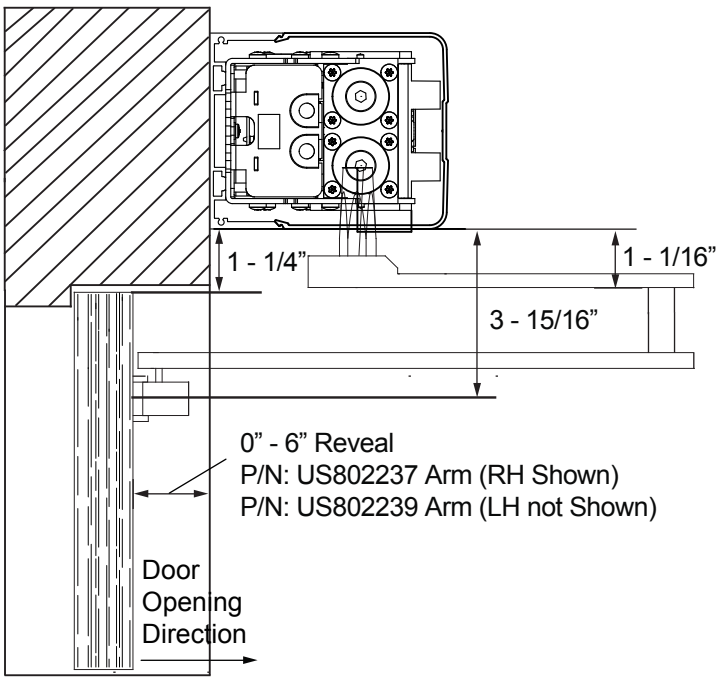
1. For simultaneous pair of doors, refer to the door arm single configuration for mounting details.



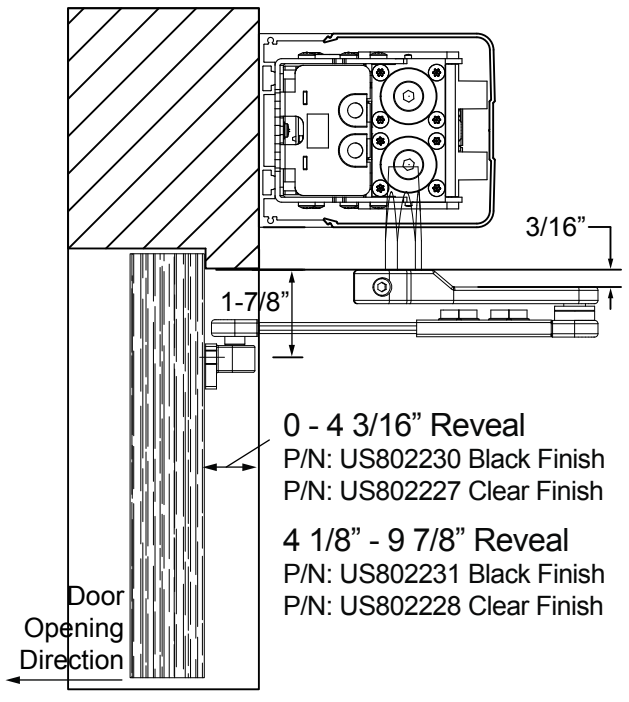
2. For dual egress pair of doors, mount header at Inswing mounting height.



P/N: 141020 Shaft (Standard 3 - 7/32")



P/N: 141106 Shaft (D.E. 3 - 15/16")



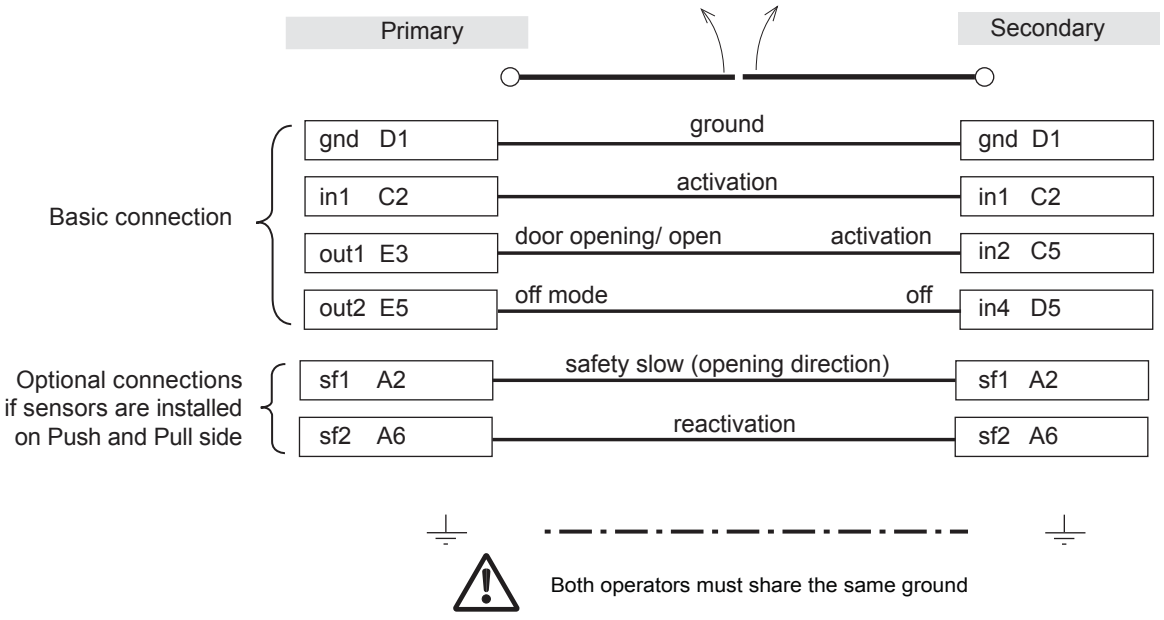
Applications - 1301 Double Egress/ Pair

Primary / Secondary Function

The purpose of this wiring is to synchronize a pair of 1301 or 1302 operators. The door leaves open at the same time when an activation signal is given (interior & exterior sensors or key switch) or by push- pull on the primary. If the door leaves overlap, the secondary drive (Overlapped leaf) should have a delay(See programming table).

- The hold open time of both the operators is determined by the primary.
- The mode of operation is selected by a 3 position switch or FCP connected to the primary.
- The opening and closing speeds are adjusted individually to prevent interference between doors with an astragal (overlap).
- During the loss of primary power, closing speeds are controlled by the spring.

Primary / Secondary wiring diagram



Applications - 1301 Double Egress/ Pair

Refer to page 19 for mechanical placement and dimensions. Refer to page 4 for primary power connections.
Place 3-position switch if equipped in the AUTO position (center position)

Primary operator, enter codes as instructed-

1. Factory reset - Enter Code 041

2. Operator type - Enter Code 015 to designate operator as 1301.

3. Door Leaf Weight - Enter Code 07?

Door	Width (in)								
	27"	32"	36"	40"	44"	48"	50"	56"	60"
`Weight	Code 07 ..								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

4. Arm preload - See applications pages 11,13, 15,17 for arm setup and code entry (091 or 092) then return to proceed to next step.

5. Enter Code 090 to terminate preload procedure

6. Safety slow - *If door mounted safety sensors are installed.*
Enter Code 641 to program sf1 as safety open slow.

7. Primary designation - Enter Code 689 and 695

8. Automatic configuration - Enter Code 021

9. Set FCP to (P) Manual/ Park mode

Secondary operator, enter codes as instructed-

10. Factory reset - Enter Code 041

11. Operator type - Enter Code 015 to designate operator as 1301.

12. Door Leaf Weight - Enter Code 07? refer to above chart.

13. Arm preload - See applications pages 11,13, 15,17 for arm setup and code entry (091 or 092) then return to proceed to next step.

14. Enter Code 090 to terminate preload procedure

15. Safety slow - *If door mounted safety sensors are installed.*
Enter Code 641 to program sf1

16. Automatic configuration - Enter Code 021

17. Set FCP to (P) Manual/ Park mode

Continued on page 22 for Teach In

Teach - In Process 1301

1. Door stop adjustment - Adjust the internal door stop as shown in figure 1 to achieve 90° door angle. The door arm should not pass beyond 90° as shown in figure 2. **For pair of doors adjust both units.**

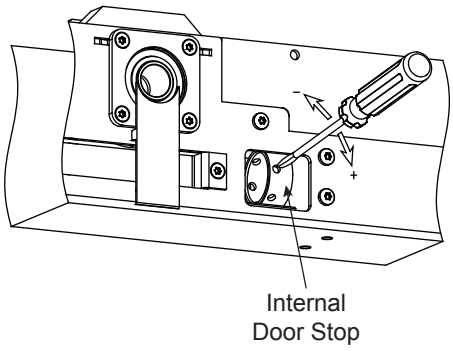


Figure 1

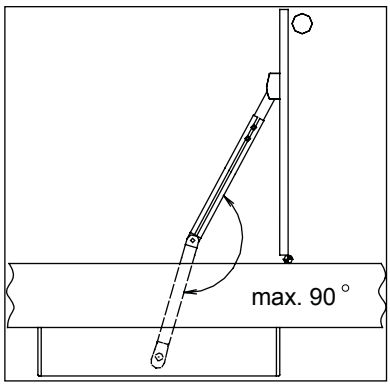


Figure 2

2. If equipped with door mounted sensors, adjust sensors as the manufacturer has recommended.

During the following Teach-in steps do not enter the swing/ pull side door mounted sensor /s zone during the first 4 opening cycles, as they are learning any permanent fixture (guide rails or walls)

3. Place the 3 position rocker switch in center position, Change the operating mode on FCP to Automatic (Solid Green Circle) as shown in figure 3. **For pair of doors, change both units to automatic.**

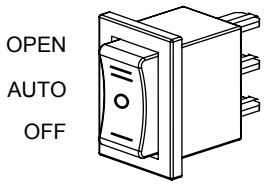
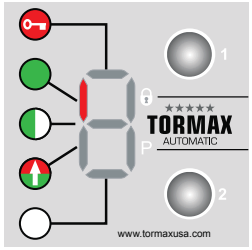


Figure 3

4. **For pair of doors activate primary unit by shorting momentarily C1- C2 . Singles** Momentarily press and release SW2 switch on the control see figure 4, *The first cycle will be slow as the door will look for a positive full open door stop.Continue to activate the door with the SW2 button or C1- C2 until an audible tone and the learning code (H66) is no longer displayed on FCP. Learning procedure lasts between 5-14 cycles.*



5. Further Functions and Parameters - See the programming table for other adjustments and functions.

6. Set the hold time on primary operator, if push-n-go is not required enter code 370 on primary. Forces, speeds, inputs, etc. are individually set on each operator.

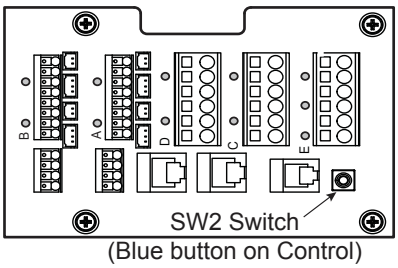
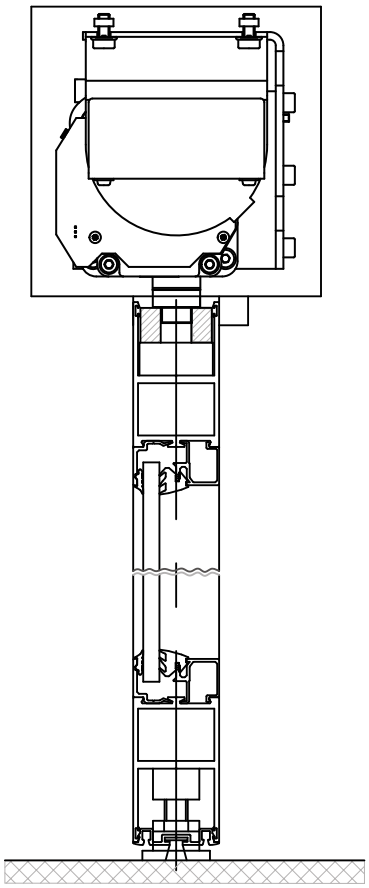


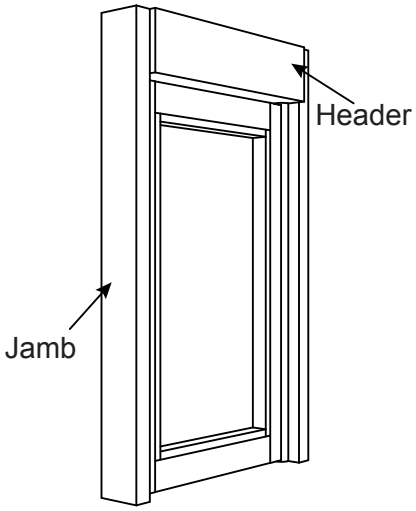
Figure 4

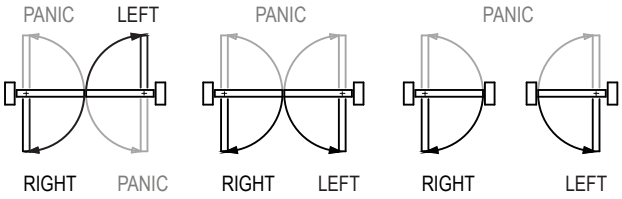
Always inspect your equipment to be compliant with ANSI A156.10 or A156.19 depending on your application.

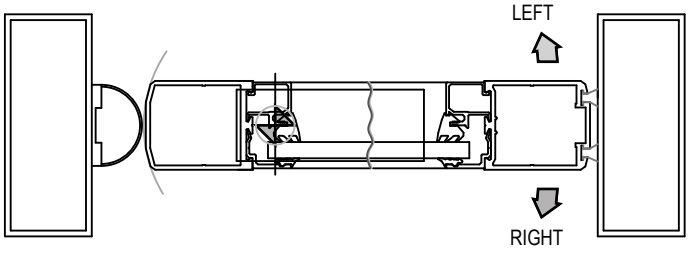
Applications - 1302

TORMAX recommends the use of a water level and plumb bob to properly install any door package provided. An improper installation could lead to premature wear of moving parts as well as an unpleasing appearance and /or service issues for the customer.



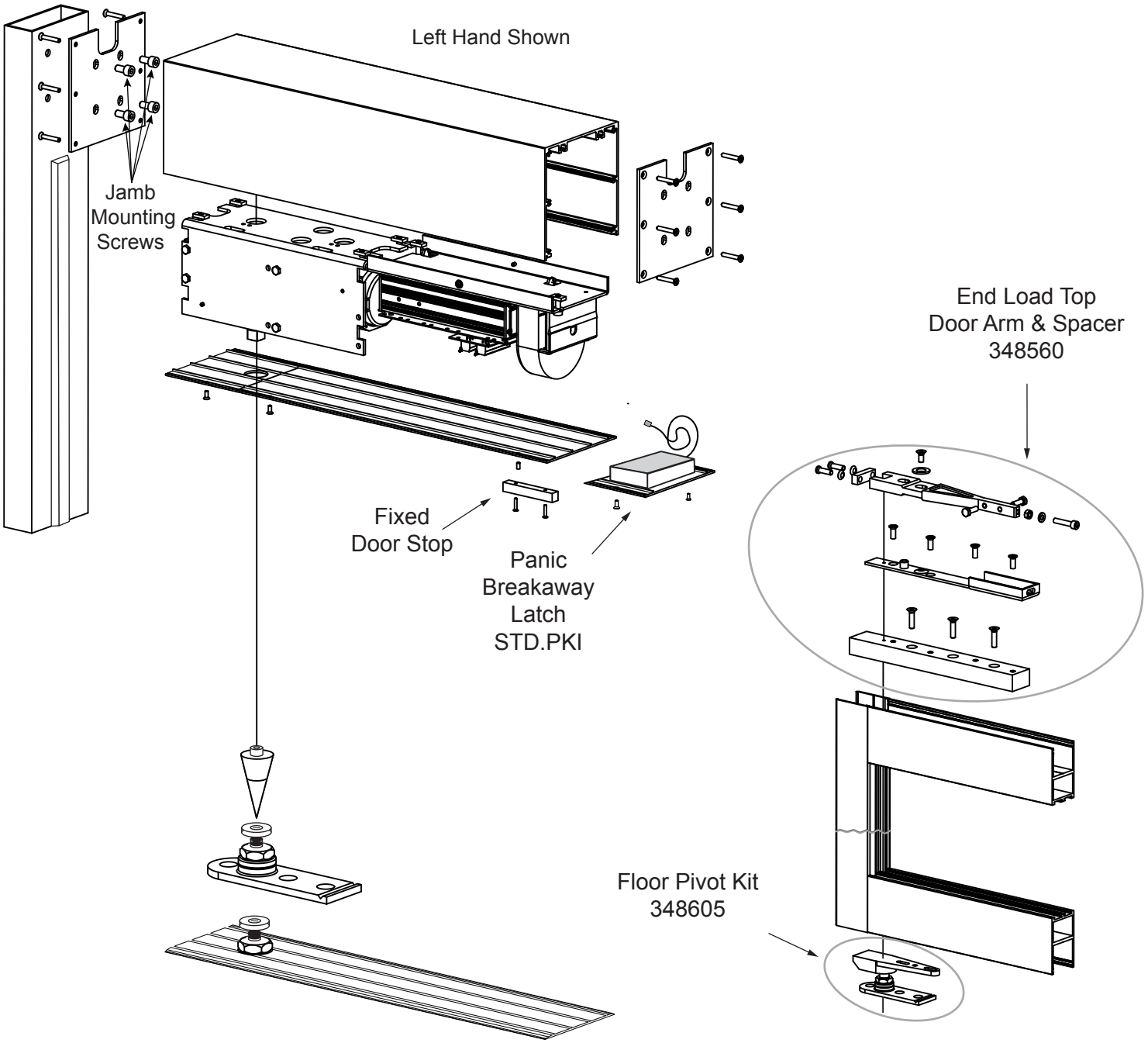






1302 Assembly

1. Assemble the jambs (if supplied) to the header with the supplied hardware. jamb with finger guard adjacent to the pivot side of header.



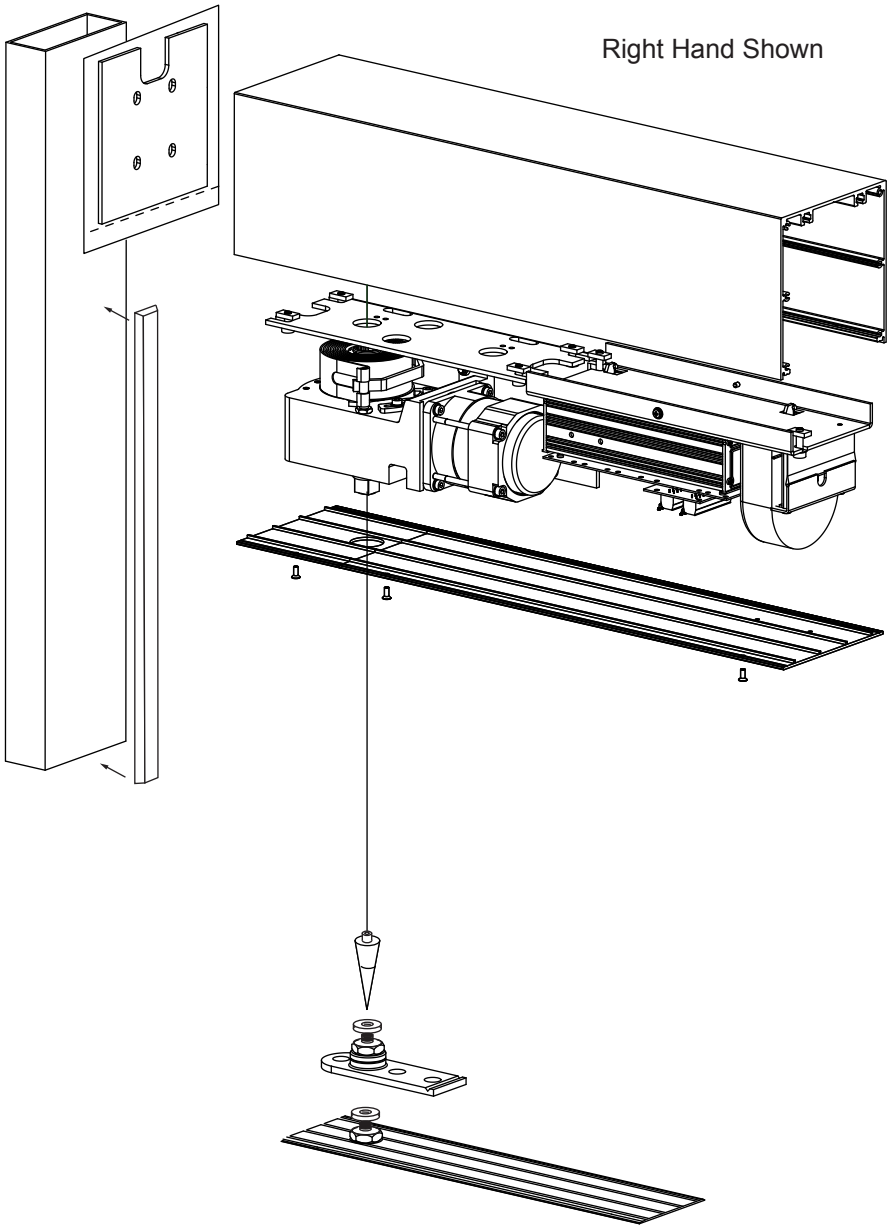
1302 Assembly - Jambs (By Other)

1. If jambs were not supplied determine mounting height of the header and use template to drill holes into the jambs.

2. Place and secure the header into the provided location using the appropriate hardware.

The unit should be installed so that outside forces acting on the door will not be able to move or twist the unit, allowing the fasteners to work themselves loose.

3. Install finger guard if equipped on jamb adjacent to pivot side of header.



1302 Drive Arm Shaft Installation

Do not supply power to the unit during these steps!

The drive arm shaft has an interference fit with the splines of the operator and should be driven into place.

1. Screw the supplied bolt into the drive arm shaft at least half way as shown in figure 1.

2. Insert the drive arm shaft into the operator with two sides of the square boss aligned parallel to the operator/ header as the splines will allow as shown in figure 2. This alignment pre-loads the arm and allows for breakout when equipped to do so.

3. Drive the shaft into the operator, until it bottoms out, secure shaft with supplied screw (M8 x 1.25 x 55 flat head) as shown in figure 3.

Shaft Insertion Bolt 140240-16

Drive Arm Shaft 345026

Figure 1

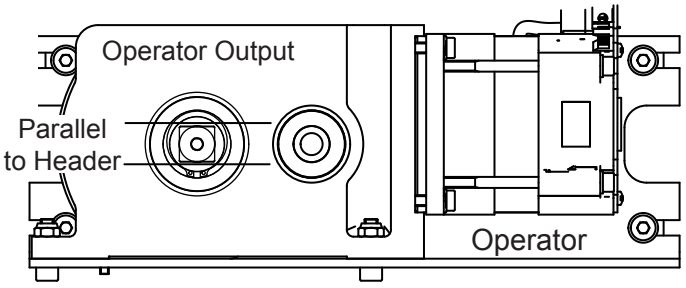


Figure 2

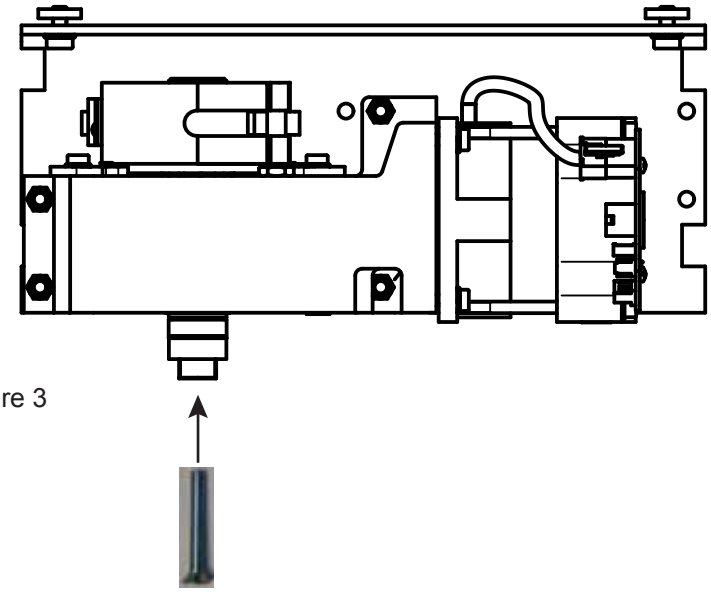


Figure 3

1302 Installation

Determine the highest point of the floor by using the water level (See figure 1)

1. Lift the door frame into place, raise the frame to the highest point of the floor determined previously. Shim appropriately, leveling the header. See figure 1.

2. Plumb and secure the jambs with the appropriate hardware for the material securing to. See figure 1

3. If limited area is available to secure the jambs an “L” bracket may be used. See figure 2

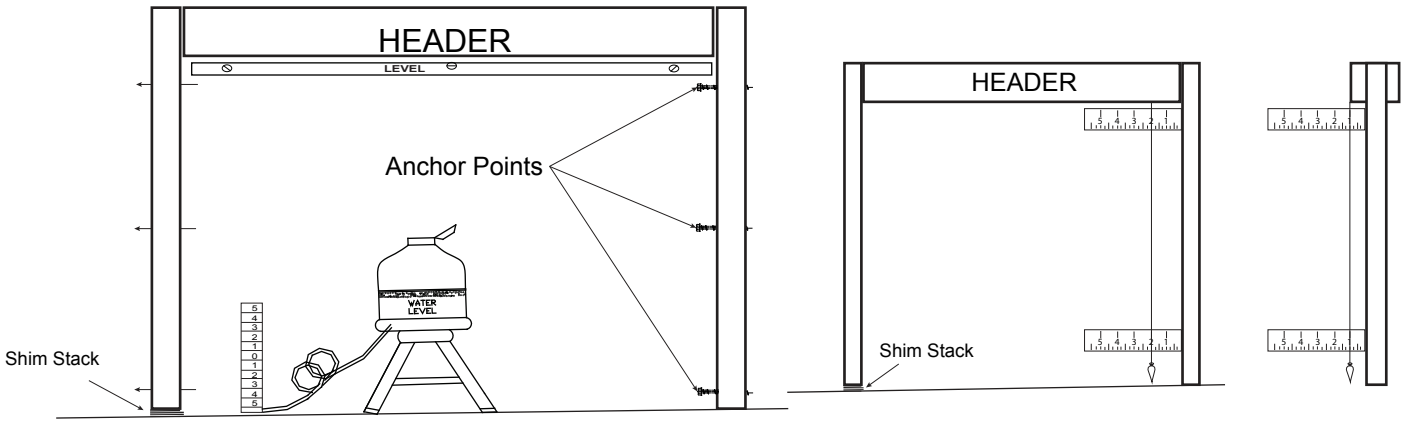


Figure 1

L- brackets should be installed to provide the most support in the least visible location possible.

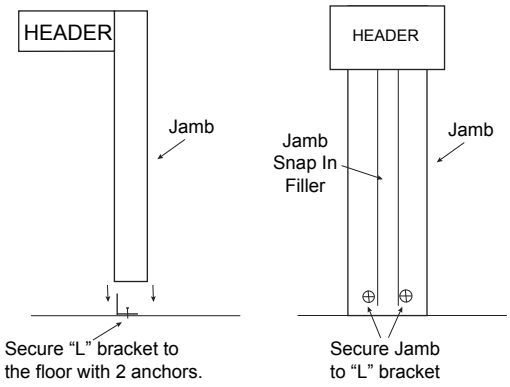
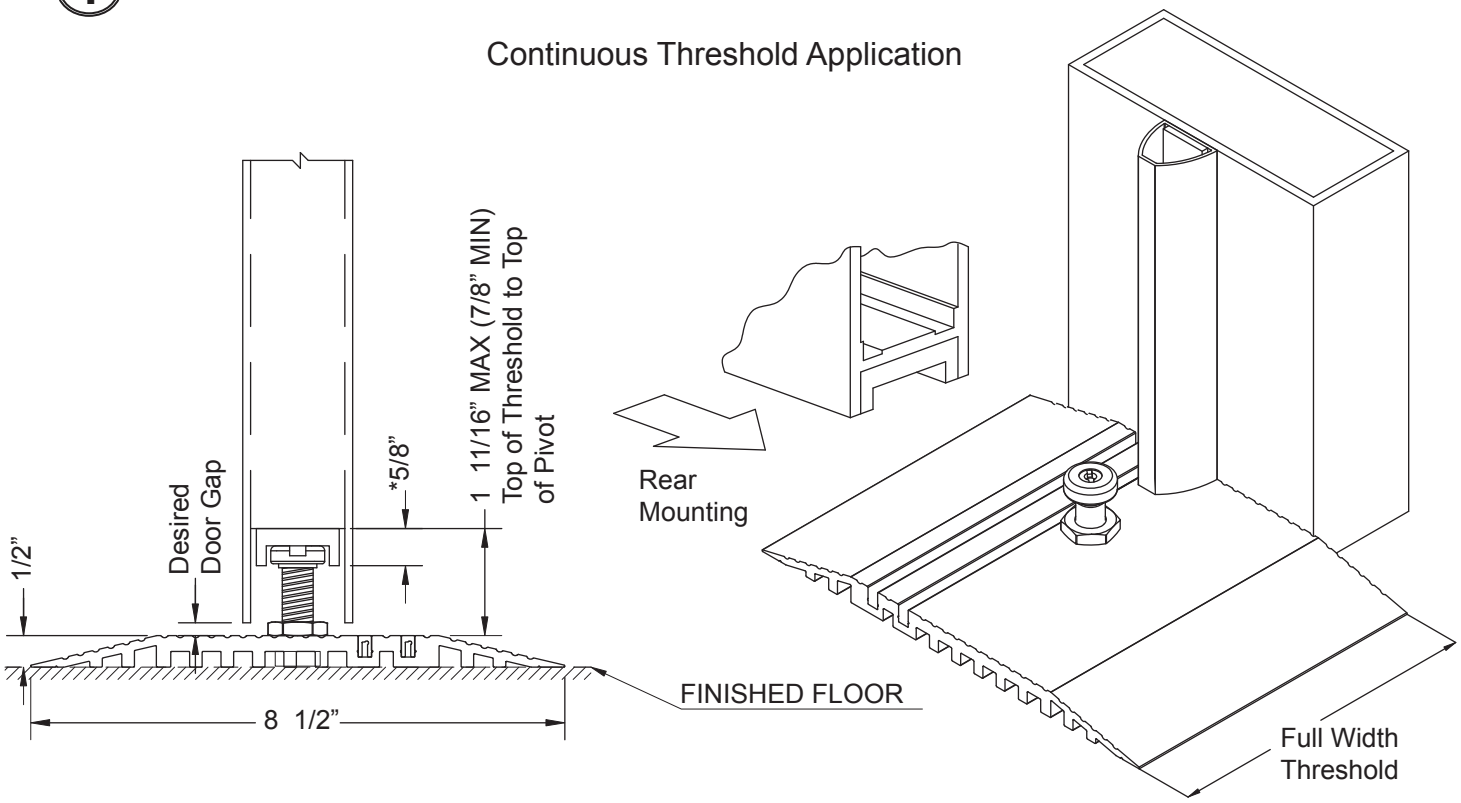


Figure 2

1302 Floor Pivot Installation

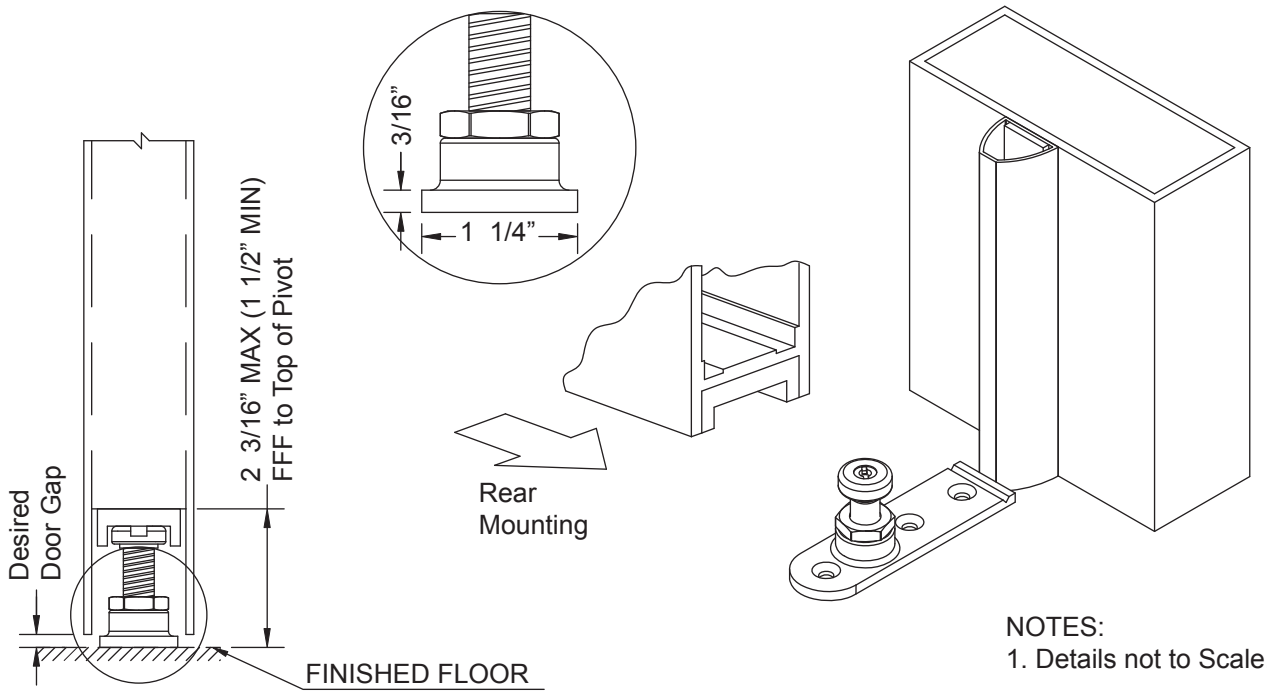
Using a Plumb Bob from the centerline of the operator shaft to determined Bottom Pivot location.

Continuous Threshold Application



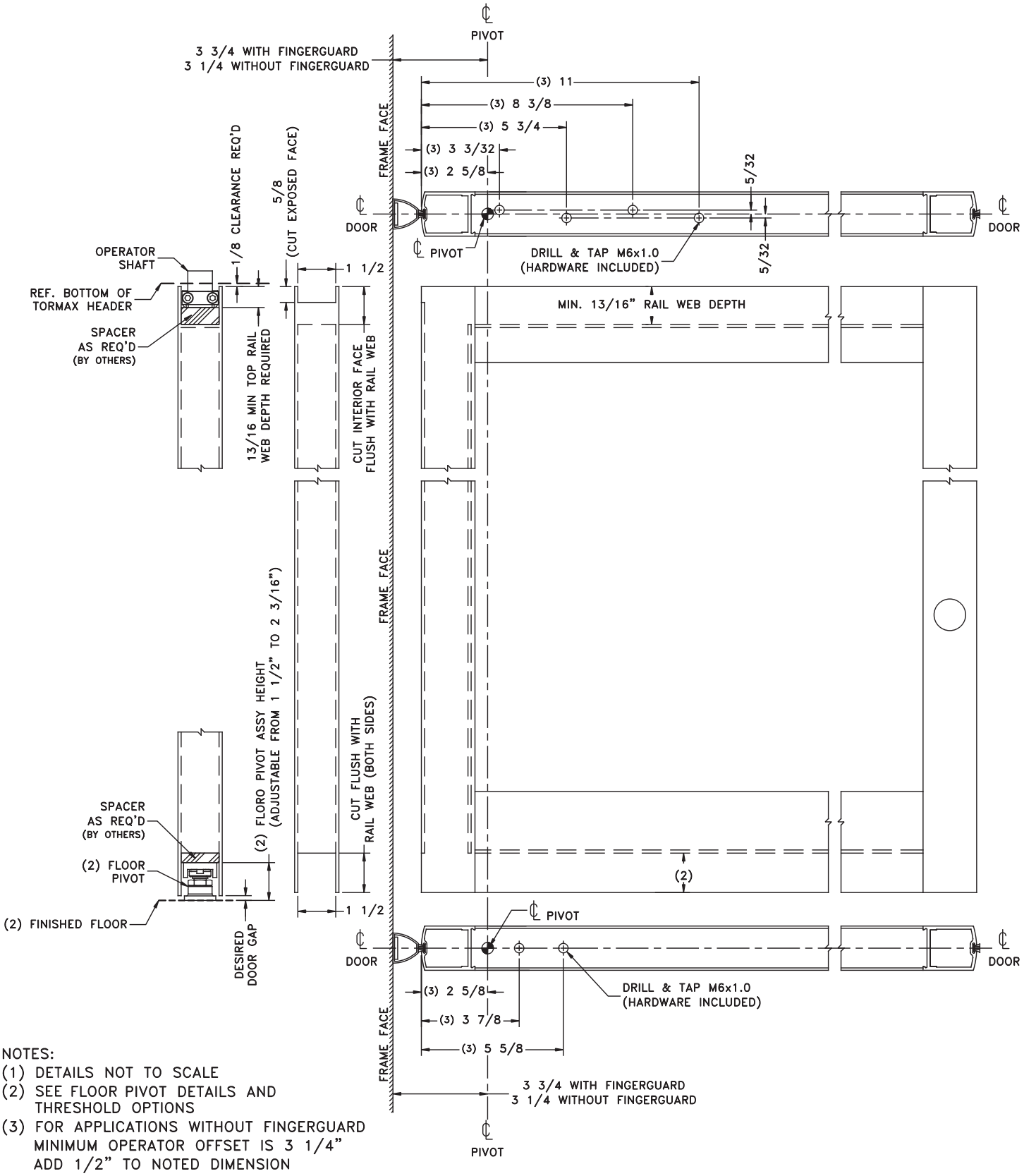
NOTES:
*Minimum 5/8" Web Depth to
Conceal Door Pivot Arm

Non-Threshold Application



NOTES:
1. Details not to Scale.

1302 Door Panel Preparation



NOTES:
(1) DETAILS NOT TO SCALE
(2) SEE FLOOR PIVOT DETAILS AND THRESHOLD OPTIONS
(3) FOR APPLICATIONS WITHOUT FINGERGUARD MINIMUM OPERATOR OFFSET IS 3 1/4" ADD 1/2" TO NOTED DIMENSION

1302 Door Panel Installation

1. If equipped with a Fixed Door Stop in the closed position as shown in figure 1, remove for door panel installation.

2. Door panel is to be installed at 90 degrees to the header on the panic/ breakout side of the header as shown in figure 1.

3. Slide the door onto the bottom pivot guiding the top of the door to the drive arm shaft as shown in figure 2

4. Line up the drive arm in the door to the drive arm shaft, secure drive arm to the shaft with the supplied cap and bolts as shown in figure 3.

5. If equipped with a panic breakaway latch, push the door towards the closed position, toggle it through the latch onto the intended swing side of the latch.

6. If equipped with a fix door stop, push the door towards the closed position, re-install removed door stop.

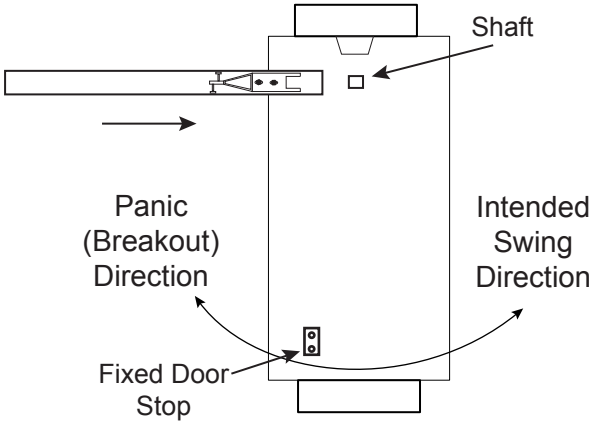


Figure 1

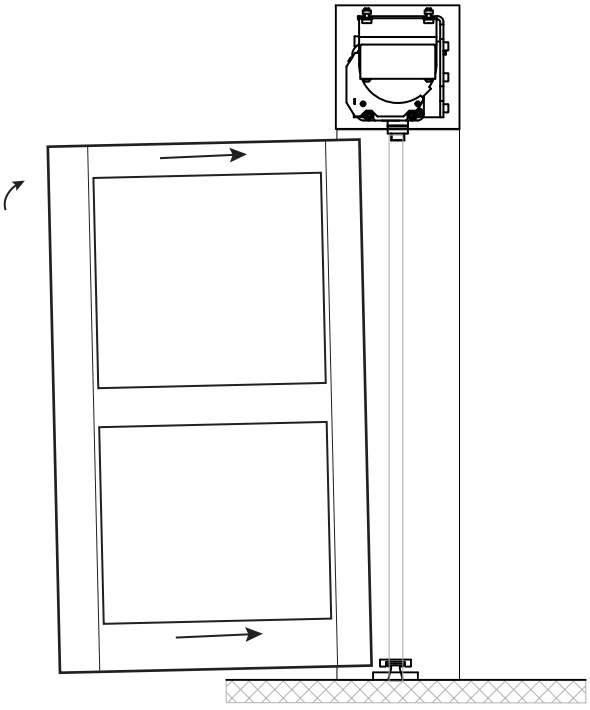


Figure 2

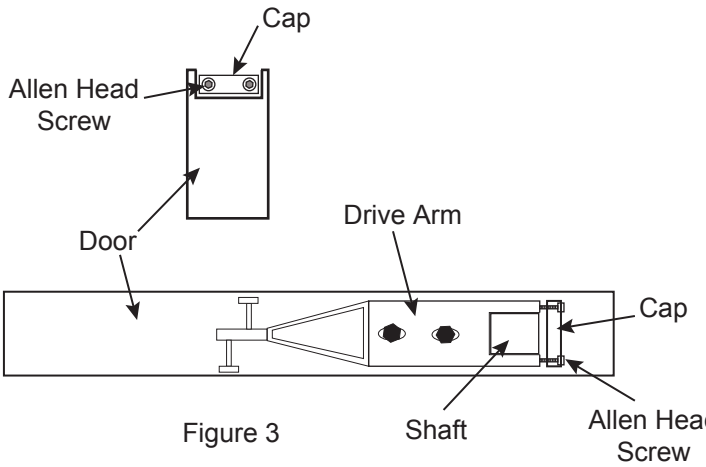


Figure 3

1302- Door Panel Installation

7. Install a floor stop on the intended swing side of the door, as shown in figure 1, at a location 4” from the jamb that allows the door to open to 90 degrees +1/4”.

8. If equipped with a panic breakout latch, an additional floor stop will need to be installed on the panic side of the header as shown in figure 1.

9. If equipped with a fixed door stop in the closed position an additional floor stop is not needed.

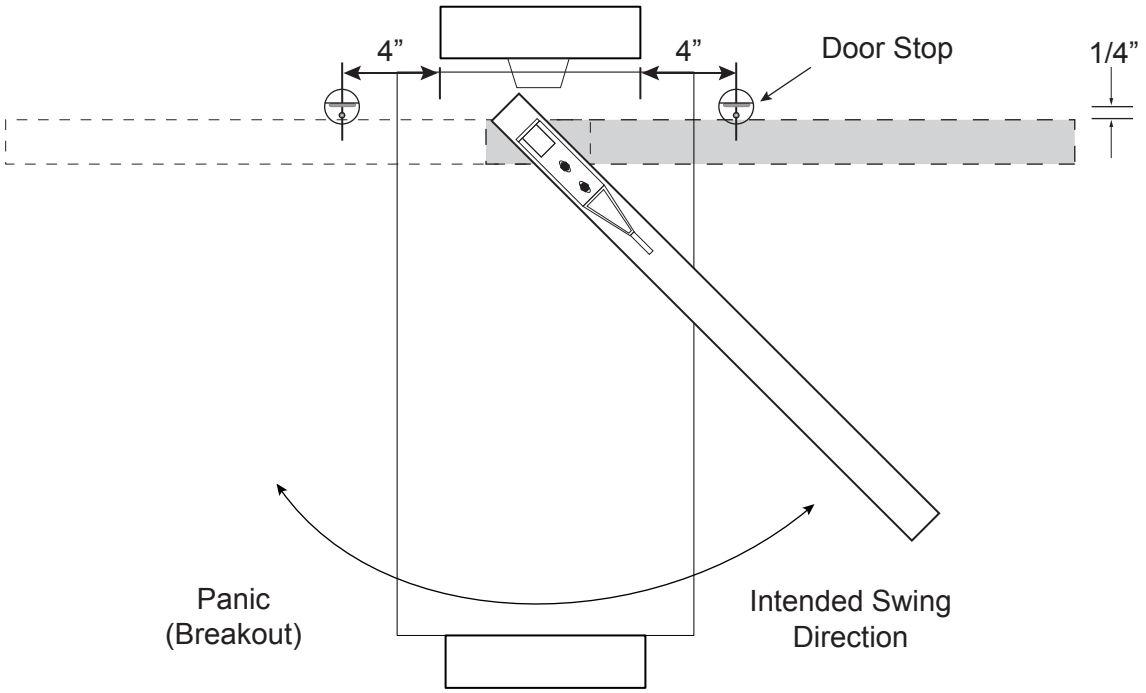
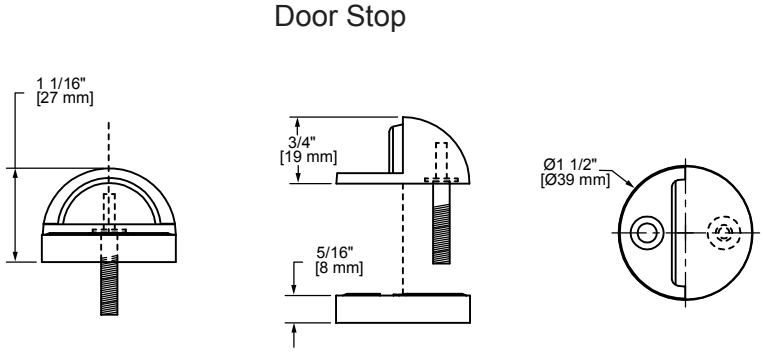


Figure 1



1302- 1/4” Glass Installation

1) Shim lead edge of the door to square up the panel.

2) Check glass block placement as shown below in figure 1. Install the glass and slide glass blocks into position.

3) Install Glass Stop face as shown in figure 2.

4) Adjust Jacking Screw to raise the leading edge of the door up as shown in figure 3. Maintain a straight sight line at the header with the door closed.

For existing doors without jacking screw, cross block the glass to raise the leading stile of the door or order a 1/4” Glass Jacking Screw kit Part# US801690

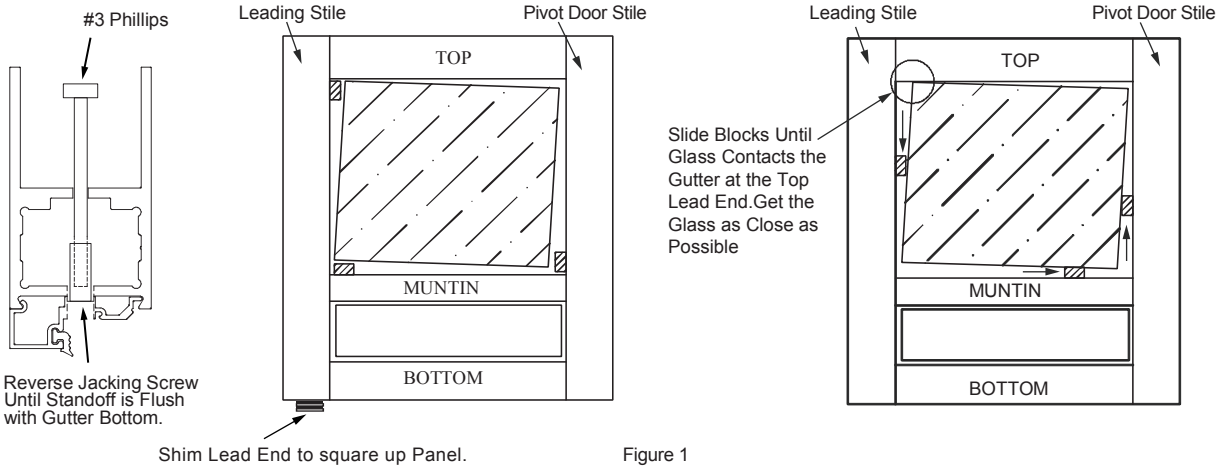


Figure 1

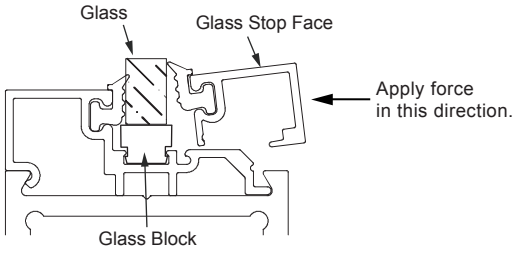


Figure 2

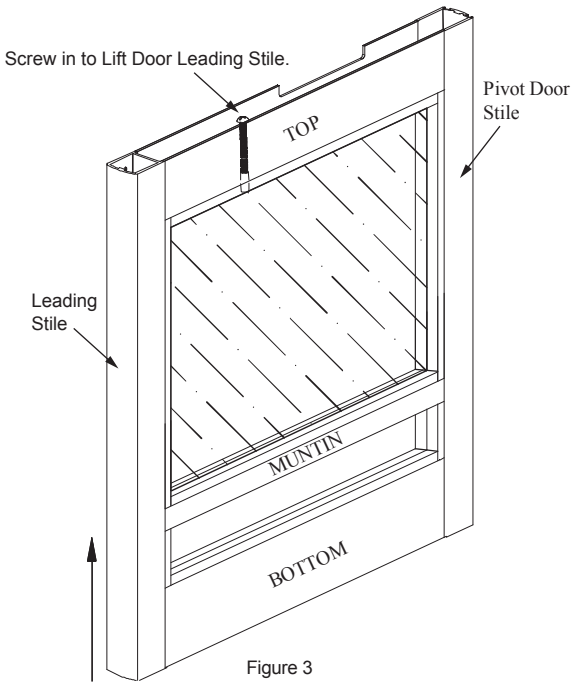


Figure 3

1302- 1” Glass Installation

1) Shim lead edge of door to square up door panel.

2) Raise Jacking Screw by rotating counter clockwise, until Standoff contacts gutter, install the glass and position the glass as shown below, by rotating glass stops in/out as shown in figure 1.

3) Install Glass Stop face as shown in figure 2.

4) Adjust Jacking Screw to raise the leading edge of the door up as shown in figure 3. Maintain a straight sight line at the header with the door closed.

! For existing doors without jacking screw, cross block the glass to raise the leading stile of the door or order a 1” Jacking Screw kit: Part# US801691

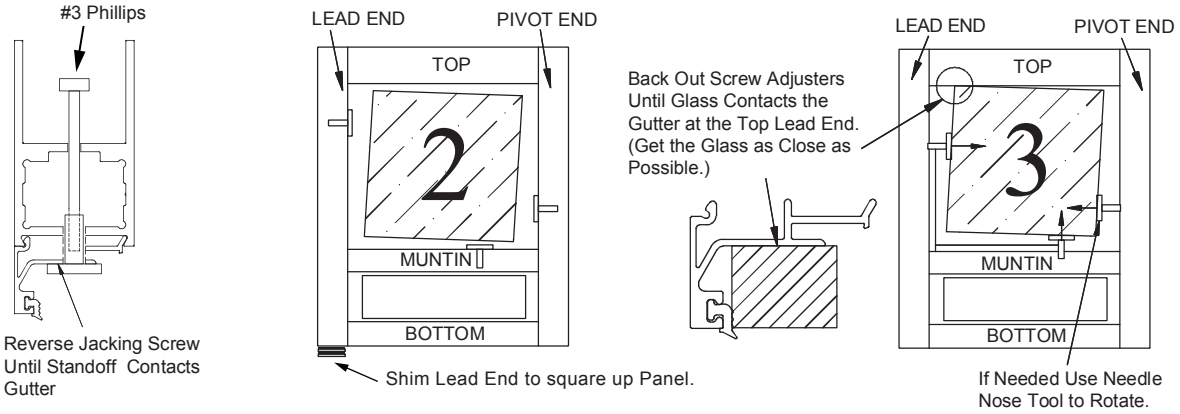


Figure 1

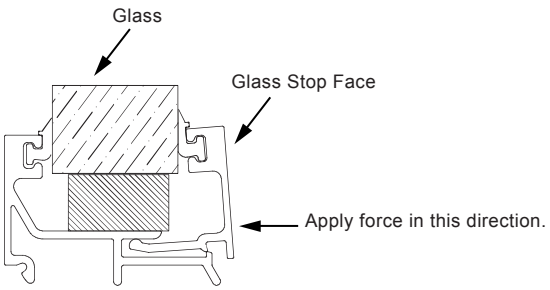


Figure 2

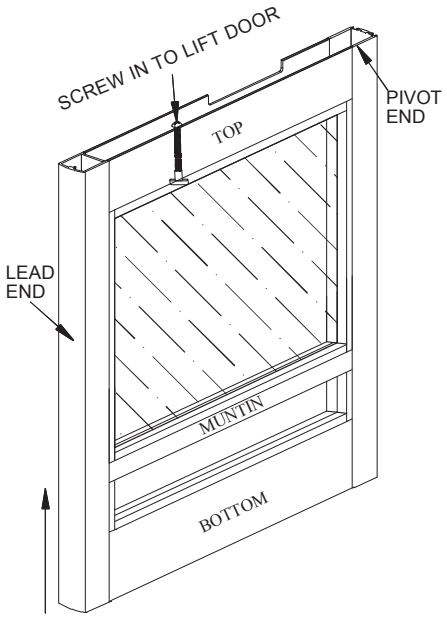


Figure 3

Applications - 1302 Single

Refer to page 4 for primary power connections.

Place 3-position switch if equipped in the AUTO position (center position)

1. Operator Type (H11 displayed on FCP = not yet programmed)

Enter **Code 015** to designate the operator as a 1302.

2. Door Leaf Weight (H12 displayed on FCP = not yet programmed)

Enter **Code 07?** for the corresponding value for the proper estimated door width and weight.

Example:
36" door weighing 440 lb's will have **code 078** .

Door	Width								
	27"	**32"**	**36"**	**40"**	**44"**	**48"**	**50"**	**56"**	**60"**
`Weight	**Code 07 ..**								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

3. Arm Preload (H13 displayed on FCP = preload not selected yet)

Enter **Code 091** then select mode OPEN, the door will open a few inches then stop.

Enter **Code 090** to terminate the Preload procedure and the door will return to the closed position.

4. Electric Lock Output

Enter **Code: 570** for fail secure **Code: 571** for fail safe **Code: 572** turn off the electric lock

We recommend to turn off the electric lock as it is a default setting with the operator and the door does not have electric lock installed on it.

5. Safety slow - *If door mounted safety sensors are installed.*

Enter **Code 641** for to program SF1

6. Panic/ Breakout Switch, if applicable.

Enter **Code 631** for to program IN4, insure LED for IN4 is illuminated and

Enter **Code 038** Breakout contact is (NC) Normally Closed

7. Automatic Configuration (H14 displayed on FCP= automatic configuration required)

Enter **Code 021** to begin the auto configuration which consists of the following:

- NO or NC will be automatically detected on the safety inputs (SF1 - SF4). Make sure the safety sensors are not in detection when 021 is entered.
- Battery backup US801102
- I/O module US801405

Continued on page 35 for Teach In

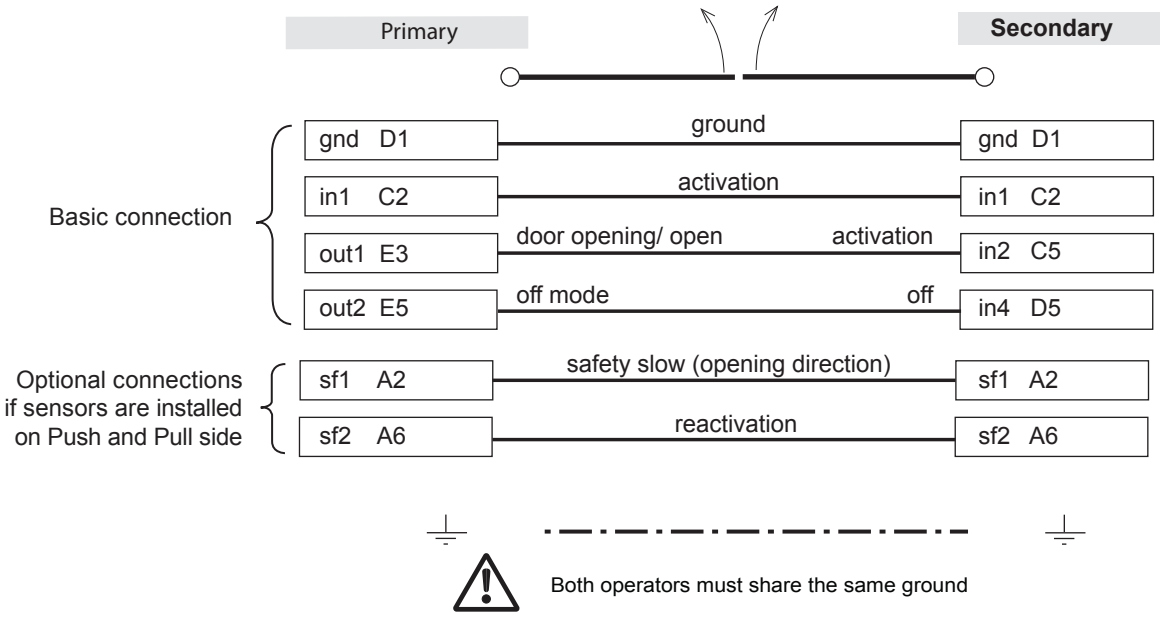
Applications - 1302 Double Egress/ Pair

Primary / Secondary Function

The purpose of this wiring is to synchronize a pair of 1301 or 1302 operators. The door leaves open at the same time when an activation signal is given (interior & exterior sensors or key switch) or by push- pull on the primary. If the door leaves overlap, the secondary drive (Overlapped leaf) should have a delay(See programming table).

- The hold open time of both the operators is determined by the primary.
- The mode of operation is selected by a 3 position switch or FCP connected to the primary.
- The opening and closing speeds are adjusted individually to prevent interference between doors with an astragal (overlap).
- During the loss of primary power, closing speeds are controlled by the spring.

Primary / Secondary wiring diagram



Applications - 1302 Double Egress/ Pair

Refer to page 4 for primary power connections.

Primary operator, enter codes as instructed-

1. Factory reset - **Enter Code 041**

2. Operator type - **Enter Code 015** to designate operator as 1302.

3. Door Leaf Weight - **Enter Code 07?**

Door	Width (in)								
	27"	32"	36"	40"	44"	48"	50"	56"	60"
`Weight	Code 07 ..								
22 lb	0	0	0	1	1	1	1	1	2
55 lb	0	1	1	1	2	2	2	3	4
110 lb	1	2	2	3	4	4	5	6	9
165 lb	2	3	3	4	5	6	7	9	
220 lb	2	3	4	5	7	8	9		
275 lb	3	4	5	6	8	9			
330 lb	3	4	6	8	9				
385 lb	4	5	7	9					
440 lb	4	5	8						
551 lb	5	6	9						
661 lb	6	7							
771 lb	7	8							
881 lb	8	9							
992 lb	9								

4. Arm preload -
Enter Code 091 then select mode OPEN, the door will open a few inches then stop.

Enter Code 090 to terminate preload procedure

5. Safety slow - *If door mounted safety sensors are installed.*
Enter Code 641 to program sf1 as safety open slow.

6. Primary designation - **Enter Code 689** and **695**

7. Automatic configuration - **Enter Code 021**

8. Set FCP to (P) Manual/ Park mode

Secondary operator, enter codes as instructed-

9. Factory reset - **Enter Code 041**

10. Operator type - **Enter Code 015** to designate operator as 1301.

11. Door Leaf Weight - **Enter Code 07?** refer to above chart.

12. Arm preload -
Enter Code 091 then select mode OPEN, the door will open a few inches then stop.

Enter Code 090 to terminate preload procedure

13. Safety slow - *If door mounted safety sensors are installed.*
Enter Code 641 to program sf1

14. Automatic configuration - **Enter Code 021**

15. Set FCP to (P) Manual/ Park mode

Continued on page 35 for Teach In

Teach - In Process 1302

1. If equipped with door mounted sensors, adjust sensors as the manufacturer has recommended.

During the following Teach-in steps do not enter the swing/ pull side door mounted sensor /s zone during the first 4 opening cycles, as they are learning any permanent fixture (guide rails or walls)

2. Place the 3 position rocker switch in center position, if equipped. Change the operating mode on FCP to Automatic (Solid Green Circle) as shown in figure 1. **For pair of doors, change both units to automatic.**

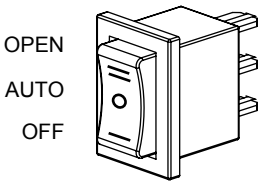
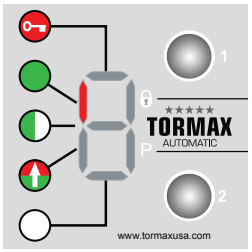


Figure 1

3. **For pair of doors activate primary unit by shorting momentarily C1- C2 . Singles** Momentarily press and release SW2 switch on the control see figure 4, *The first cycle will be slow as the door will look for a positive full open door stop.Continue to activate the door with the SW2 button or C1- C2 until an audible tone and the learning code (H66) is no longer displayed on FCP. Learning procedure lasts between 5-14 cycles.*



4. Further Functions and Parameters - See the programming table for other adjustments and functions.

5. Set the hold time on primary operator, if push-n-go is not required enter code 370 on primary. Forces, speeds, inputs, etc. are individually set on each operator.

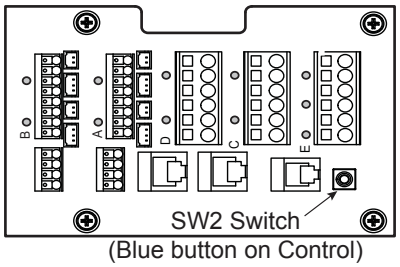
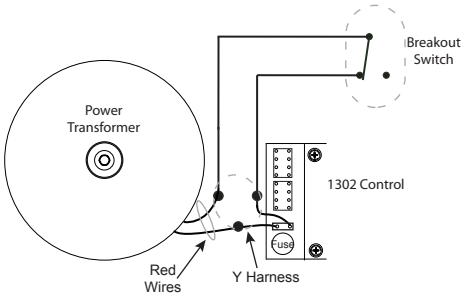


Figure 2

Always inspect your equipment to be compliant with ANSI A156.10 or A156.19 depending on your application.

Breakout Switch

Breakout switch interrupts the 24 volts between the power supply and door control. The switch utilizes an inline “Y” adapter harness.



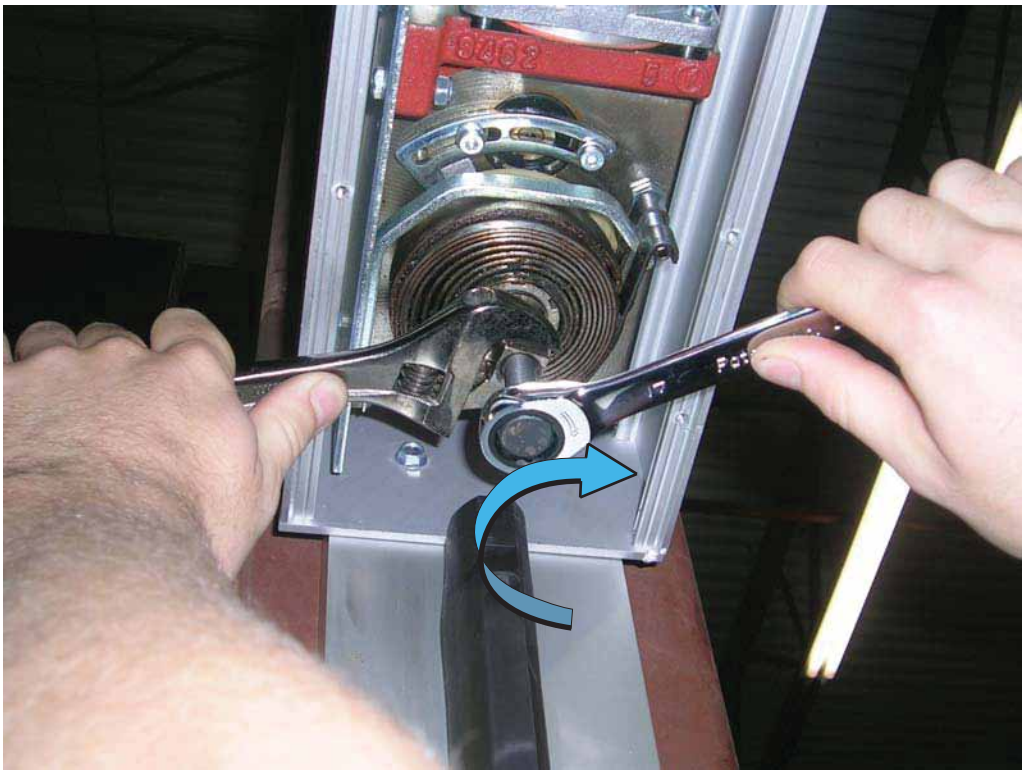
DRIVE ARM SHAFT REMOVAL

In the event the drive arm shaft needs to be removed use an Extraction Bolt part number 140240 (M110 x 1.5 x 70mm) and perform the following steps.

1. Remove drive arm shaft retaining bolt, Lubricate and screw the extraction bolt into the drive arm shaft.

2. Hold the shaft while tightening the extraction bolt.

The bolt will bottom out against the operator and push the shaft out of the operator. Lubricate bolt as needed.



Programming Table

Most common parameters used are highlighted. * Indicates Default Value

Code		Function	Note
01	5	Door operator type iMotion 1301 / 1302	
02	1	Automatic configuration (SW2: till 1. beep)	Performs functions 030, 031,032,...7
02	3	Start Teach-In 1 (AUTO 1)	
02	4	Start Teach-In 2 (AUTO 2)	
03	0	--Delete and restart "Reference run" or "Teach-In 1 & 2"	
03	1	--Detecting and storing of safety facillities 1-4 (SW2: till 3.sign)	Safety inactive
03	2	--Detecting and storing MCU Lock Module 1	Only with code 572. Check coding on module.
03	3	--Detecting and storing of MCU Battery Module	
03	4	--Detecting and storing of MCU I/O- Module 1+2	Check coding on module
03	5	--Detecting and storing of MCU Power supply Module	
03	7	--Detecting and storing of MCU User interface 2	Check coding on module
03	8	Terminal Module: Detecting, storing "in 1-4" (NO,NC,100Hz)	Pulse generators inactive
03	9	I/O Module 1: Detecting, storing of "in 1-4" (NO, NC)	Pulse generators inactive
04	0	Reset	Software reset - Starts program with calibration run
04	1	Factory Reset	All adjustments back to default values (see *)
04	2	Firmware version	Example: r06_00 = V06.00
04	3	Number of cycles	Example: c10_302 = 10'302 cycles (max. 99?999?999)
04	4	Number of operating hours	Example: h4_002 = 4002 hours (max.99'999'999)
04	5	Delete fault protocol	
04	6	Address of control unit for network	Example: A1 = address no. 1
07	0...9	--Door mass	
09	0	End procedure "Spring preload"	
09	1	Spring closing, sliding lever, preload 10°	End with code 090
09	2	Spring closing, standard linkage, preload 30°	End with code 090

10	0...F	Hold-open time of activator in mode of op. AUTO1																
		0	1	2 *	3	4	5	6	7	8	9	A	b	C	d	E	F	code
		0	0.5	1	2	3	5	7.5	10	12.5	15	17.5	20	25	30	45	60	sec.
11	0...F	Hold-open time of activator in mode of op. AUTO2																
		0	1	2 *	3	4	5	6	7	8	9	A	b	C	d	E	F	code
		0	0.5	1	2	3	5	7.5	10	12.5	15	17.5	20	25	30	45	60	sec.
12	0...F	Hold-open time of key switch																
		0	1	2	3	4 *	5	6	7	8	9	A	b	C	d	E	F	code
		0	0.5	1	2	3	5	7.5	10	12.5	15	17.5	20	25	30	45	60	sec.
13	0...9	Delay time Mode of op. OFF																
		0	1	2 *	3	4	5	6	7	8	9							code
		1	3	5	7.5	10	15	20	30	45	60							sec.
14	0...9	Bell active time																0 = Duration identical to trigger duration
		0	1	2 *	3	4	5	6	7	8	9							code
		=imp	0.5	1	2	3	4	5	6	8	10							sec.
15	0...9	Bell intermission																
		0	1	2	3	4	5	6 *	7	8	9							code
		0	0.5	1	2	3	4	5	6	8	10							sec.
16	0...9	Stop time after safety																
		0	1	2 *	3	4	5	6	7	8	9							code
		0	0.5	1	2	3	4	5	6	8	10							sec.

* = Default value when factory reset

Programming Table

Most common parameters used are highlighted. * Indicates Default Value

Code	Function																Note
17 0...9	Runtime Battery in mode of op. 2-6																Door opens after switch-off battery
	0	1	2	3 *	4	5	6	7	8	9							code
	10s	1	5	10	30	60	120	240	360	480							sec / min.
18 0...9	Runtime Battery in mode of op. OFF																
	0 *	1	2	3	4	5	6	7	8	9							code
	10s	1	5	10	30	60	120	240	360	480							sec / min.
19 0...9	Airlock timeout																0 = No timeout for airlock function
	0 *	1	2	3	4	5	6	7	8	9							code
	--	10	15	20	25	30	45	60	90	120							sec.
20 0...9	Opening speed																Limitation only valid for "Teach-In 1 + 2"
	0	1	2	3	4*	5	6	7	8	9							code
	10	20	30	40	50	60	70	80	90	100							degree / s
21 0...9	Closing speed																Limitation only valid for "Teach-In 1 + 2"
	0	1	2	3	4 *	5	6	7	8	9							code
	8	16	24	32	40	48	56	64	72	80							degree / s
22 0...9	Close check speed																Angle see 42x
	0 *	1	2	3	4	5	6	7	8	9							Code
	2	3	5	8	12	17	23	30	38	47							Degree/s
23 0...9 2*	Manual opening speed limit																0=Limitation according to course of movement, 1-9=slow-fast
24 0...9 0*	Manual closing speed limit																0=Limitation according to course of movement, 1-9=slow-fast
26 0...9 2*	Braking distance opening																Non-applicable after Teach, 0 = short
28 0...9 4*	Braking distance closing																Non-applicable after Teach
30 0...9	Motor force opening																Net force on door edge
	0	1	2	3	4	5	6	7 *	8	9							code
	5	11	22	33	44	55	66	77	88	100							%
31 0...9	Motor force closing																Net force on door edge
	0	1 *	2	3	4	5	6	7	8	9							code
	5	11	22	33	44	55	66	77	88	100							%
33 0...9	Motor holding closed force																incl. discharge electric strike together with code 58x
	0 *	1	2	3	4	5	6	7	8	9							code
	0	1	2	3	5	8	12	18	25	35							Nm
35 0...9 5*	Reversing sensitivity opening																9 = max
36 0...9 5*	Reversing sensitivity closing																9 = max
37 0...9 7*	Push-and-Go sensitivity																9 = max, 0 = off
39 0...9 5*	Travel distance tolerances (60..300%)																New Teach-In required
41 0...9	Opening width reduced																Non-applicable after Teach
	0	1	2	3	4	5	6 *	7	8	9							code
	10	20	30	40	50	60	70	80	90	100							%
42 0...9	Close check angle																Close check speed see 22x
	0 *	1	2	3	4	5	6	7	8	9							code
	0	1	2	3	5	7	10	15	20	30							degree
43 1...F	Crossing angle Master																Application see T-1319
44 1...F	Crossing angle Slave																Application see T-1319
46 0...9 0*	Opening width scaling up 0...+9%																Non-applicable after Teach
51 0 *	Operating mode return to last setting on user interface																after terminal operating mode

* = Default value when factory reset

Programming Table

Most common parameters used are highlighted. * Indicates Default Value

Code		Function															Note
51	1...6	Operating mode return to mode of op. ...															after terminal operating mode
		1	2	3	4	5	6										code
		OFF	AUT1	AUT2	EXIT	OPEN	MAN.										Mode of Operation
51	7	No operating mode return															after terminal operating mode
55	0	Locks in operating mode OFF															Only for electric strike with 100% duty ratio
55	1	Locks in operating mode OFF, EXIT															Only for electric strike with 100% duty ratio
55	2 *	Locks in operating mode OFF, AUTO 1+2, EXIT, P															
57	0 *	Electric strike: current-free locked (Fail secure)															
57	1	Electric strike: current-free unlocked (Fail safe)															Only for electric strike with 100% duty ratio
57	2	Without electric strike															
57	3	Electric strike switch-on range 100%, until door is closed															Only for electric strike with 100% duty ratio
58	0...9	Delay time to open															Independent adjustment only with skipper
		0 *	1	2	3	4	5	6	7	8	9						code
		0	0.2	0.4	0.8	1.2	1.6	2.0	2.5	3.0	4.0						sec.
59	0...6	Tension "pwm out" with connection to terminal 40V or 24V**															
		0	1	2	3	4 *	5	6									code
		6	9	12	15	24	12**	24**									V DC
60	0	in1: Operation mode OFF															Contact NO. NC detect with code 038
60	1	in1: Operation mode MANUAL															Contact NO. NC detect with code 038
60	2	in1: Operation mode OPEN															Contact NO. NC detect with code 038
60	3 *	in1: Activator inside															Contact NO. NC, 100Hz detect with code 038
60	4	in1: Activator outside															Contact NO. NC, 100Hz detect with code 038
60	5	in1: Key switch															Contact NO. NC, 100Hz detect with code 038
60	6	in1: Emergency opening except in OFF															Contact NO. NC, 100Hz detect with code 038
60	7	in1: Emergency opening in all modes of op.															Contact NO. NC, 100Hz detect with code 038
60	8	in1: Emergency closing (with locking)															Contact NO. NC, 100Hz detect with code 038
60	9	in1: Operation mode EXIT															Contact NO. NC detect with code 038
61	0...9 4*	in2: Same choice of functions as on "in1"															Contact type detect with code 038
62	0...9 5*	in3: Same choice of functions as on "in1"															Contact type detect with code 038
63	0...9 0*	in4: Same choice of functions as on "in1"															Contact type detect with code 038
64	0 *	sf1: Safety opening 1 with stop function															Type of connection NO,NC,test detect with code 031
64	1	sf1: Safety opening 1 with creeping function															Type of connection NO,NC,test detect with code 031
64	2	sf1: Safety closing 1 with reversing function															Type of connection NO,NC,test detect with code 031
64	3	sf1: Safety closing 1 with creeping function															Type of connection NO,NC,test detect with code 031
64	4	sf1: Safety swing area															Type of connection NO,NC,test detect with code 031
64	5	sf1: Safety stop															Type of connection NO,NC,test detect with code 031
64	6	sf1: Emergency opening except in OFF															Contact NO. NC detect with code 031
64	7	sf1: Emergency opening in all modes of op.															Contact NO. NC detect with code 031
64	8	sf1: Emergency closing (with locking)															Contact NO. NC detect with code 031
64	9	sf1: Mode of op. MANUAL / Break out															Contact NO. NC detect with code 031
64	A	sf1: Safety opening 2 with stop function															Type of connection NO,NC,test detect with code 031
64	b	sf1: Safety opening 2 with creeping function															Type of connection NO,NC,test detect with code 031
64	C	sf1: Safety closing 2 with reverse function															Type of connection NO,NC,test detect with code 031
64	d	sf1: Safety closing 2 with creeping function															Type of connection NO,NC,test detect with code 031
64	E	sf1: Inhibit switch															Type of connection NO,NC,test detect with code 031
65	0...E 2*	sf2: Same choice of functions as on "sf1"															Type of connection detect with code 031
66	0...E 4*	sf3: Same choice of functions as on "sf1"															Type of connection detect with code 031
67	0...E 5*	sf4: Same choice of functions as on "sf1"															Type of connection detect with code 031
68	0	out1: Message "door closed"															

* = Default value when factory reset

Programming Table

Most common parameters used are highlighted. * Indicates Default Value

Code		Function	Note
68	1	out1: Message “door closed and locked”	
68	2	out1: Message “door open”	
68	3	out1: Message “General fault”	
68	4 *	out1: Bell	
68	5	out1: Message “Mode of operation OFF”	
68	7	out1: Battery in service	
68	9	out1: Message “door is opening or open”	Function visible after 1 door-opening cycle
69	0...9 0*	out2: Same choice of functions as on "out1"	
70	0 *	I/O Module 1: in1: No function	
70	1	I/O Module 1: in1: Operating mode OFF	Contact NO. NC detect with code 039
70	2	I/O Module 1: in1: Operating mode AUTOMATIC 1	Contact NO. NC detect with code 039
70	3	I/O Module 1: in1: Operating mode AUTOMATIC 2	Contact NO. NC detect with code 039
70	4	I/O Module 1: in1: Operating mode EXIT	Contact NO. NC detect with code 039
70	5	I/O Module 1: in1: Operating mode OPEN	Contact NO. NC detect with code 039
70	6	I/O Module 1: in1: Operating mode MANUAL	Contact NO. NC detect with code 039
70	7	I/O Module 1: in1: Inhibit switch	Contact NO. NC detect with code 039
71	0...7 0*	I/O Module 1: in2: Same choice of functions as on I/O Module 1: in1	Contact NO. NC detect with code 039
72	0...7 0*	I/O Module 1: in3: Same choice of functions as on I/O Module 1: in1	Contact NO. NC detect with code 039
73	0...7 0*	I/O Module 1: in4: Same choice of functions as on I/O Module 1: in1	Contact NO. NC detect with code 039
74	0 *	I/O Module 1: out1: No function	
74	1	I/O Module 1: out1: Operating mode OFF	
74	2	I/O Module 1: out1: Operating mode AUTOMATIC 1	
74	3	I/O Module 1: out1: Operating mode AUTOMATIC 2	
74	4	I/O Module 1: out1: Operating mode EXIT	
74	5	I/O Module 1: out1: Operating mode OPEN	
74	6	I/O Module 1: out1: Operating mode MANUAL	
74	7	I/O Module 1: out1: "Door is opening"	
74	8	I/O Module 1: out1: “Door is opening or open”	
74	9	I/O Module 1: out1: "Door is closing"	
75	0...9 0*	I/O Module 1: out2: Same choice of functions as on I/O Module 1: out1	
76	0...9 0*	I/O Module 1: out3: Same choice of functions as on I/O Module 1: out1	
77	0...9 0*	I/O Module 1: out4: Same choice of functions as on I/O Module 1: out1	
78	0	User Interface 1: in1: No function	
78	1 *	User Interface 1: in1: User interface lock	Contact NO. Use User Interface from V1.07!
78	2	User Interface 1: in1: Operating mode OFF	Contact NO. Use User Interface from V1.07!
78	3	User Interface 1: in1: Operating mode AUTOMATIC 2	Contact NO. Use User Interface from V1.07!
78	4	User Interface 1: in1: Operating mode EXIT	Contact NO. Use User Interface from V1.07!
78	5	User Interface 1: in1: Operating mode OPEN	Contact NO. Use User Interface from V1.07!
78	6	User Interface 1: in1: Operating mode MANUAL	Contact NO. Use User Interface from V1.07!
78	7	User Interface 1: in1: Emergency closing	Contact NO. Use User Interface from V1.07!
78	8	User Interface 1: in1: Emergency opening in all op. modes	Contact NO. Use User Interface from V1.07!
78	9	User Interface 1: in1: Key switch	Contact NO. Use User Interface from V1.07!
79	0...9 0*	User Interface 1: in2: Same choice as on User Interface 1: in1	Contact NO. Use User Interface from V1.07!
80	0	Bell trigger: Safety closing 1	
80	1	Bell trigger: Safety closing 2	
80	2 *	Bell trigger: Activator inside	
80	3	Bell trigger: Activator outside	
80	4	Bell trigger: Key switch	
82	0 *	No step-by-step control	

* = Default value when factory reset

Programming Table

Most common parameters used are highlighted. * Indicates Default Value

Code		Function	Note
82	1	Step-by-step control only for key switch	
82	2	Step-by-step control only for activator inside and outside	
82	3	Step-by-step control for activator inside, outside and key switch	
83	0 *	Single door	
83	1	Primary drive, double leaf door, type A	Application see T-1319
83	2	Secundary drive, double leaf door type A	Application see T-1319
83	3	Primary drive, double leaf door, nurse & bed passage	Application see T-1572
83	4	Secundary drive, double leaf door, nurse & bed passage	Application see T-1572
85	0 *	No airlock function	
85	1	Airlock function for inner door	Application see T-1304
85	2	Airlock function for outer door	Application see T-1304

* = Default value when factory reset

Trouble Shooting Codes

* E = Error | H = Hint

* No.	Fault	Behaviour of System	Reset
E00	Firmware incompatible to MCU version /D	Safety operating mode or only display	Reset, new version MCU32-BASE
E0x	Internal test negative	Safety operating mode or only display	Reset
E21	LIN to User Interface 1 USIN interrupted	Last mode of operation remains	Automatically if OK
E22	LIN to User Interface 2 USIN interrupted	Last mode of operation remains	Automatically if OK
E23	LIN to s I/O-Modul 1 INOU interrupted	Programmed function will be inactive	Automatically if OK
E24	LIN to s I/O-Modul 2 INOU interrupted	Programmed function will be inactive	Automatically if OK
E25	LIN to Lock Unit 1 LOCU interrupted	Last status remains	Automatically if OK
E26	LIN to Lock Unit 2 LOCU interrupted	Last status remains	Automatically if OK
E30	Safety clos. creep 2 >1min. active,test neg.	According safety function	Automatically if OK
E31	Safety open 1 >1min. active, test neg.	According safety function	Automatically if OK
E32	Safety op. creep 1 >1min. active, test neg.	According safety function	Automatically if OK
E33	Safety closing 1 >1min. active, test neg.	According safety function	Automatically if OK
E34	Safety clos. creep 1 >1min. active,test neg.	According safety function	Automatically if OK
E35	Safety swing area >1min. active, test neg.	According safety function	Automatically if OK
E36	Safety stop >1min. active, test neg.	According safety function	Automatically if OK
E37	Safety open 2 >1min. active, test neg.	According safety function	Automatically if OK
E38	Safety op. creep 2 >1min. active, test neg.	According safety function	Automatically if OK
E39	Safety closing 2 >1min. active, test neg.	According safety function	Automatically if OK
E40	User-defined input > 1min. active	(Door remains open)	Automatically if OK
E41	Activator inside > 1min. active	Door remains open	Automatically if OK
E42	Activator outside > 1min. active	Door remains open	Automatically if OK
E43	Key switch > 1min. active	Door remains open	Automatically if OK
E46	Emergency open >10min. active	Door remains open	Automatically if OK
E47	Emergency close >10min. active	Door closes and remains closed	Automatically if OK.
E48	Wake up or Push button SW2 > 1min. active	Door remains open	Automatically if OK.
E49	Inhibit switch> 1min. active	Door stand still	Automatically if OK.
E51	Encoder not working	Safety operating mode	Automatic Reset / Reset
E53	Calibration run different from reference	Safety operating mode	Reset
E54	Driveway in op. longer than reference	Safety operating mode	Reset >automatic configuration
E55	Position drift. Shaft displacing	Only display, auto-correction stops	Automatically if OK / Reset
E56	Door blocked	Saftey operation mode	Reset
E61	Voltage 40V outside of admissible range	Safety operating mode	Automatically if OK
E62	Power Supply 24V (Limit U, I)	Safety op. mode	Automatically if OK
E63	Current in power supply 40V to high	Safety operating mode	Automatically if OK
E64	Motor temperature > 90 ° C, cable interrupted	Safety operating mode	Automatically after cooling down
E65	Control end stage > 100 ° C	Safety operating mode	Automatically after cooling down
E66	Motor control faulty in MCU32-BASE	Safety operating mode	Reset
E67	Motor current to high in long-term	Normal operation	Automatically if OK
E8x	Memory or processor test negative	Safety operating mode	Reset
H11	Operator type not defined	Safety operating mode	Program operator type
H12	Door mass not defined	Safety operating mode	Program door mass
H13	Linkage type not defined	Safety operating mode	Configuration 09x and 090
H14	Automatic configuration not executed	Safety operating mode	Program 021
H18	Configuration error in trajectory	Safety operating mode	New Teach-In
H21	Teach-In: Door moves >15s before start	Abort Teach-In	New Teach-In
H22	Teach-In: No start within 15s	Abort Teach-In	New Teach-In
H23	Teach-In: Opening movement >15s	Abort Teach-In	New Teach-In
H24	Teach-In: Hold open time >60s	Abort Teach-In	New Teach-In
H25	Teach-In: Closing movement >15s	Abort Teach-In	New Teach-In
H26	Teach-In: Wrong direction at closing	Abort Teach-In	New Teach-In
H27	Teach-In: Differing close position	Abort Teach-In	New Teach-In
H29	Teach-In: Request		Execute Teach-In

Trouble Shooting Codes

* E = Error | H = Hint

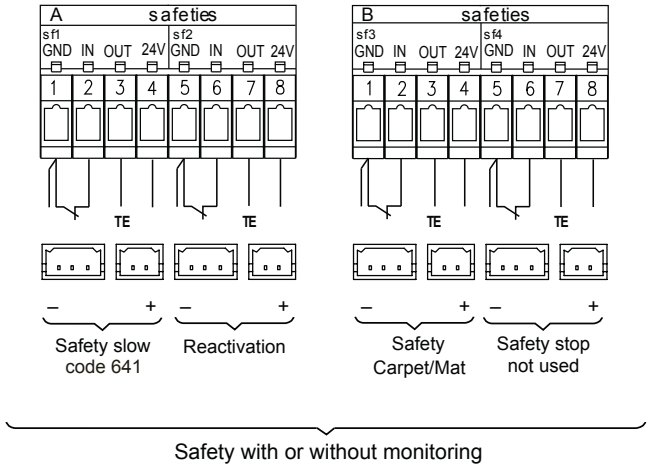
* No.	Fault	Behaviour of System	Reset
H62	Calibration run in closing direction	Searches closed position	At the end of movement
H63	Reference run opening	Measures reference run length	At the end of movement
H64	Reference run closing	Searches closed position	At the end of movement
H66	Learn mode (Force detection)	Normal operation	After max. 20 full opening cycles
H67	Absolute position not found yet	Slow opening movement	
H71	Battery mode	Door moves slowly	Power supply return
H73	Motor current in closed position to high	Normal operation	Reset, reduce 33x
H91	Obstacle detection at opening	Door reverses	Automatically, Display 20s.
H92	Obstacle detected at closing	Door reverses	Automatically, Display 20s.
H93	Permanent obstacle at opening	Reset after 5 reversings	Automatically, Display 20s.
H94	Permanent obstacle at closing	Reset after 5 reversings	Automatically, Display 20s

Control Connection Diagram

All inputs and outputs programmable, see Programming Table

Default terminal designation.

Safety Inputs (programmable)



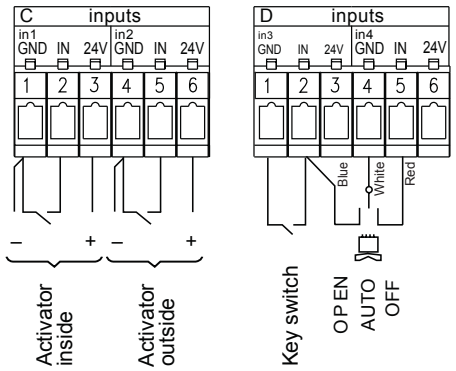
Safety slow open -
Will slow the door while opening.

Reactivation -
Will reactivate the door when activated and will inhibit after door is fully closed.

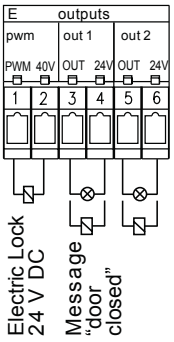
Safety -
Will safety the door when fully open or fully closed.

TE: Test signal for SMR sensors (Superscan, Quadscans)

Inputs (programmable)



Outputs (programmable)



Activator inside -
Activation Signal

Activator outside -
Activation Signal - Inhibits when FCP is in 1-way mode and the door is fully closed.

Key switch -
Activates the door open in all modes, except (P) Manual mode

Open -
Will hold door open.

Auto -
Automatic operation from both activators.

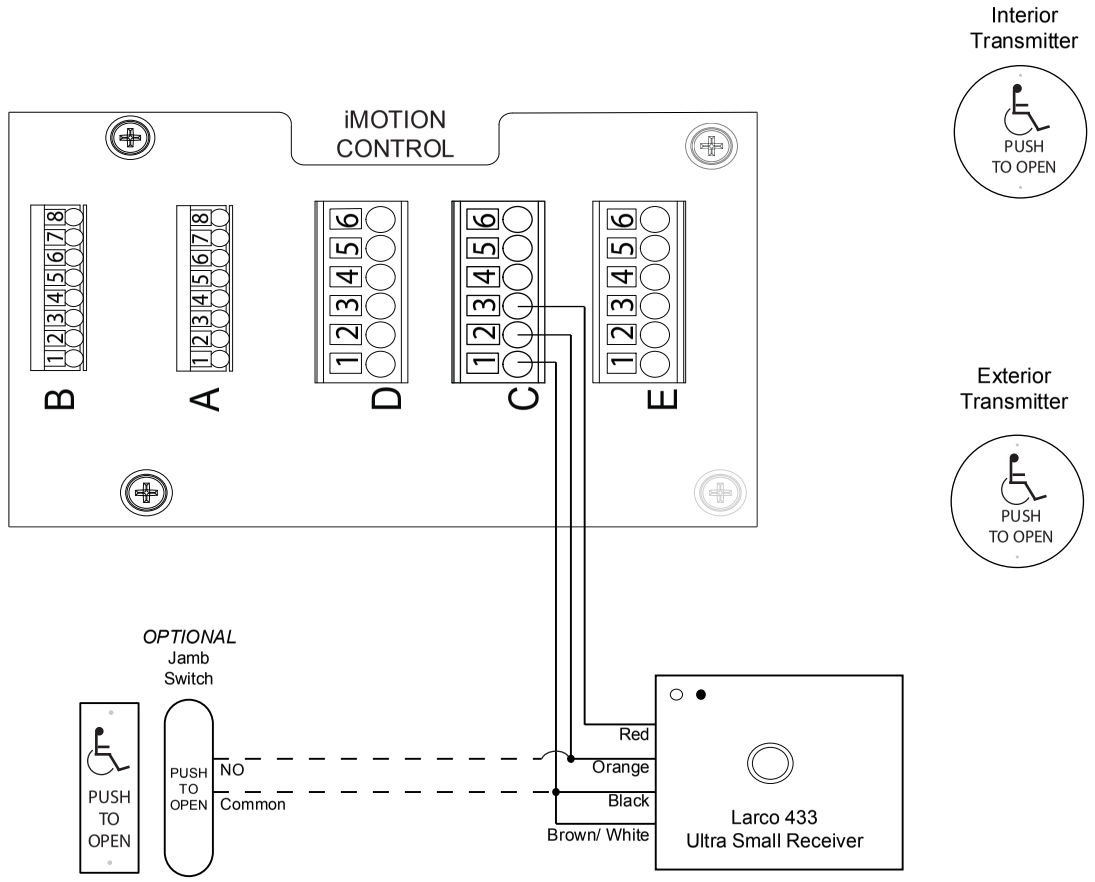
Off -
Inside and Outside sensors are inhibited unless door is activated by Key switch input.

Electric lock -
Can power up a magnetic lock or electric strike, 1A max output. Has selectable output voltages.

Outputs 1, 2 -
See programming table.

Power output to Sensor is .75 amps max.
Power output to Lock Output is 1 amp max.

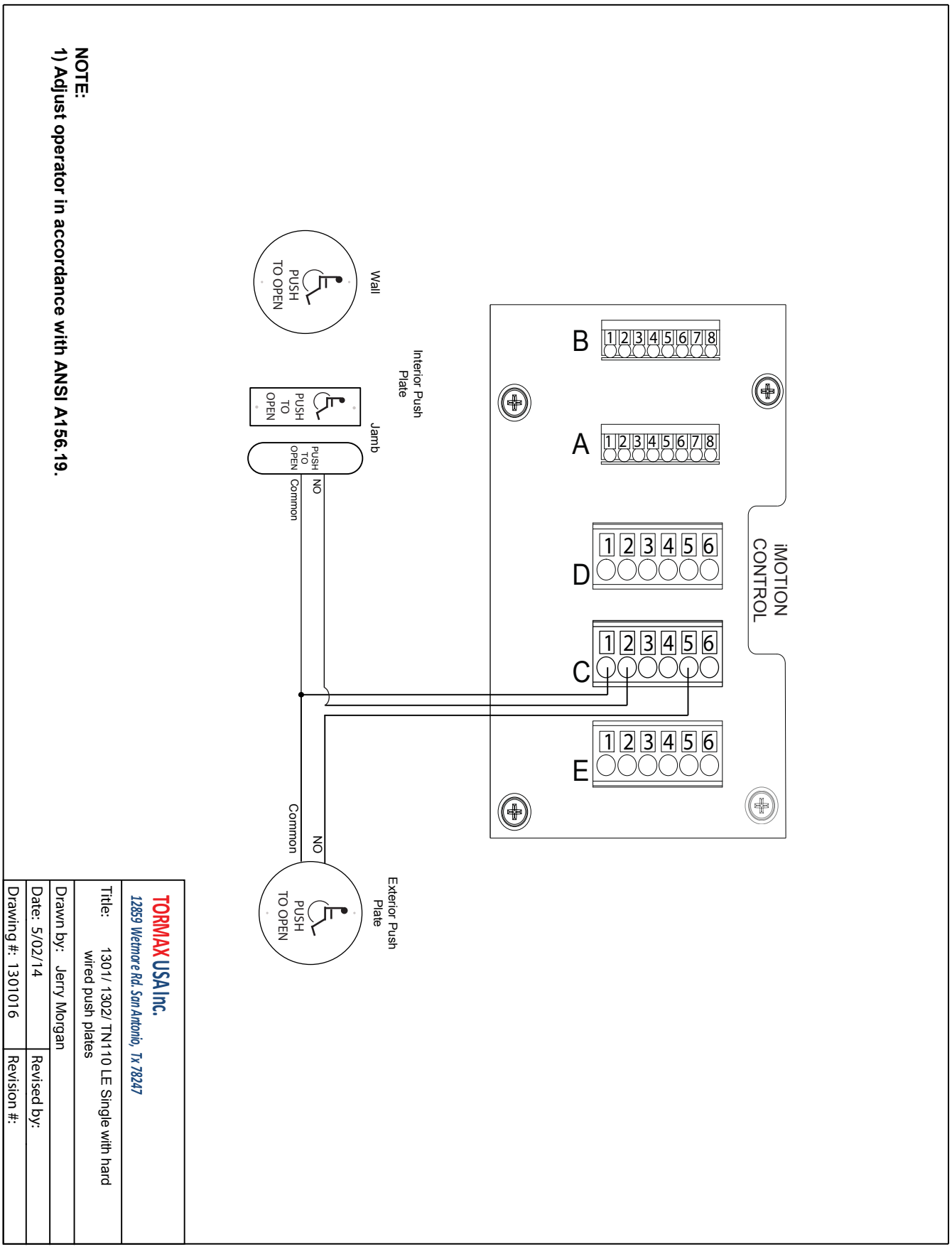
Connection Diagram



NOTE:
1) Adjust operator in accordance with ANSI A156.19.
2) Refer to manufacturer Installation guide for receiver set up and adjustments.

TORMAX USA Inc. 12859 Wetmore Rd. San Antonio, Tx 78247	
Title: 1301 / 1302 / TN110LE Single with Larco Receiver with Optional Jamb Switch	
Drawn by: Beto Rendon	
Date: 10/28/10	Revised by: GDM
Drawing #: 1301005	Revision #: 01

Connection Diagram

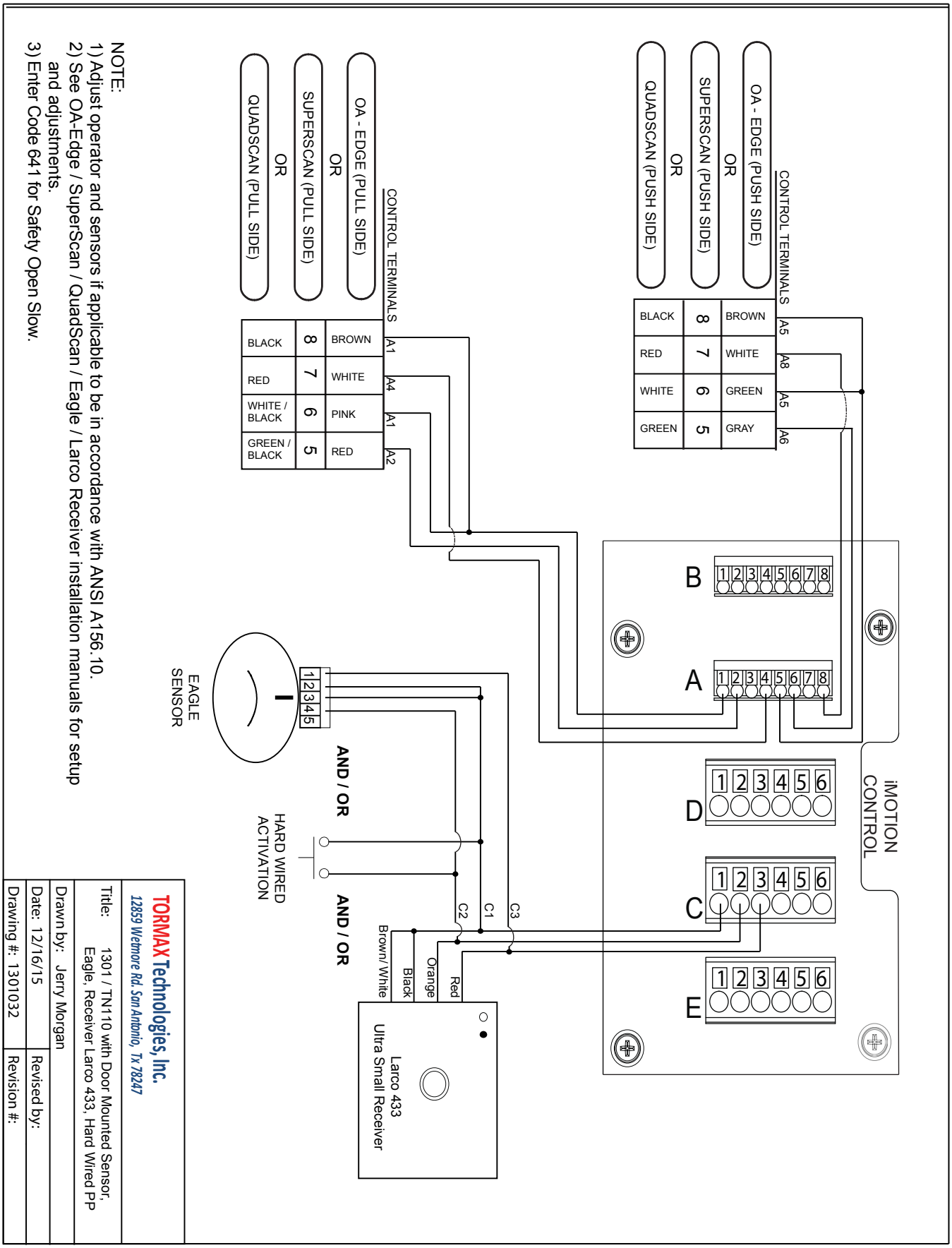


NOTE:

1) Adjust operator in accordance with ANSI A156.19.

TORMAX USA Inc. *12859 Wetmore Rd. San Antonio, Tx 78247*	
Title: 1301/ 1302/ TN110 LE Single with hard wired push plates	
Drawn by: Jerry Morgan	
Date: 5/02/14	Revised by:
Drawing #: 1301016	Revision #:

Connection Diagram



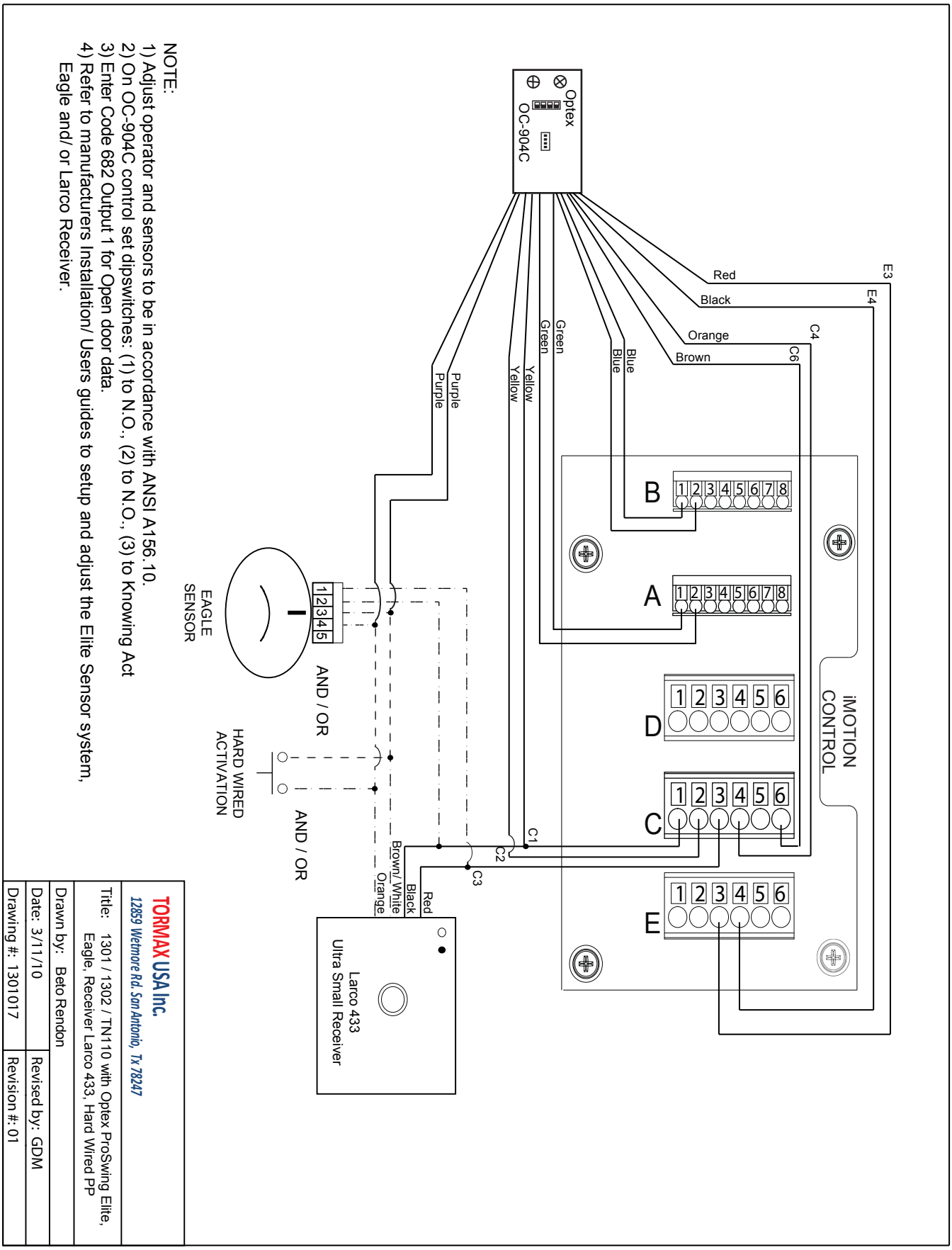
NOTE:

1) Adjust operator and sensors if applicable to be in accordance with ANSI A156.10.
2) See OA-Edge / SuperScan / QuadScan / Eagle / Larco Receiver installation manuals for setup and adjustments.
3) Enter Code 641 for Safety Open Slow.

TORMAX Technologies, Inc.
12859 Wetmore Rd. San Antonio, Tx 78247

Title:	1301 / TN110 with Door Mounted Sensor, Eagle, Receiver Larco 433, Hard Wired PP
Drawn by: Jerry Morgan	
Date: 12/16/15	Revised by:
Drawing #: 1301032	Revision #:

Connection Diagram

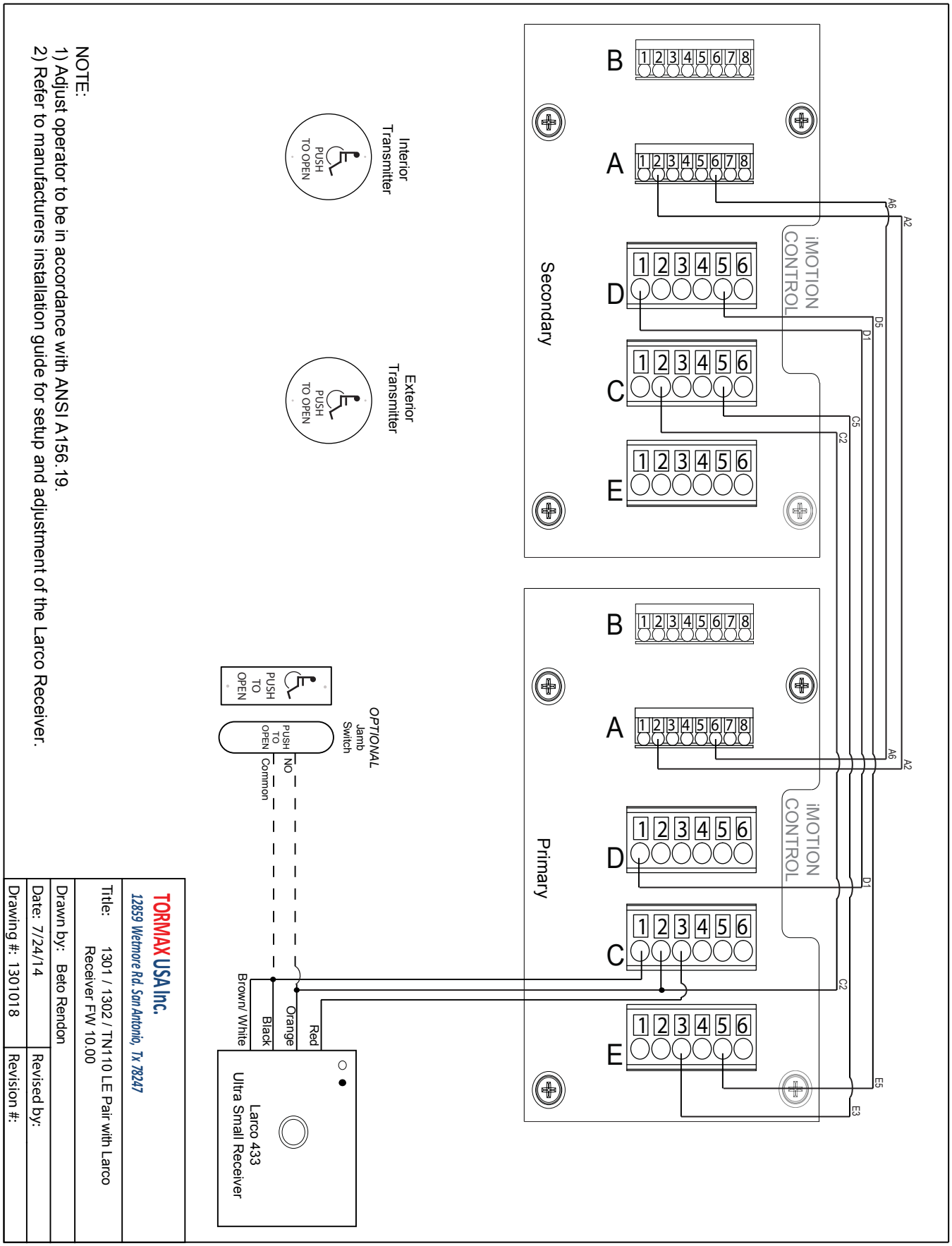


NOTE:

1) Adjust operator and sensors to be in accordance with ANSI A156.10.
2) On OC-904C control set dipswitches: (1) to N.O., (2) to N.O., (3) to Knowing Act
3) Enter Code 682 Output 1 for Open door data.
4) Refer to manufacturers Installation/ Users guides to setup and adjust the Elite Sensor system, Eagle and/ or Larco Receiver.

TORMAX USA Inc. *12859 Wetmore Rd. San Antonio, Tx 78247*	
Title: 1301 / 1302 / TN110 with Optex ProSwing Elite, Eagle, Receiver Larco 433, Hard Wired PP	
Drawn by: Beto Rendon	
Date: 3/11/10	Revised by: GDM
Drawing #: 1301017	Revision #: 01

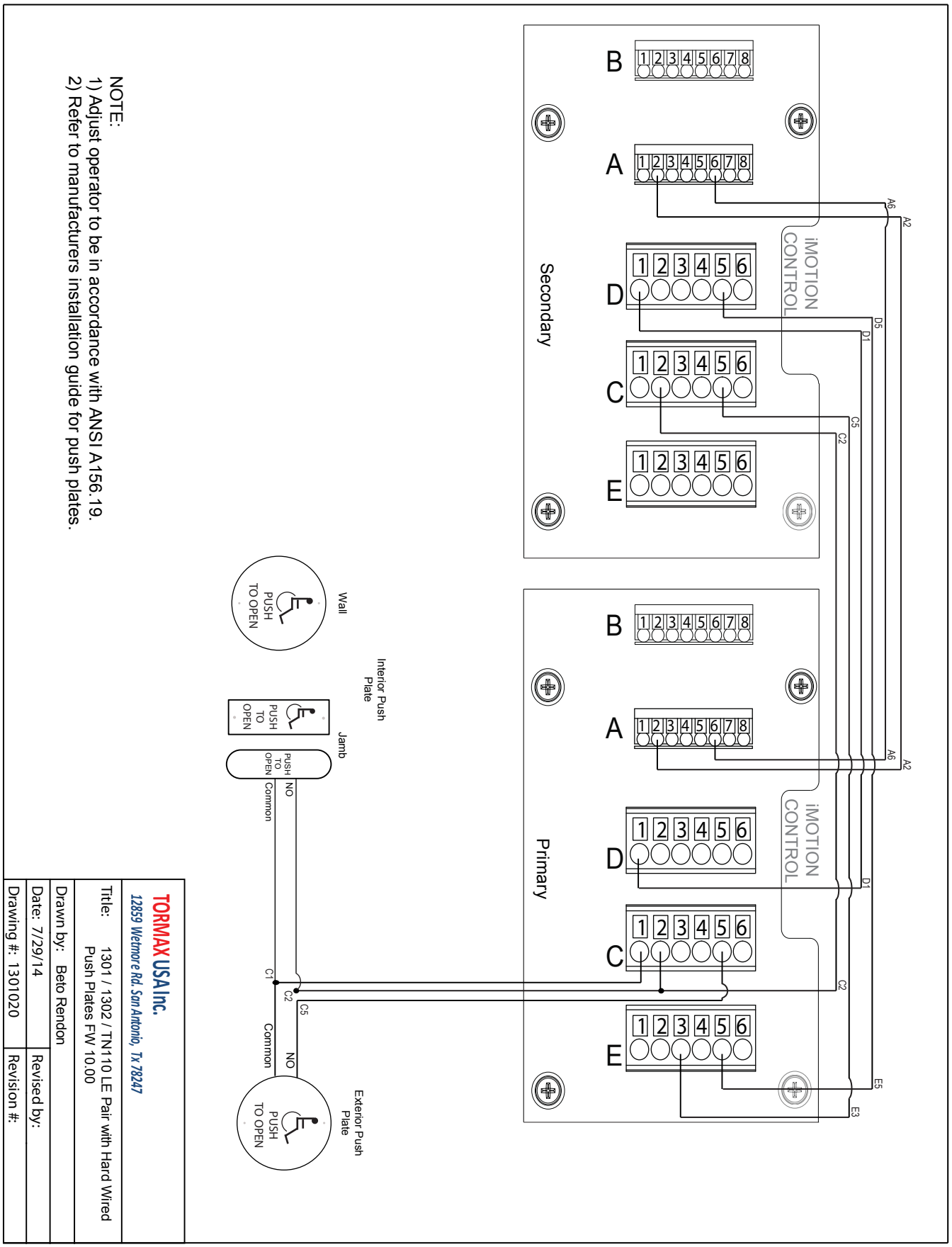
Connection Diagram



NOTE:
1) Adjust operator to be in accordance with ANSI A156.19.
2) Refer to manufacturers installation guide for setup and adjustment of the Larco Receiver.

TORMAX USA Inc.	
12859 Wetmore Rd. San Antonio, Tx 78247	
Title: 1301 / 1302 / TN110 LE Pair with Larco Receiver FW 10.00	
Drawn by: Beto Rendon	
Date: 7/24/14	Revised by:
Drawing #: 1301018	Revision #:

Connection Diagram

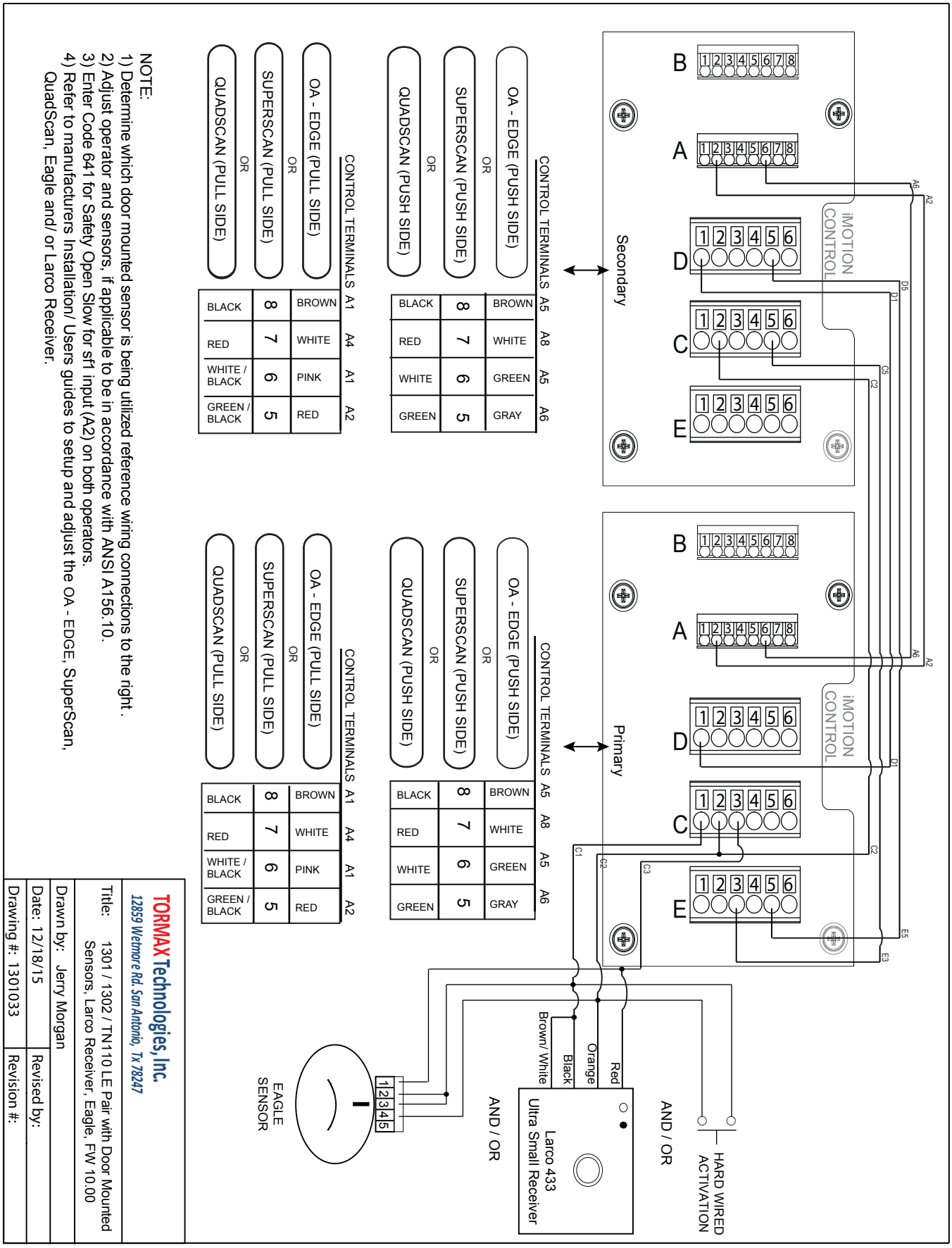


NOTE:
1) Adjust operator to be in accordance with ANSI A156.19.
2) Refer to manufacturers installation guide for push plates.

TORMAX USA Inc.
12859 Wetmore Rd. San Antonio, Tx 78247

Title:	1301 / 1302 / TN110 LE Pair with Hard Wired Push Plates FW 10.00
Drawn by:	Beto Rendon
Date: 7/29/14	Revised by:
Drawing #: 1301020	Revision #:

Connection Diagram



NOTE:

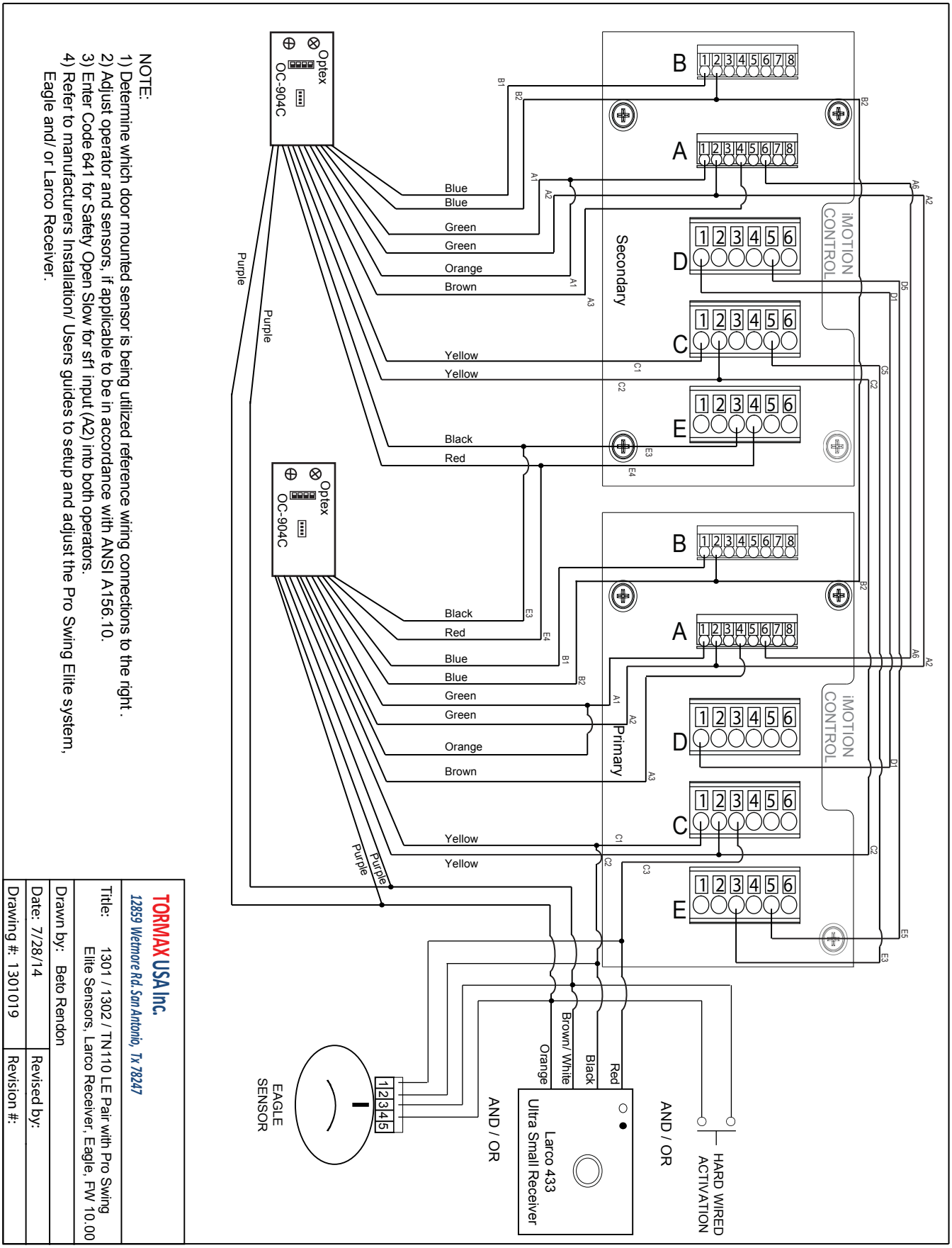
1) Determine which door mounted sensor is being utilized reference wiring connections to the right .
2) Adjust operator and sensors, if applicable to be in accordance with ANSI A156.10.
3) Enter Code 641 for Safety Open Slow for sf1 input (A2) on both operators.
4) Refer to manufacturers Installation/ Users guides to setup and adjust the OA - EDGE, SuperScan, QuadScan, Eagle and/ or Larco Receiver.

TORMAX Technologies, Inc.

12859 Wetmore Rd. San Antonio, Tx 78247

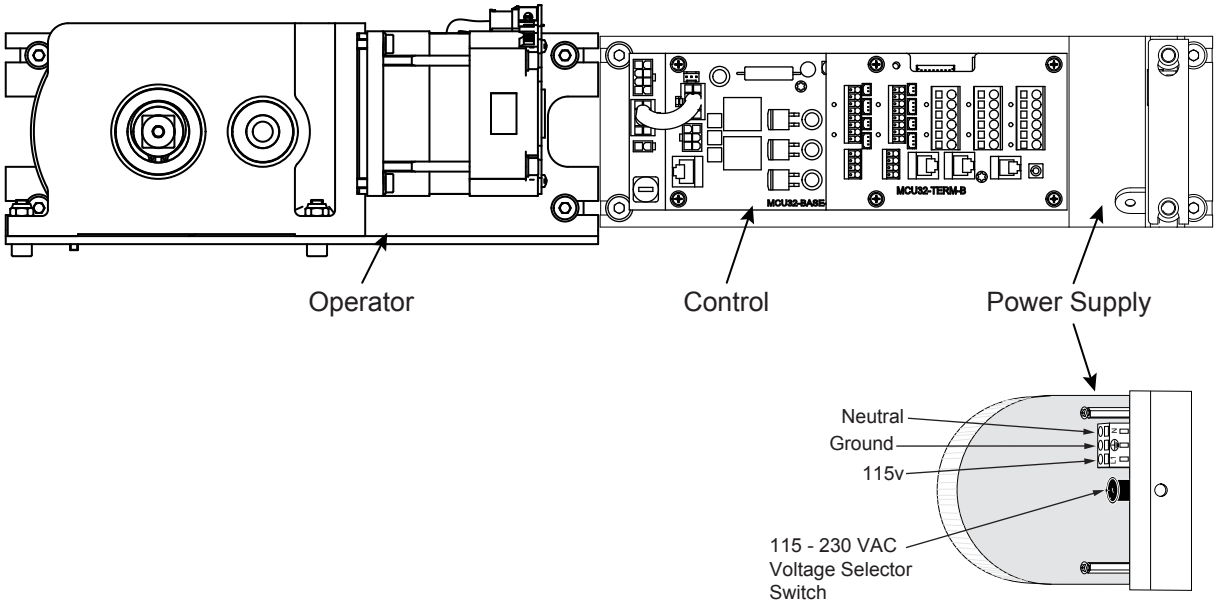
Title:	1301 / 1302 / TN110 LE Pair with Door Mounted Sensors, Larco Receiver, Eagle, FW 10.00
Drawn by: Jerry Morgan	
Date: 12/18/15	Revised by:
Drawing #: 1301033	Revision #:

Connection Diagram



Technical Specifications

T-1738 e	Technical Data	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	iMotion 1302 Swing Door Drive	
Release	17 April 2015	
Use	Planning	

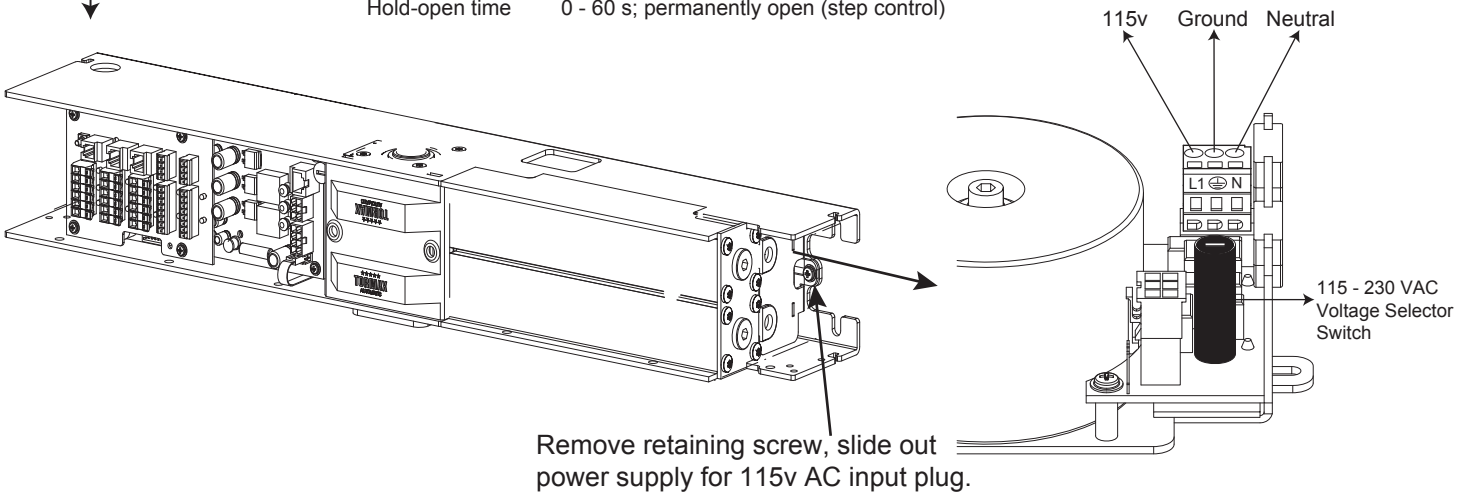


Operator type	iMotion 1302 Swing Door Operator
Drive system	Electro-mechanical swing door operator with AC permanent magnet synchronous motor, POSC or POPC
Control system	Control Unit 1302 MCU32
Mains connection	1 x 115 VAC or 1 x 230 VAC 50 - 60 HZ, 10 Amp
Power consumption	5 ... 225 W
Sensor power supply	24 VDC, .75 Amp
Lock output	6 ... 24 VDC max, 2 Amp max.
Protective class of drive	IP22
Ambient temperature	-4 F to 122 F
Outputs	24 VDC, .75 Amp total (short circuit proof within power supply)
CE approval	Prototype test according to EN14351-1 (pending), UL - 325, UL - 228
Sound pressure level	46 dB (A) typical
Standards	EN 61000-6-2 EN 61000-6-3 EN 60335-1
Durability	Class 3 according to DIN 18650-1 June 2010 1,000,000 test cycles with 4,000 cycles per day
Operator dimension	3-15/16" H x 5-5/16" W x 25-3/16" L (Operator only)
Operator weight	32 lbs. (Operator only)
Opening angle	Out swing: 110 max., In swing: 100 max.
Hold-open time	0 - 60 seconds, permanently open (step control)

Technical Specifications

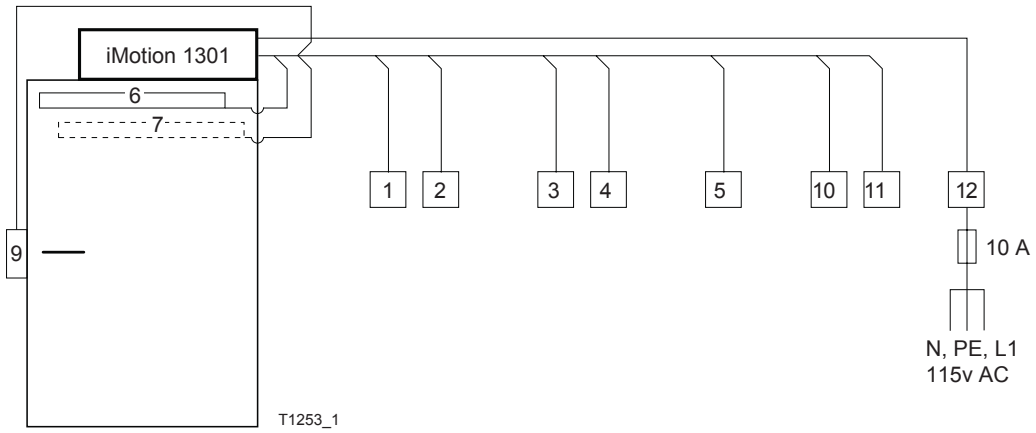
T-1252 e	Technical Data	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	iMotion 1301 Swing Door Drive	
Release	29 November 2011	
Use	Planning	

Operator type	iMotion 1301 Swing Door Operator
Drive system	Electro-mechanical swing door operator with AC permanent magnet synchronous motor, POSC or POPC
Control system	Control Unit MCU32
Mains connection	1 x 115 VAC or 1 x 230 VAC 50 - 60 HZ, 10 Amp
Power consumption	6 ... 250 W
Power supply	24 VDC (+.5 -1.5V) max 18 W* /.75 A, battery operated min16.5V
Lock output	6 ... 24 VDC max, 2 Amp max.
Protective class of drive	IP22
Ambient temperature	-4° F to 122° F
Sensor outputs	24 VDC, .75 Amp total (short circuit proof within power supply)
Sound pressure level	<70 dB (A)
CE approval	Prototype test according to DIN 18650 (TUV), UL - 325, UL - 228
Standards	EN 61000-6-2 EN 61000-6-3 EN 60335-1
Durability	Class 3 according to DIN 18650-1 June.2010 1,000,000 test cycles with 4,000 cycles per day
Operator dimension	3-15/16" H x 5-5/16" W x 25-3/16" L (Operator only)
Operator weight	32 lbs. (Operator only)
Door Sizes according to EN1154	Standard linkage (out swing) 3 - 6, Slide levers (in swing) 3-5
Mass moment of inertia of door leaf	max. 17.984 lbf
Opening angle	Out swing: 110° max., In swing: 100° max.
Opening speed	max. 45°/s
Closing speed	max. 45°/s
Hold-open time	0 - 60 s; permanently open (step control)



Technical Specifications

T-1253 e	Cable Plan	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	TORMAX iMotion 1301,1302	
Release	18 June 2014	
Use	Planning, installation	



No.	☒	Control Components	Notes	Cable	Length (ft) without screen	Length (ft) with screen
1		Activator/Push-button inside	Stranded wire recommended	4 × 20 AWG	< 98	< 328
2		Activator/Push-button outside	Stranded wire recommended	4 × 20 AWG	< 98	< 328
3		Key-switch	Stranded wire recommended	2 × 20 AWG	< 98	< 328
4		Input	Stranded wire recommended	… × 20 AWG		< 328
5		Userinterface iMotion Connected with FCC-connector		Phone ribbon cable 6 x 0,14 mm ² RJ12,6P,6C	< 98	
		Userinterface iMotion Connected with LIN-Adapter		3 × 0,25 mm ²	< 98	< 328
6		Safety activator closing	Stranded wire recommended	4 × 20 AWG	< 98	< 328
7		Safety activator opening	Stranded wire recommended	4 × 20 AWG	< 98	< 328
8						
9		Door lock	Stranded wire recommended	4 × 20 AWG	< 82	< 328
10		Message 1 …	Stranded wire recommended	2 × 20 AWG	< 98	< 328
11		Message 2 …	Stranded wire recommended	2 × 20 AWG	< 98	< 328
12		Mains main switch		3 × 14 AWG		

Technical Specifications

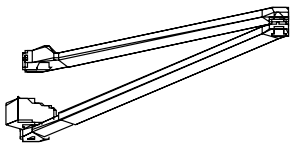
T-1249 e

Wind Load

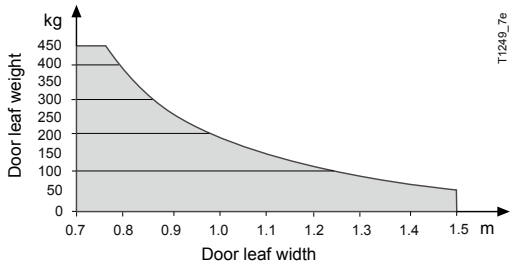
1	**160 PA**	**(53,5 km/h)**
2	**100 PA**	**(42,3 km/h)**
3	**63 PA**	**(33,6 km/h)**
4	**40 PA**	**(26,7 km/h)**
5	**25 PA**	**(21,1 km/h)**
6	**16 PA**	**(16,9 km/h)**
7	**10 PA**	**(13,4 km/h)**
8	**6,3 PA**	**(10,6 km/h)**

➡ Wind △p ⤵ opening/closing

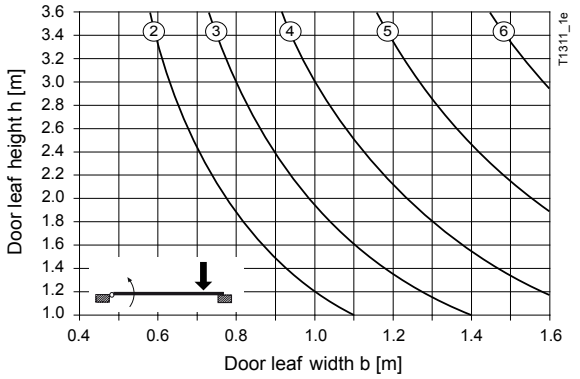
Linkage



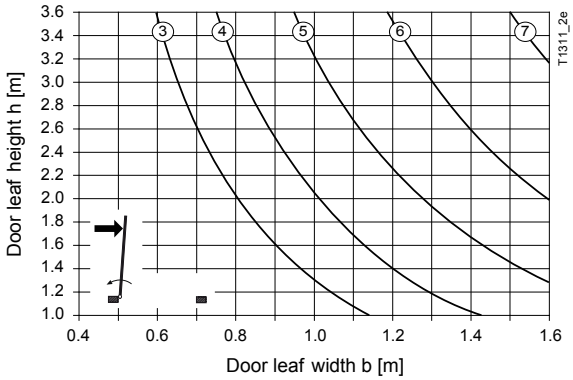
Maximum Door Leaf Weights



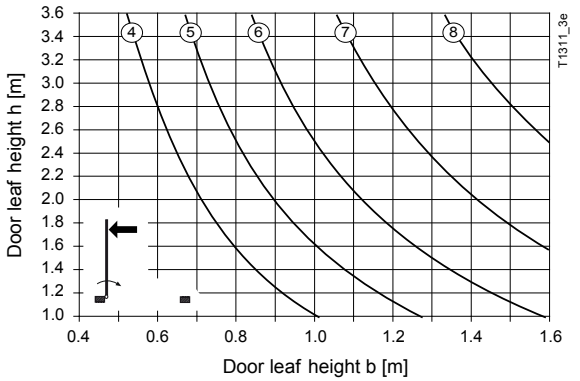
Door closed, opening with motor against spring



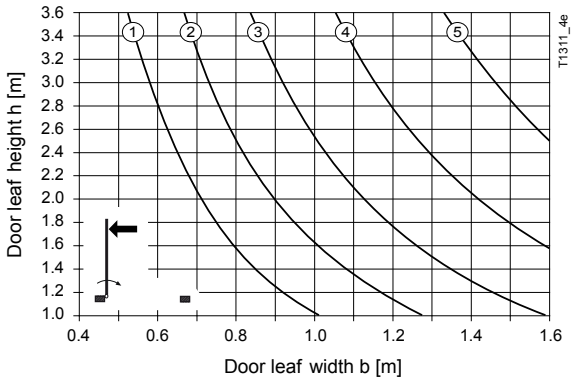
Door almost open, opening with motor against spring



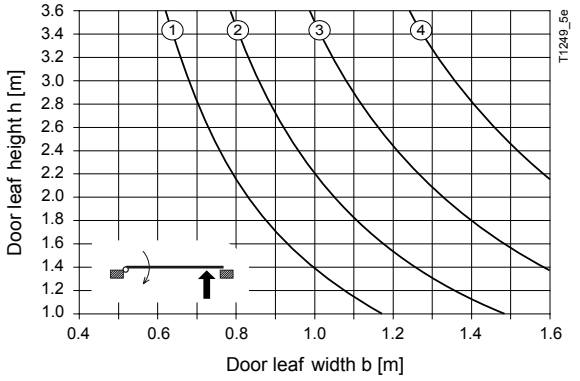
Door open, closing with spring without motor



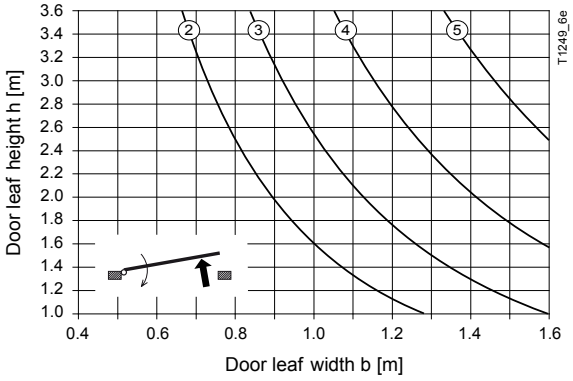
Door open, closing with spring and motor



Door closed, closing with spring without motor



Door almost closed, closing with spring and motor



Technical Specifications

Wind Load

1	160 PA	(53,5 km/h)
2	100 PA	(42,3 km/h)
3	63 PA	(33,6 km/h)
4	40 PA	(26,7 km/h)
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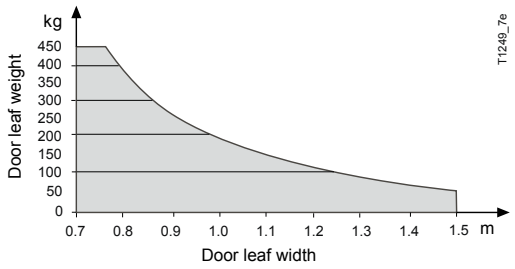
6	16 PA	(16,9 km/h)
7	10 PA	(13,4 km/h)
8	6,3 PA	(10,6 km/h)

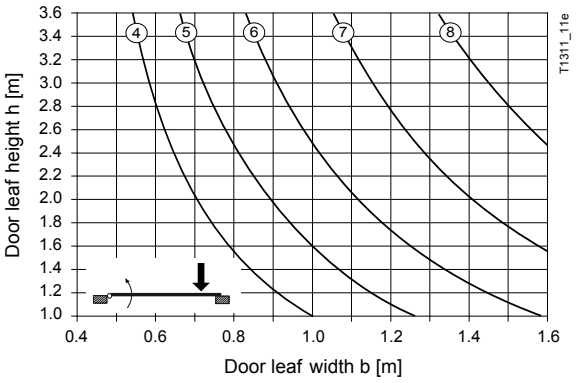
➡ **Wind △p**) opening / closing

Sliding lever

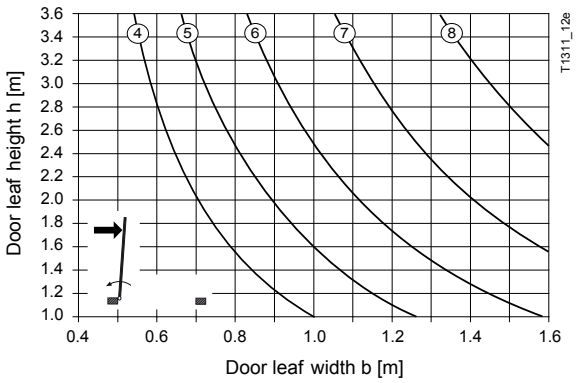
Maximum Door Leaf Weights



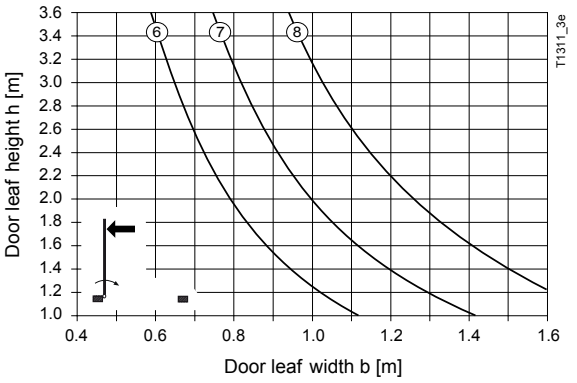
Door closed, opening with motor against spring



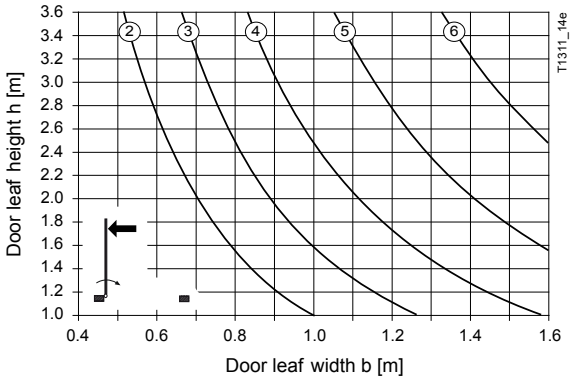
Door almost open, opening with motor against spring



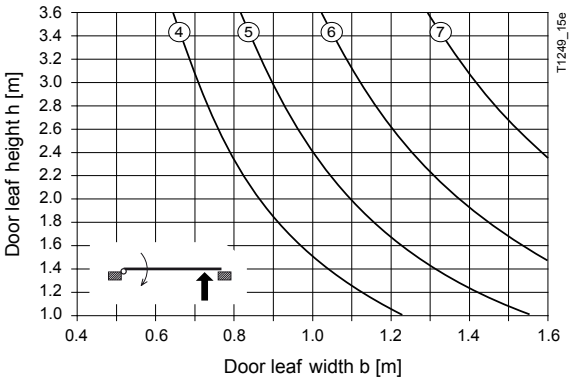
Door open, closing with spring without motor



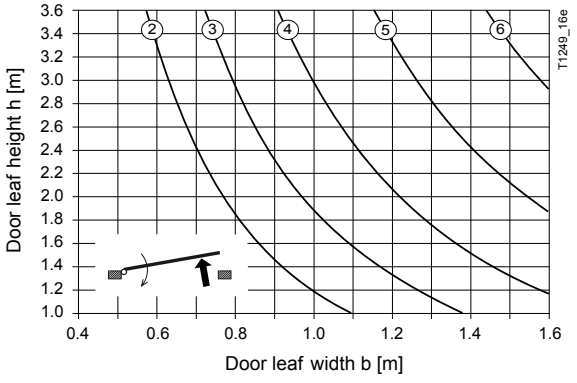
Door open, closing with spring and motor



Door closed, closing with spring without motor



Door almost closed, closing with spring and motor

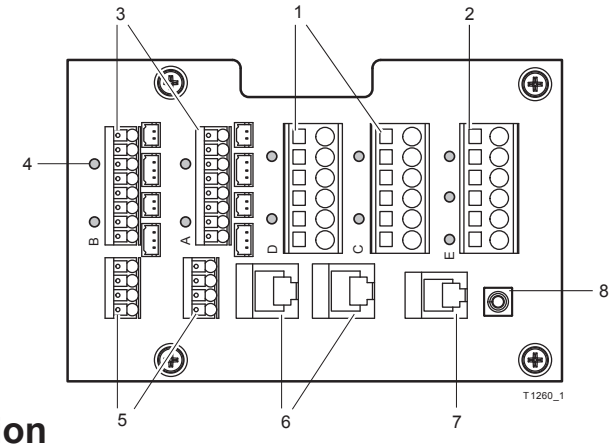


Technical Specifications

T-1753 e	Application Double Door Hospital	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	TORMAX 1301, 1302 Swing Door Drive	
Release	10 October 2014	
Use	Planning, installation, maintenance	

Purpose

Input, output and FCP connections for the iMotion 1301, 1302 drives.



1 Inputs
2 Outputs
3 Safety sensors
4 LED (I/O function)
5 CAN bus
6 LIN bus
7 RS232
8 SW 2, Activation & Programming

Installation

The module must be protected against electrostatic discharge (ESD) when touching it. The module may only be laterally touched. Other components must not be touched.

- Fasten the circuit board at the predetermined points in the power-free condition.
- Switch on the power supply only after all MCU32 modules are connected.

Connection Diagrams

See T-1263 for iMotion Sliding Door Drive and T-1262 for iMotion Swing Door Operator

Technical Data

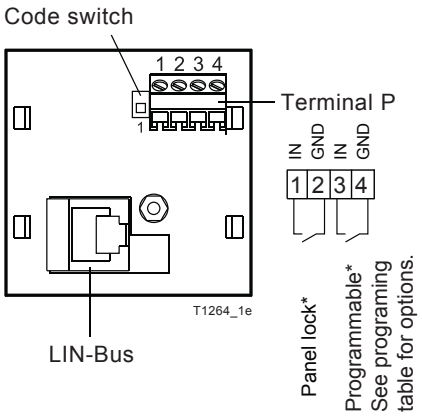
Inputs:	8 x	Pull up in: 24 VDC / 3 mA, Function is programmable
Outputs:	2 x	Transistor out: 24 VDC / 0,75 A max. Function is programmable
	1 x	Transistor pwm out/ <24 W and < 2A, Function and voltage are programmable
Load 24 V power supply:	0.75 A	with MCU32-PSUP-40-18-x
	1.5 A	with MCU32-PSUP-40-36-x
Terminal cross-sections:	1.5 mm^2 (stranded wire conductors or 1 wire) for terminals A, B and CAN BUS	
	2.5 mm^2 (stranded wire conductors or 1 wire) for terminals C, D, E	
Ambient temperature:	–4...+122 °F	
Dimensions:	4.72” × 3.03”	
Module interfaces:	TORMAX safety sensors with plugable connections	
	2 x LIN/ FCC 6 pole for MCU32-USIN, MCU32-INOU, MCU32-LOCU	
	1 x RS232/ FCC 4 pole	
	2 x CAN	

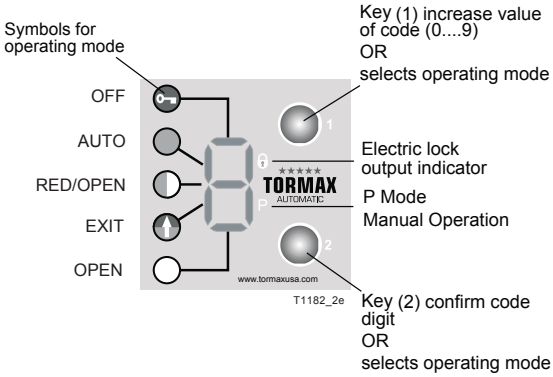
Technical Specifications

Functional Control Panel (FCP) MCU32-USIN-7-A

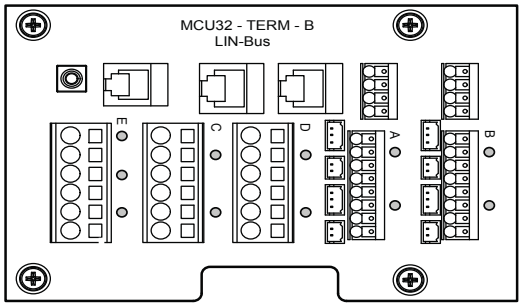
Purpose

Programming and operating the TORMAX iMotion universal processor.

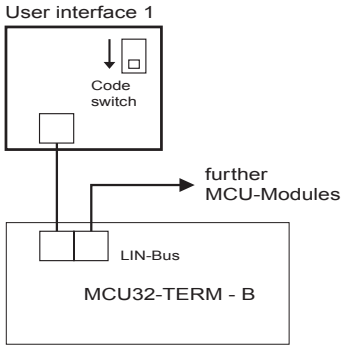




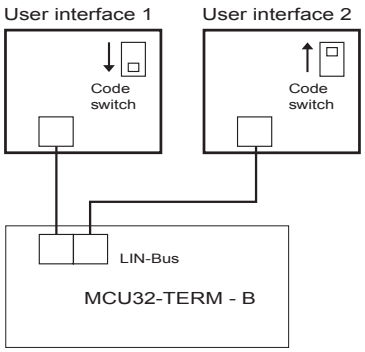
Connection Diagram



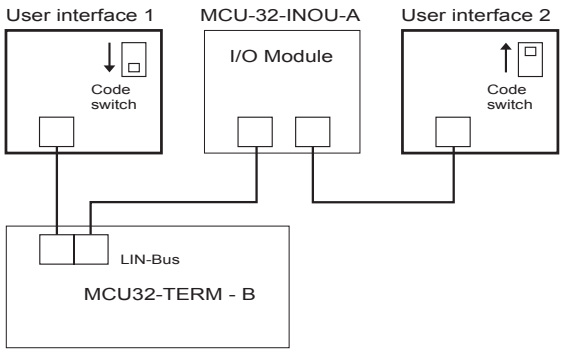
Connection Option 1



Connection Option 2



Connection Option 3



Technical Specifications

- Switch mains 115 V AC ON after the functional control panel(FCP) is connected.

LIN Connection

- Cut to length and assemble the LIN connection cable on both ends with a FCC 6-pole plug
- FCC plug is polarity sensitive

FCP 6 pole 98’ Max FCP 6 pole

- First connect the LIN cable and FCP to the 1301 operator then switch the 110vAC on.

Technical Data

Inputs:	2 × Pull up in: 24 VDC / 3 mA, function programmable
Terminal cross section:	0.5 mm^2 (strand or wire)
Interface	LIN, FCC 6-Pol
Ambient Temperature:	–4°F…+122°F
Dimensions:	1.7716 inch x1.7716 inch
LIN cable length:	98’ Max

TECHNICAL SPECIFICATIONS

T-1261 e	Module Documentation Base Module MCU32-BASE-40-200-A	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	iMotion 1301, 1302	
Release	11 January 2012	
Use	Planning, installation, maintenance	

Purpose

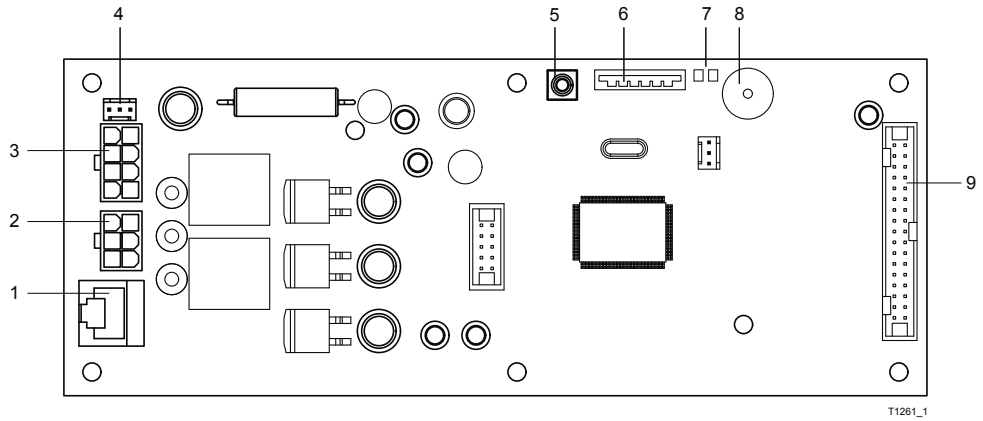
To manage the function of all iMotion 1301,1401 swing door operators and iMotion 2301,2401 sliding door drives.

Function

The base module is the central functional control system of the MCU32 module family. The module contains the processor system including a non-volatile (i.e. voltage failure safe) memory for the adjusted values, a 3-phase converter for the motor and the drivers for the interfaces OUT1-2, PWM, as well as LIN and CAN.

The control system is programmed with the FCP for commissioning and basic adjustments. The Skipper software is used to update the base modules firmware version and to adjust parameters in addition to the FCP display.

Base module MCU32-BASE-40-200-A



1 Connection for encoder MCU32-ENCO-24-16-A
2 Connection for motor MCU32-MOTR-40-… (*)
3 Connection for power supply module MCU32-PSUP-40-… (*)
4 Connection for potentiometer, closed position indicator
5 SW1
6 Slot for configuration card MCU32-CONF-… (*)
7 Display for power supply 24 V and 5 V
8 Beeper
9 Connection for terminal module MCU32-TERM-… (*)

(*) Different versions

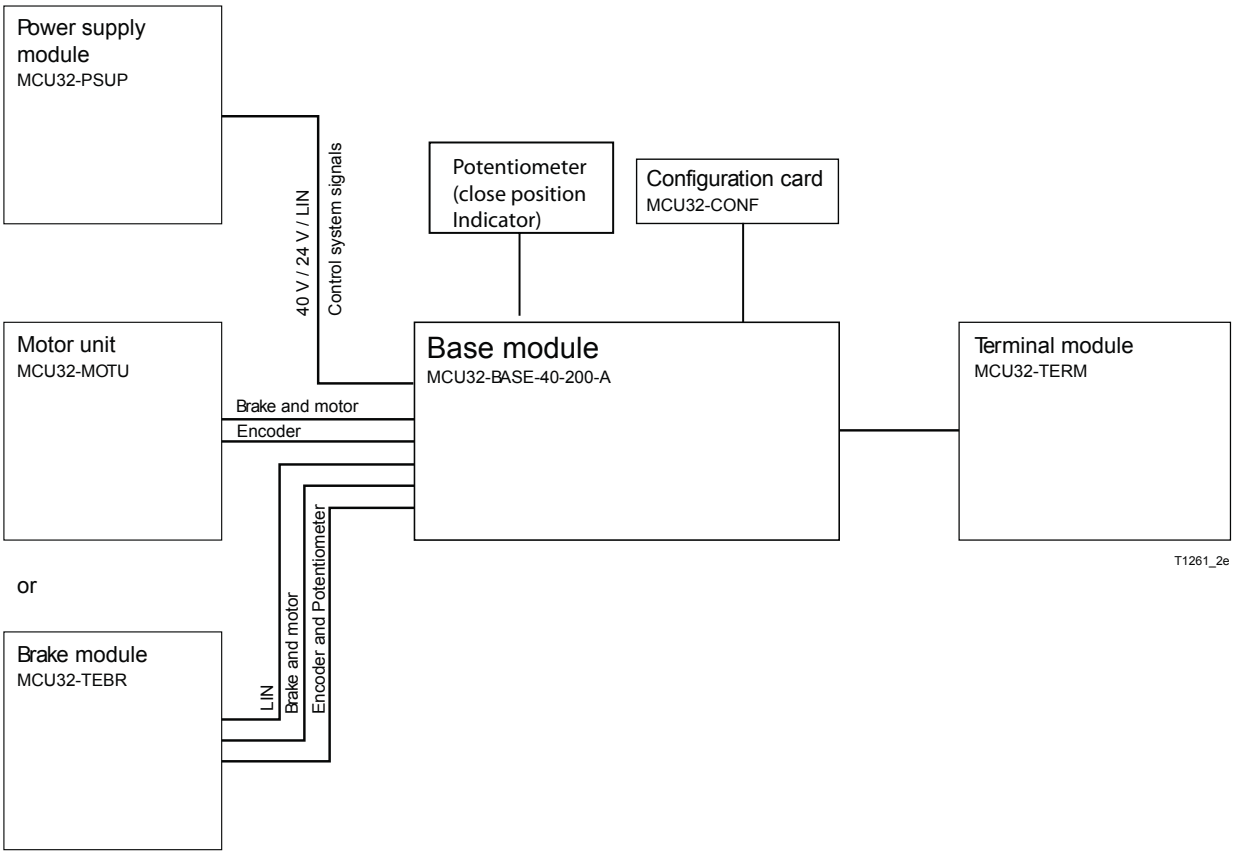
Installation

The module must be protected against electrostatic discharge (ESD) when touching it. The module may only be touched on the edges of the board. Other components must not be touched

- With power removed, install and fasten the printed circuit board at the predetermined points.
- Switch “ON” the power supply only after all surrounding MCU32 modules are connected.

TECHNICAL SPECIFICATIONS

Module Connections



Commissioning

Program using FCP see programming instructions and programming charts.

Technical Data

Processor	32 bits, 30 MHz
System monitoring	Complies with DIN 18650 requirements
Ambient temperature	–4°F....+167°F
Overheating protection	for power supply 40 V
Dimensions	7.873” x 3.031”
Module interfaces	MCU32-PSUP MCU32-MOTU MCU32-TERM MCU32-CONF MCU32-TERB

TECHNICAL SPECIFICATIONS

T-1279 e	Module Documentation Battery Backup MCU32-BATU-24-1-A	★★★★★ TORMAX AUTOMATIC 12859 Wetmore Road San Antonio, Tx 78247 1-888-685-3707 www.tormaxusa.com
Area of application	iMotion 1301, 1302 Swing Door Drive	
Release	July 2008	
Use	Planning, installation, maintenance	

Purpose

The battery backup unit is designed to be used on the iMotion 1301 Swing Door Operator only. The module is used for limited - time operation of the system and/or for accomplishment of final motion into a determined position. A further use is the limited - time admission into the building via the key switch during a power failure.

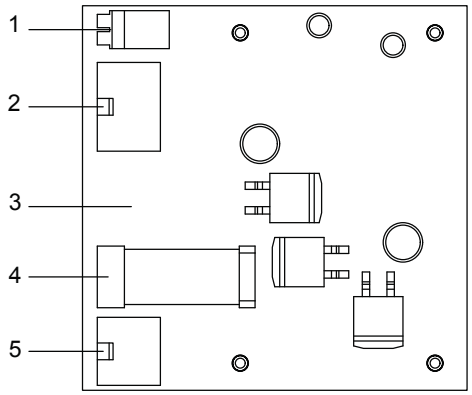
Functional Principle

The battery unit includes the batteries MCU32-ACCU-24-1-A and the battery module MCU32-BATT-24-1-A (1).

The batteries store the energy required to continue system operation on power failure. The battery module contains a charging circuit that changes the batteries in the presence of main power and/or holds them in the charged state. In oder to avoid total discharge, the battery can be switched off with a switch.

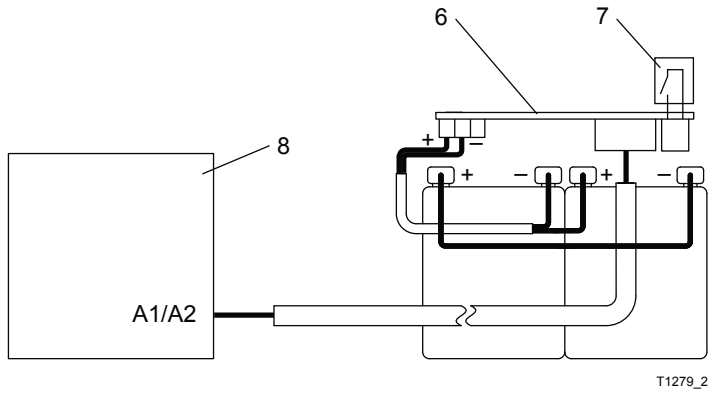
The operational function depends on the programming of the basic control system, see programming table on page 31 for programming options

The wake-up function allows renewed switching on with subsequent door opening after the battery has been disconnected. The function depends on the current charge and is initiated by the Key Switch (7).



1 Terminal key switch
2 Connector A
3 Battery module
4 Fuse 3,14 AT
5 Connector BAT
6 Battery unit
7 Key switch (wake-up)
8 Power supply module

Connection Diagram



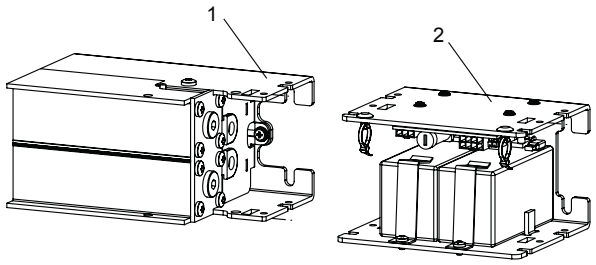
TECHNICAL SPECIFICATIONS

Battery Unit Installation

The battery unit can be installed on the left or right side of the operator if header space allows.

With the provided cable, connect the battery unit with the power supply module on the control unit. (connector A1 or A2).

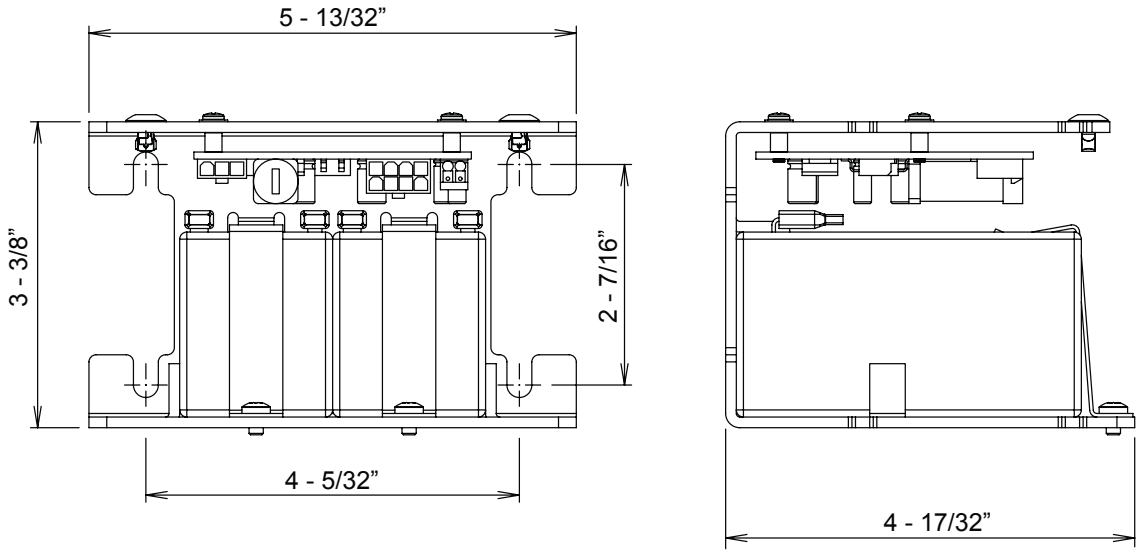
When connecting the batteries make sure that the polarities are not interchanged and the contacts are not short circuited! A sudden discharge may cause an explosion of the batteries! The constituents are highly poisonous!



Commissioning

The battery module is detected automatically during auto configuration. Reference Commissioning and Programming Tables for configuration.

Component Dimensions



Technical Data

Rated voltage	24 VDC
Maximum power	120 W
Batteries	2 × 12 V / 1,2 Ah (52×97×43 mm)
Ambient temperature	0 … + 104 °F
Interfaces	MCU32-PSUP-40-18-B

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