TORMAX
AUTOMATIC

T-957 US801353
4-2-10

Installation and Service Manual
TDA SWING DOOR OPERATOR

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1 Introduction

These instructions are intended for AAADM Certified technicinas. Tormax strongly recommends all adjsstments be made in accordance with ANSI A156.10 and A 156.19 standards.

Symbols Used in these Instructions

These two symbols mark all passages that concern your safety:

Warning of a health hazard of a general kind

Warning of electric voltage/current

Passages with text on grey background must be absolutely observed for reliable performance of the system! Neglect can cause material damage.

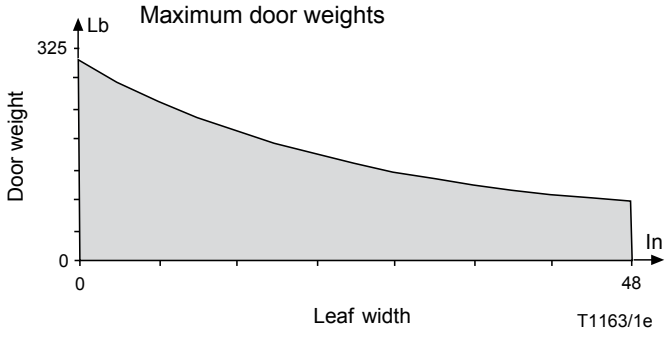
2 Safety

General Safety Instruction

Before beginning the installation read the instructions in this manaul failure to do so may cause serious injury to users or damage to the operator. Make sure the door system is installed and serviced by an AAADM certified technician to the latest ANSI A156.10 and or ANSI A156.19 standard.

These products are Underwriters Laboratories, Inc. (UL) listed and cUL certified for the Canadian marketplace, and therefore comply with the requirements of the National Electrical Code (NEC) and the Canadian Electrical Code (CEC). Installa - tions intended to meet UL and cUL requirements must be followed as described in the instruction provided herein. These are minimum standard requirements. Where local codes exceed these requirements, they must be followed as well.

The maximum leaf weight depends on the size of the door. Please proceed according to the diagram below.



3

Preventing General Hazards and Possible Damage to This Equipment

- Keep fingers away from all moving parts.
- Verify that the power selection switch is set to the correct voltage before start-up.
- The power supply cable (flexible cord) should be entered via the plastic end side knockout that is close to the input power supply terminals. It should not be routed through doorways, window openings, walls, ceilings, floors, etc. The power supply cable (flexible cord) should not be attached or otherwise secured to the building structure. It should not also be concealed behind walls, etc.
- Never allow the power supply cable (flexible cord) to become entrapped in moving parts of the operator, door, or system.

Warnings of Dangerous Electrical Voltages or Current

- Be sure the electrical power is disconnected and locked-out when working on the operator unit.
- Install the electrical cables and power only after the mechanical installation to the unit is done.
- Turn on the power to the operator unit only after all internal cables are connected. Do not connect cables while the unit is powered.
- Always use appropriate tools for installation and repair.

General Safety and Accident Prevention Instructions

Please read the operating instructions of the TORMAX operator and the following safety instructions carefully prior to commissioning or performing any work on the system—and adhere to them!

Pay particular attention to the specially marked notes in these instructions (for an explanation of the symbols please refer to chapter 1)!

Use for Intended Purpose

The TORMAX operator has been designed and constructed according to the current state of technology and the recognized safety related rules and is intended exclusively for the usual application in conjunction with automatic TORMAX doors. The enclosure operator corresponds to protective class IP22 . Without additional safety measures, the operator may only be installed inside of buildings.

Any other use is considered incorrect and may result in injuries to the user or third parties. Further, it may result in damages to the system or other associated equipment. The manufacturer will not be liable for damages resulting from incorrect application; the risk of such applications must be borne entirely by the user.

Requirements Relating to Installation Personnel

Tormax strongly recommends all service and installations be performed by an AAADM certified inspector to the latest ANSI A156.10 or A156.19 standards.

Basic Safety Measures – Appropriate Behavior

Use system only in a technically sound condition. Ensure that faults which could diminish safety are eliminated in at once.

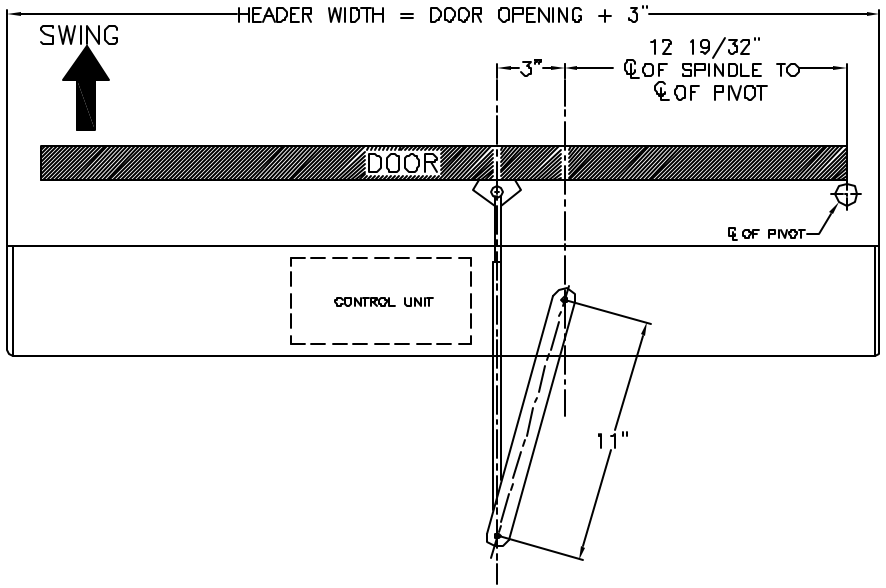
Do not touch any moving parts. Extra caution is required in the areas of the drive lever, the linkage and the secondary closing edges of the hinge.

Electrical voltage / current: perform manipulation cleaning only when the power supply is switched off!
Connect mains supply only when all internal cables are connected.

Use only tools suited for the relevant work sequence, without exception. Make sure the tools are in a sound condition.

Relevant Regulations

The operating, service and maintenance instructions supplied by the manu–facturer must be observed. TORMAX door operators may only be maintained and repaired by AAADM certified technicians.

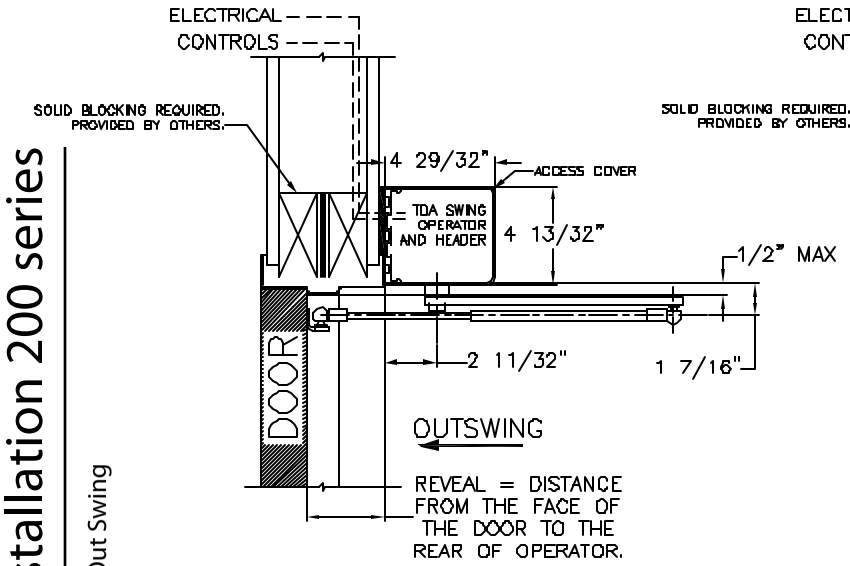


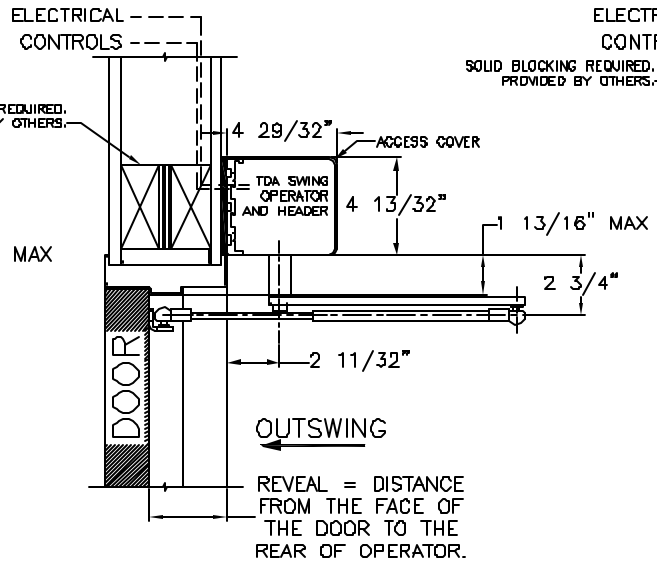
SINGLE OUTSWING TB6–A TDA 04A
DIMENSION SAME FOR SIMULTANEOUS PAIR.

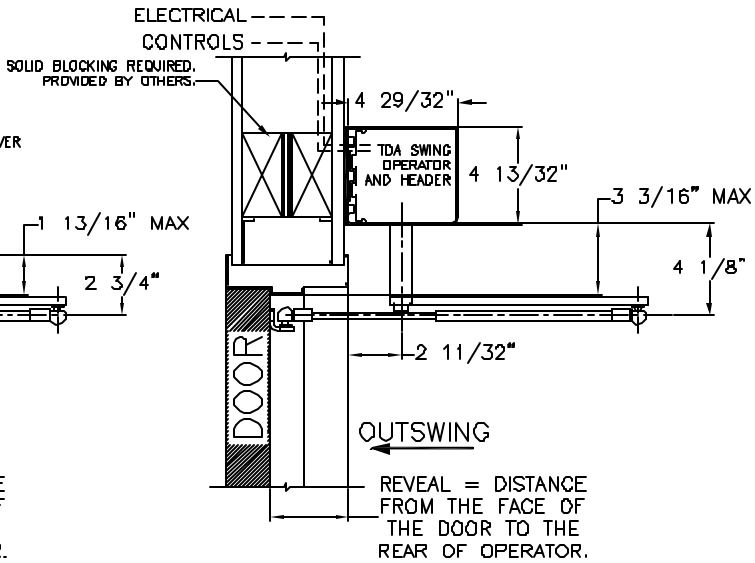
MAIN LEVER (CLEARANCE REQD.)	REVEAL DISTANCE	KIT DESCRIPTION & PART NUMBER	
		DESCRIPTION	PART NUMBER
1/2" CLEARANCE	−1 3/4" – 2 1/2"	OUTSWING ARM ASSEMBLY	STD.D1
	2" – 6 1/2"	OUTSWING ARM ASSEMBLY	STD.E1
	6" – 9 13/16"	OUTSWING ARM ASSEMBLY	STD.F1
1 13/16" CLEARANCE	−1 3/4" – 2 1/2"	OUTSWING ARM ASSEMBLY	STD.DH1
	2" – 6 1/2"	OUTSWING ARM ASSEMBLY	STD.EH1
	6" – 9 13/16"	OUTSWING ARM ASSEMBLY	STD.FH1
3 3/16" CLEARANCE MAIN LEVER PN US800364	−1 3/4" – 2 1/2"	OUTSWING ARM LINKAGE	STD.VGD
	2" – 6 1/2"	OUTSWING ARM LINKAGE	STD.VGE
	6" – 9 13/16"	OUTSWING ARM LINKAGE	STD.VGF

WHEN ORDERING: VERTICAL CLEARANCE & REVEAL MUST BE GIVEN TO DETERMINE CORRECT ARM KIT.

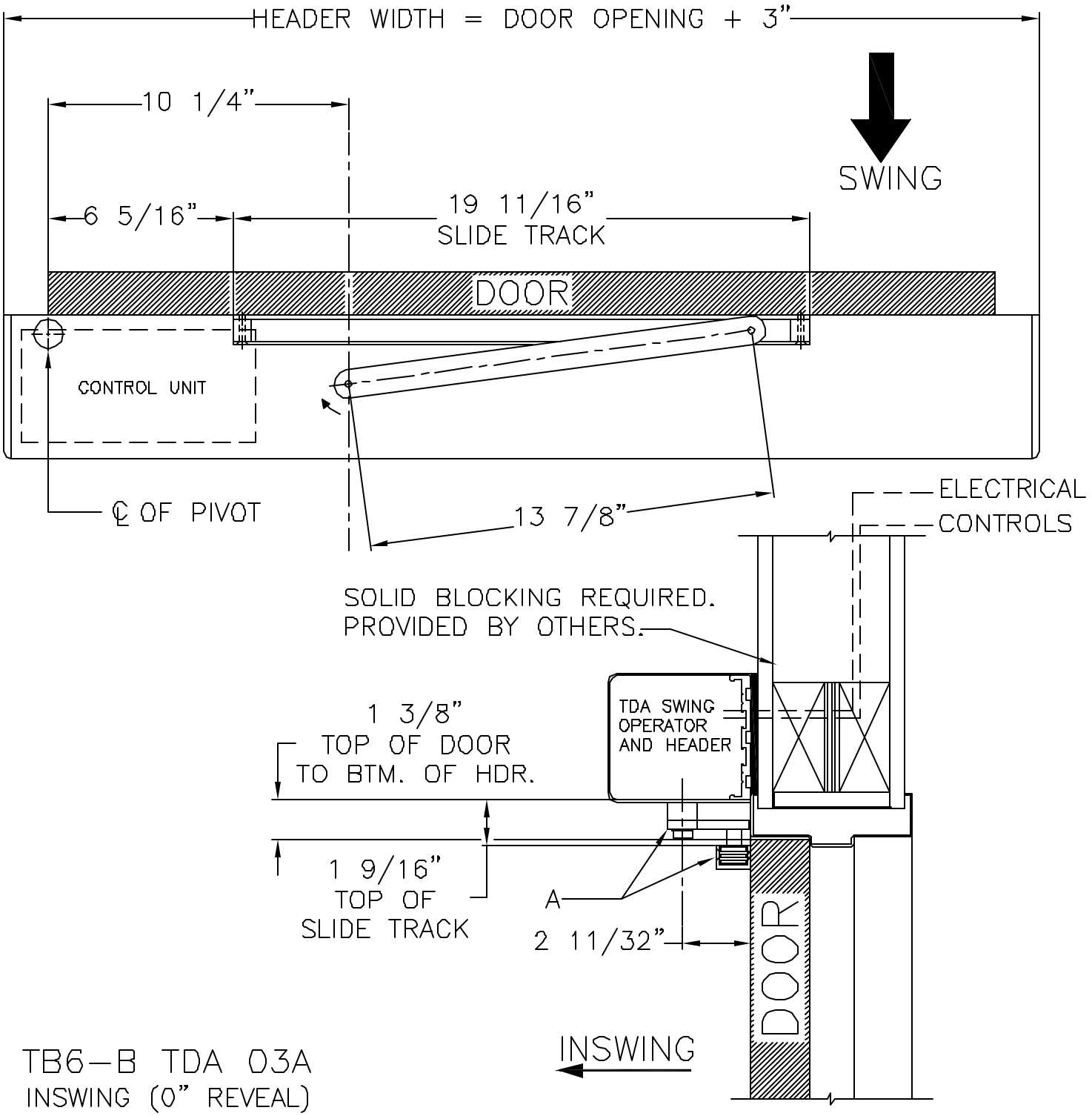
WHEN 3 3/16" CLEARANCE REQ'D. MAIN LEVER AND LINKAGE MUST BE SPECD. INDIVIDUALY.







0" Reveal In Swing



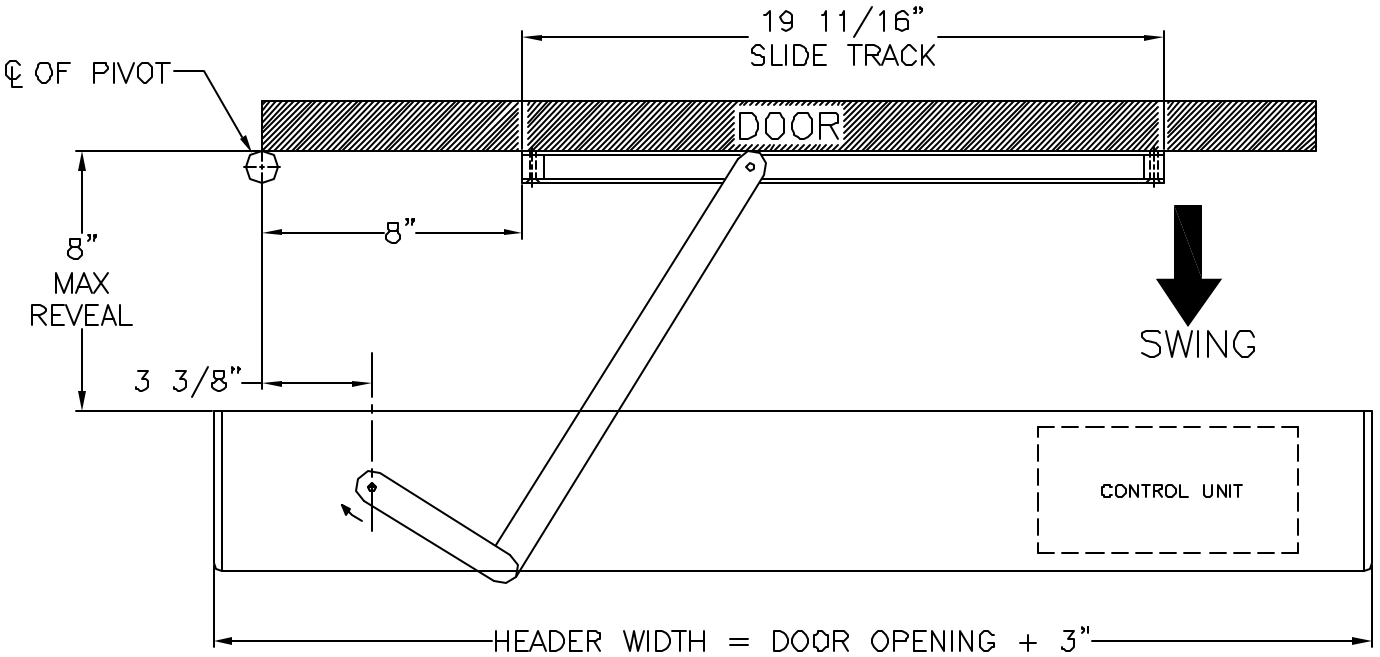
TB6-B TDA 03A

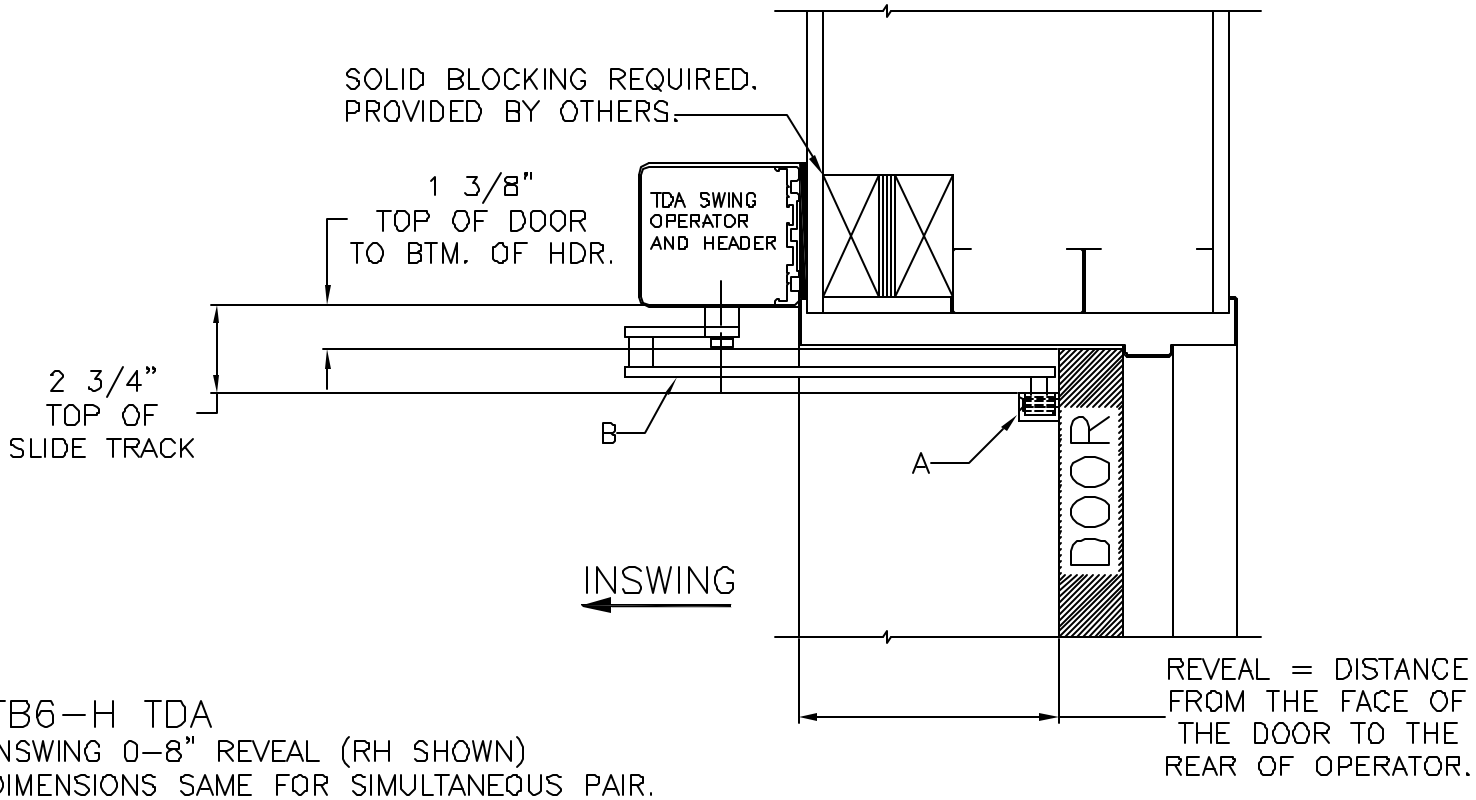
INSWING (0" REVEAL)

DIMENSIONS SAME FOR SIMULTANEOUS PAIR.

ITEM	DESCRIPTION	PART NUMBER
A	INSWING DR ARM & TRACK ASSY.	STD.GH1

0 "- 6" In Swing Arm (RH SHown)



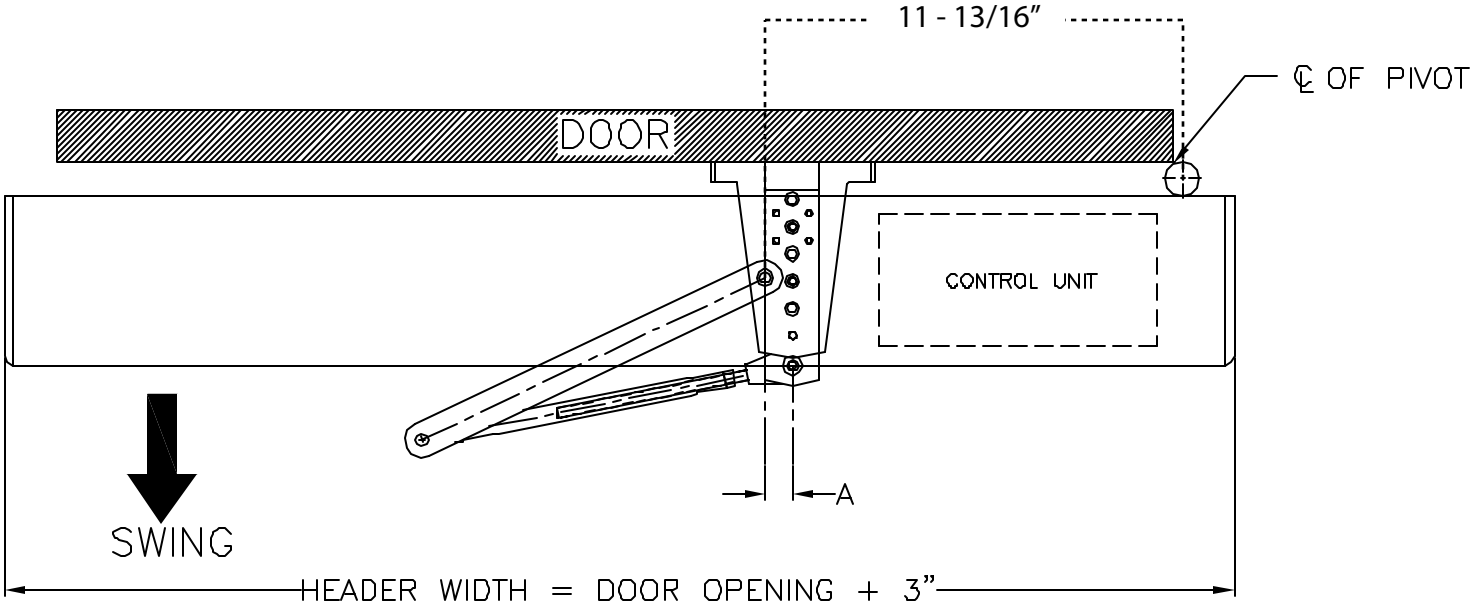


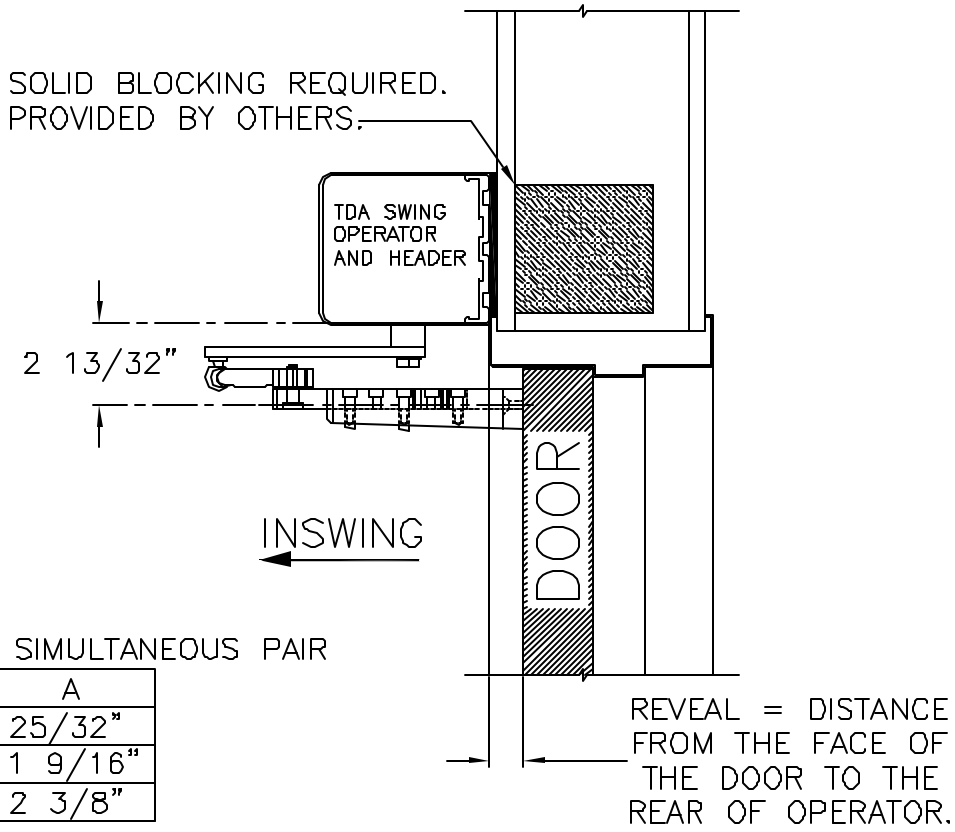
TB6-H TDA

INSWING 0-8" REVEAL (RH SHOWN)
DIMENSIONS SAME FOR SIMULTANEOUS PAIR.

ITEM	DESCRIPTION	PART NUMBER
A	TRACK ASSYEMBLY	STD.GS5
B	RH INSWING DOG LEG ARM	140911
	LH INSWING DOG LEG ARM	141046

In Swing Parallel Arm (Speical Order)





TB6-G TDA 06A

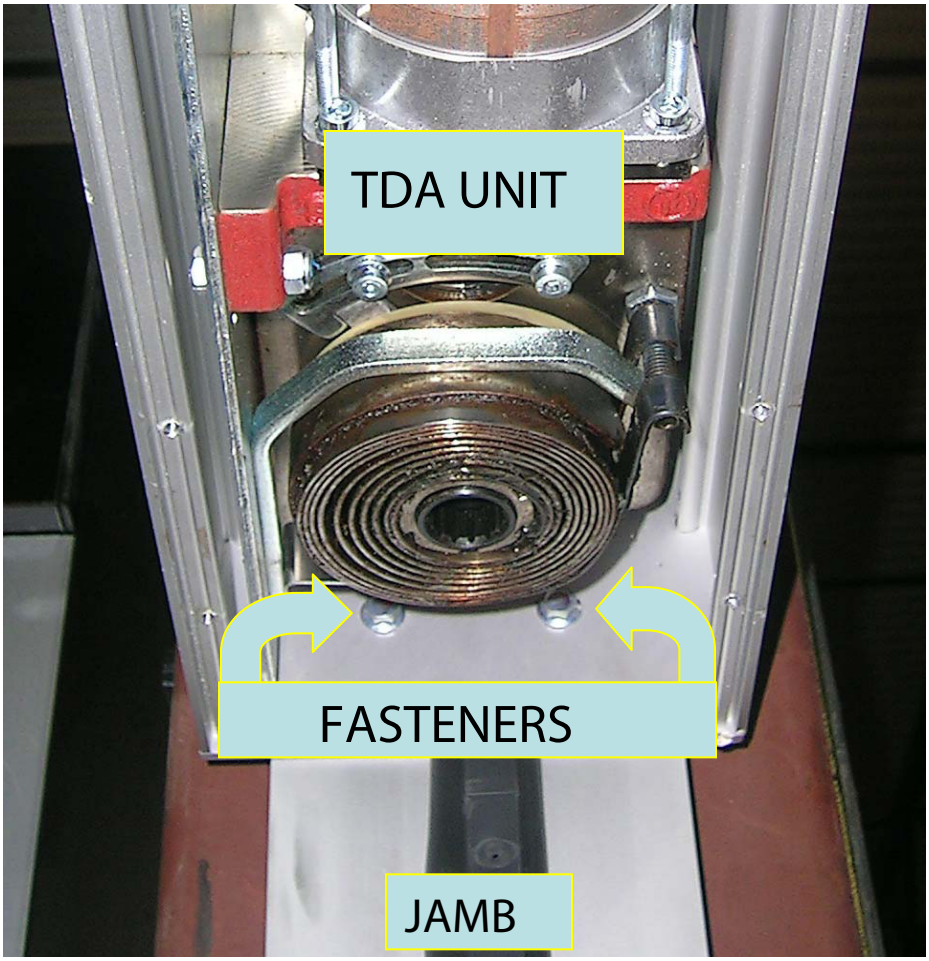
INSWING PARALLEL ARM
DIMENSIONS SAME FOR SIMULTANEOUS PAIR

REVEAL	A
0" – 1 21/32"	25/32"
1 21/32" – 3 5/32"	1 9/16"
3 5/32" – 6 9/32"	2 3/8"

4 Installation 100 series

NOTE: Tormax recommends the use of a water level and and plumb bob to proprley install any door package provided. An improper installation could lead to premature weare of moving parts as well as an unpleasing appeearance and / or service issues for the customer.

1. TDA (Over Head Concealed) Installation
   If the unit was supplied with jambs they should be installed at this time. If the unit was supplied without jambs, then the unit should be secured into the provided location using the appropriate fasteners. 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.



2. DRIVE ARM INSTALLATION

At this point install the drive ar m (PN TID 345026)(Pic 2a) into the splined output of the TDA Motor/Gear box assembly. This step should be completed with no powe r supplied to the TDA.

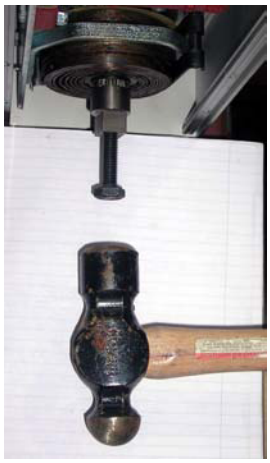
The drive arm should be in serted so that two sides of the square boss run as close to parallel to the header as the splines will allow (Pic. 2b). The location of the drive arm serves mu ltiple purposes, it pre-loads the door and also allows the door to br eak out when equipped to do so.

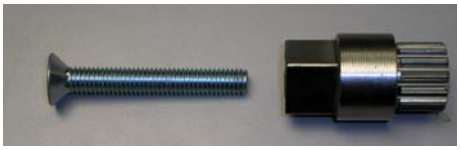
The drive arm is designed to have an interference fit with the splines on the TDA unit and thus should be driven into place. In sert the supplied bolt (PN 140240-16) into the drive arm at least half way (Pic. 2c). Drive the assembly into the TDA (Pic.2d). T he drive arm should be driven until it bottoms. Once installed the drive arm must be secured with the provided screw (M8 x 1.25 x 55 flat head). Insert as shown (Pic. 2e), into the threaded bore in the TDA unit (Pic. 2f). The finished assembly can be seen in (Pic. 2g).

2a 

2b 

2c 

2d 

2e 

2f 

2g 

10

3. INSTALLATION OF BOTT OM GUIDE/ THRESHOLD

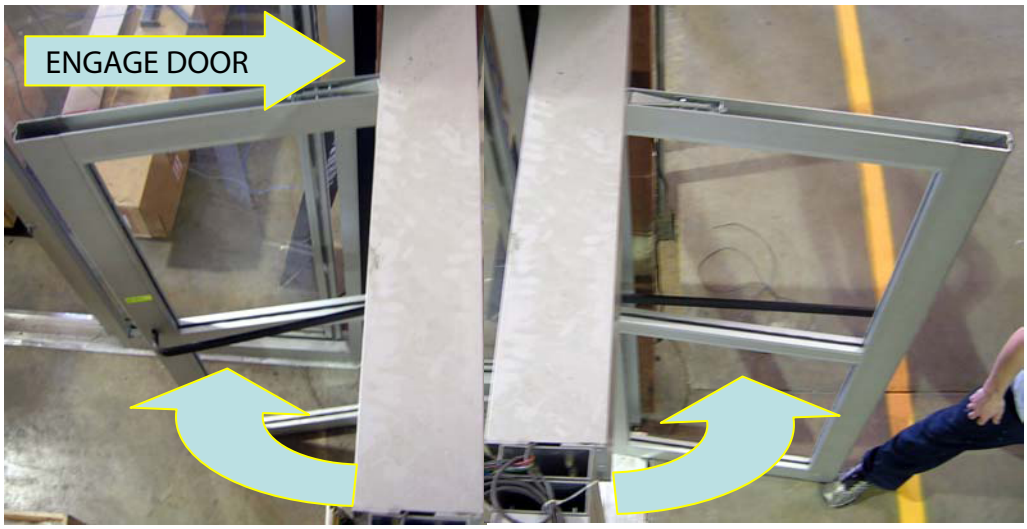
The bottom door pivot should now be installed along with the threshold if required for this installation (Pic 3a). NOTE: The bottom doo r pivot is included in PN STD.AKIS. The bottom door pi vot must be in line with the drive arm previously installed in the TDA. The use of a plumb bob to align the bottom pivot is advised. If installed incorrectly, the door could swing in an elliptical arc, resulting in ad verse door characteristics.

3a

4. DOOR INSTALLATION

Install the door from the side op posite the normal swing path (breakout side) and at approximately 90 degrees to the TDA unit, place the door onto the bottom pivot (Pic 4a & 4b). Line up the drive arm re ceiver with the drive arm mounted to the TDA (Pic. 4c & 4d). NO TE: The drive arm re ceiver is included in PN STD.AKIS. Engage the door with the drive arm and secure it with the supplied cap and bolts (Pic. 4e). Pictures contin ued on next page.

4a



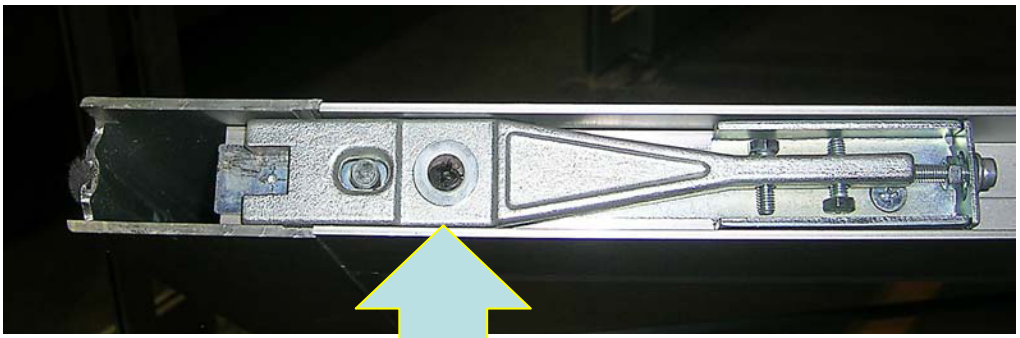
4b

BREAK OUT PATH

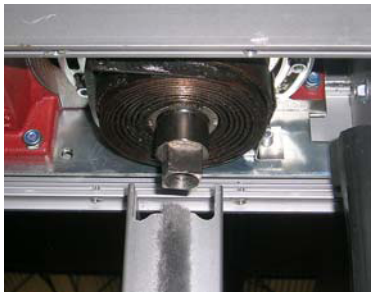
INTENDED SWING PATH

11

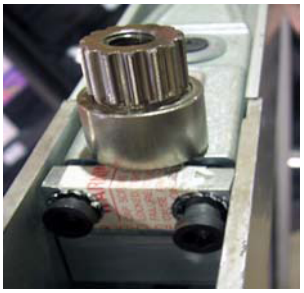
4c



4d



4e



5. BREAK OUT SWITCH

The break out switch (PN STD.PKI) co mes factory installed and programmed for each ap plication. After the door is installed, rotate it to the closed position. The breakout switch can be toggled back and forth to allow the door to bypass it (Pic 5a).

5a

6. TEACH IN AND FINAL ASSEMBLY

The TDA overhead unit is now ready to be taught in. See Teach In instructions at the end of this docu ment. Install inspection covers (PN 140733-01 Clear finish, 140733-02 Drk Bronz e finish) provided and any applicable labels.

For technical questions contact Tormax Technical Service at 888-685-3707 Exts. 123 or 103.

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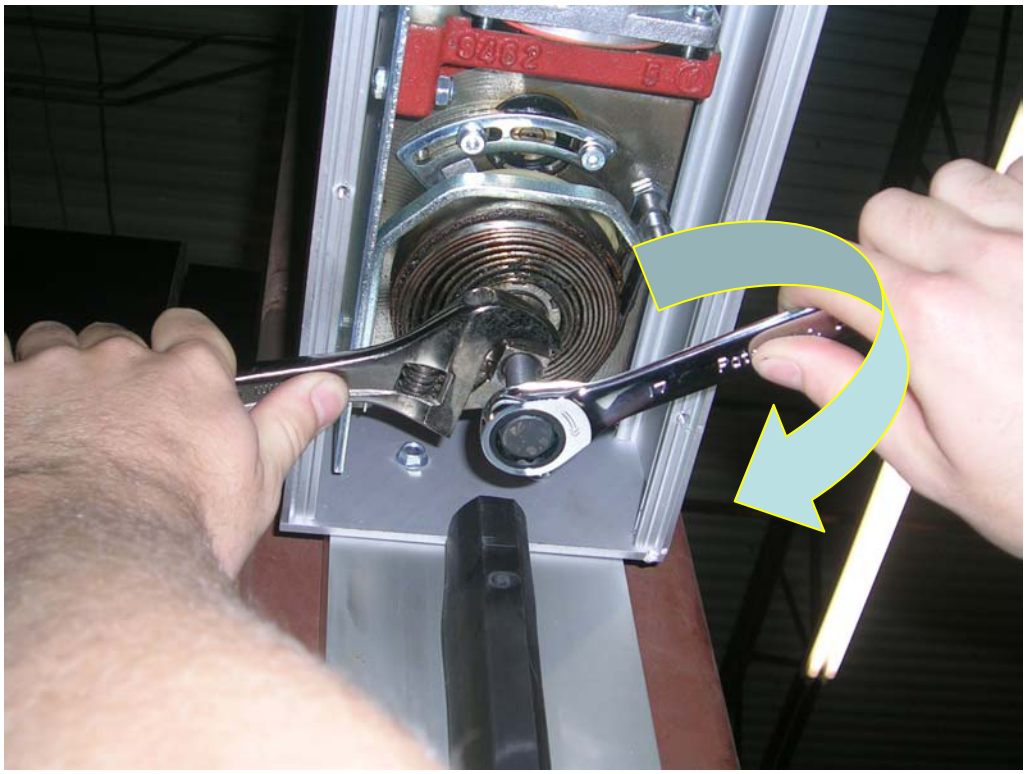
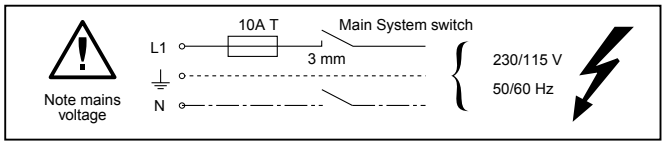
7. DRIVE ARM REMOVAL

In the event the dr ive arm needs to be removed proceed as follows. Lubricate and insert supplied bolt into drive arm. Hold drive arm wh ile tightening the bolt. Once the bolt bottoms against the TDA it will b egin to pull the drive arm out.



13

5 Electrical Connections



Mains Connection

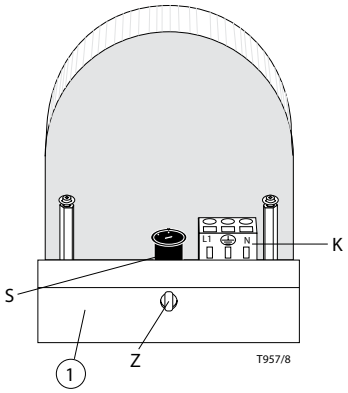
Prior to beginning any of the following work, ensure that the mains supply is turned off.

The mains cable should be routed along the side containing the power supply if possible.

The connections must be of type “PVC-cable H05VV-F” or “Rubber hose cable H05RR-F” or material approved by local code.

Remove burrs from all feed-through holes for mains connections.

- Remove the mains supply cover (1).
- Connect the mains cable to terminal (K) according to the figure.
- Route mains cable either through the prepared holes in the side part or through the openings in the mounting plate.
- Use only cable glands made from plastic material. Metallic bushings are to be grounded..
- Secure mains cable with a cable strap on the cable relief (Z).



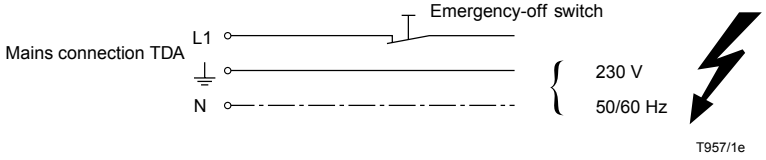
- Check the correct setting of the voltage selector (S) and replace the mains supply cover (1).
- When all work is complete and it has been verified that nobody is endangered by moving parts, the system can be connected to mains supply.

Cable Routing

The two cable straps fastened to the motor casing are used for the routing of external cables.

- Remove both cable straps.
- Install emergency-off switch according to the contract order and route the mains connection via the emergency-off switch.

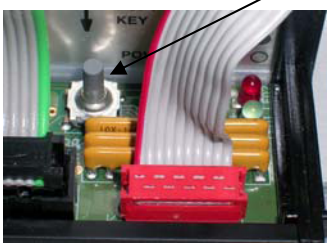
Emergency-Off Switch



TDA Single / Master "Teach-In"

If required, the following basic adjustments of the door can be changed by the "Teach-In" function:

- Opening speed
- Opening angle
- Hold-open time (time delay)



Do not hold soft key down or programming will be deleted!

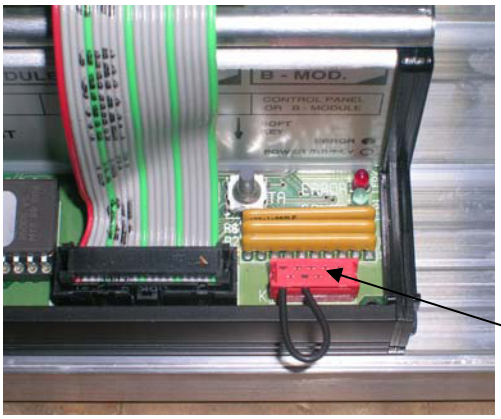
"Teach-In" Procedure

1. Locate the small gray button (Soft-Key) on the TCP-52 control next to the wide ribbon cable

   NOTE: If the following steps take longer than 30 seconds each (except the adjustment for the hold-open time), the control system will return to the previously active operating mode (e.g. OFF, AUTO, HOLD-OPEN). The door should be in the HOLD-OPEN position before proceeding to the next steps!

2. Select operating mode OFF.
3. Press and release the gray button.
4. The control will "beep" and the LED's on the ON/OFF/HOLD-OPEN panel will flash up and down. This signals that the Teach-In mode is activated.
5. The 2nd "beep" indicates the door is closed and the encoder is at the zero (0) degree position.
6. Manually open the door to establish the opening speed and opening angle. Hold the door in this position until the control "beeps" (3rd beep).
7. After the 3rd "beep", continue holding the door open to set the Hold-Open time.
8. Release the door after the desired Hold-Open time. When the door begins closing, the control will "beep" a 4th time signaling that the Hold-Open time has been set.
9. The control will "beep" a 5th time when the door is in the fully closed position.
10. Press and release the gray button. The control will "beep" a 6th time acknowledging the settings.

NOTE: After the door resets, it will open fully to the HOLD-OPEN position.



Do not hold soft key down or programming will be deleted!

PN: 408468 (Jumper Bee)

TDA Slave "Teach-In"

If required, the following basic adjustments of the door can be changed by the "Teach-In" function:

- **Opening speed**
- **Opening angle**
- **Hold-open time (time delay)**

Slave "Teach-In" Procedure

1. **Unplug the power to the Slave control by disconnecting the transformer cable.**
2. **Plug the red Jumper Bee plug into the red socket on the Slave control next to the wide ribbon cable as shown above. (This plug will be installed from the factory.)**
3. **Power the Slave control by reconnecting the transformer cable.**
4. **Put the function control panel on the Master in the "Automatic" position.**
5. **Locate the small gray button (Soft-Key) on the TCP-52 control next to the wide ribbon cable.**

   <u>NOTE</u>: If the following steps take longer than 30 seconds each (except the adjustment for the hold-open time), the control system will return to the previously active operating mode (e.g. OFF, AUTO, HOLD-OPEN).

6. **Press and release the gray button. This is the 1st "beep" for the Teach-In process.**
7. **The 2nd "beep" indicates the door is closed and the encoder is at the zero (0) degree position.**
8. **Manually open the door to establish the opening speed and opening angle. Hold the door in this position until the control "beeps" (3rd beep).**
9. **After the 3rd "beep", continue holding the door open to set the Hold-Open time.**
10. **Release the door after the desired Hold-Open time. When the door begins closing, the control will "beep" a 4th time signaling that the Hold-Open time has been set.**
11. **The control will "beep" a 5th time when the door is in the fully closed position.**
12. **Press and release the gray button. The control will "beep" a 6th time acknowledging the settings. The door will slightly move while the control resets.**
13. **Remove the red Jumper Bee plug. <u>Do not</u> throw this plug away!!! It may be needed to make future adjustments.**

7 Sensor wiring and input / output functions

Terminal Input / Output Functions

Activation - Signals the operator to open. (NO input)

Reactivation - Reopens door while closing input is inhibited when the door reaches the full closed position. (NO input)

Stall - When door is opening and input is active the door will stop in the position it is in. Input is inhibited when door reaches 75* of the full open 90* (NO input)

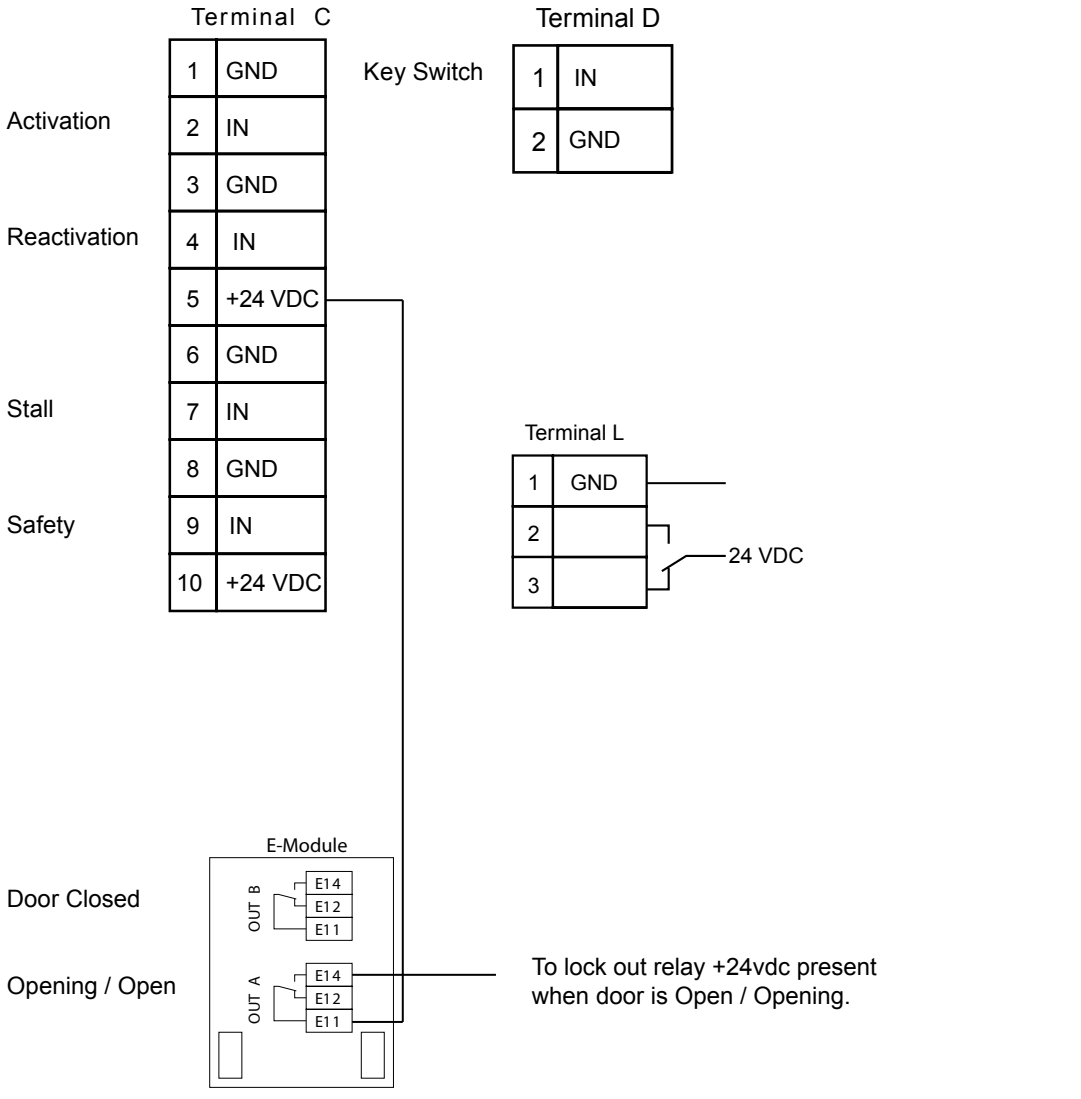
Safety - Keeps a open door opena nd a closed door from opening. (NO input)

Key Switch - Signals the door to open even if in the Off Mode. (NO input)

E Module - Dry relay contact active when door is in programmed state. (NO or NC avaliable)

.75 A max output from 24vdc output, use of 24vac trans is strongly recommended

Factory Wiring for TDA 200 Single



Terminal Input / Output Functions

Activation - Signals the operator to open. (NO input)

Reactivation - Reopens door while closing input is inhibited when the door reaches the full closed position. (NO input)

Stall - When door is opening and input is active the door will stop in the position it is in. Input is inhibited when door reaches 75* of the full open 90* (NO input)

Safety - Keeps a open door opena nd a closed door from opening. (NO input)

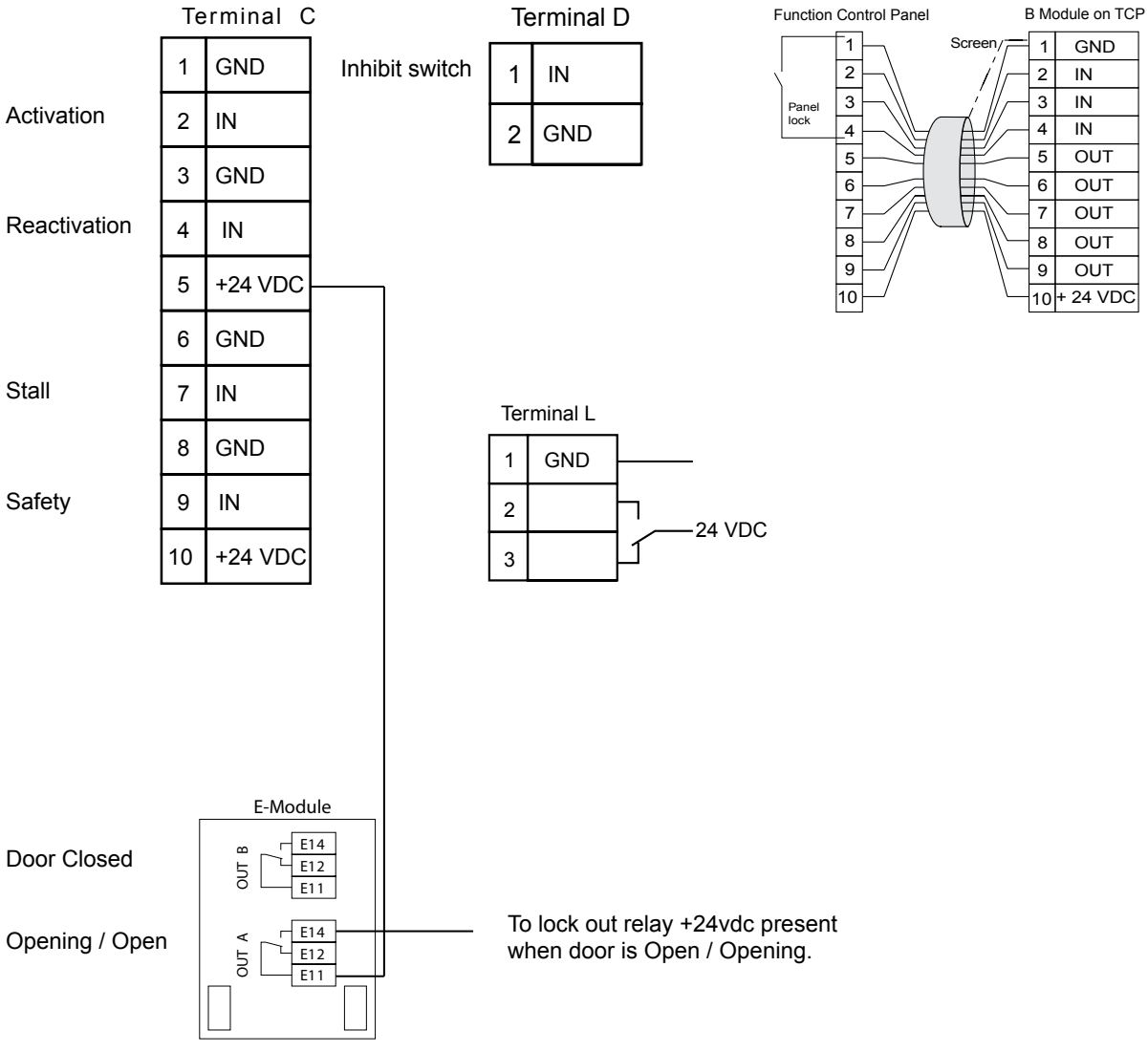
Key Switch - Signals the door to open even if in the Off Mode. (NO input)

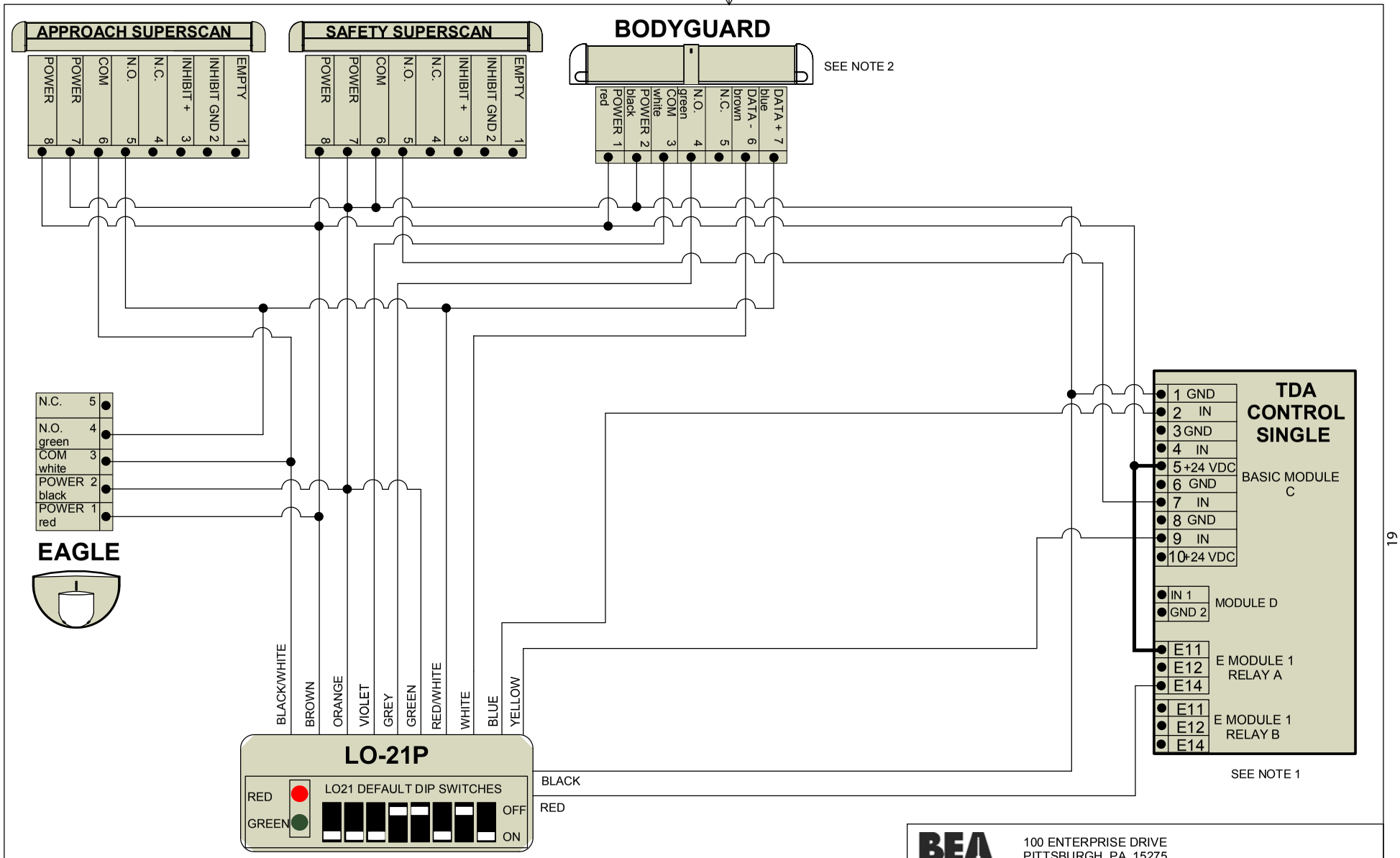
E Module - Dry relay contact active when door is in programmed state. (NO or NC avaliable)

Inhibit Switch - Prevents door from operating also called break out switch. (NO input)

.75 A max output from 24vdc output, use of 24vac trans is strongly recommended

Factory Wiring for TDA 100 Single





NOTES: 1.) SEE TORMAX INSTALLATION MANUAL FOR ASSISTANCE.
2.) ENSURE TO SET THE BODYGUARD RELAY TO VALUE 2. N.C.
3.) SEE LO21P USER GUIDE FOR ASSISTANCE

IF AFTER TROUBLESHOOTING A PROBLEM, A SATISFACTORY SOLUTION CANNOT BE ACHIEVED, PLEASE CALL B.E.A., INC. FOR FURTHER ASSISTANCE DURING EASTERN STANDARD TIME AT 1-800-523-2462 FROM 8AM - 5PM. FOR AFTER-HOURS, CALL EAST COAST: 1-866-836-1863 OR 1-800-407-4545 / MID-WEST: 1-888-308-8843 / WEST COAST: 1-888-419-2564. DO NOT LEAVE ANY PROBLEM UNRESOLVED. IF YOU MUST WAIT FOR THE FOLLOWING WORKDAY TO CALL B.E.A., LEAVE THE DOOR INOPERABLE UNTIL SATISFACTORY REPAIRS CAN BE MADE. NEVER SACRIFICE THE SAFE OPERATION OF THE AUTOMATIC DOOR OR GATE FOR AN INCOMPLETE SOLUTION.WEB: WWW.BEASENSORS.COM

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A HALMA GROUP COMPANY
100 ENTERPRISE DRIVE
PITTSBURGH, PA 15275
PHONE: (412) 249-4100
FAX: (412) 249-4101
EMAIL: www.beasensors.com

TITLE: TORMAX TDA SINGLE DOOR WITH PARALLAX 1 SYSTEM (LO-21P)

SIZE:	DRAWN BY:	REV BY:	PART NO:
A	JED		80.0308.00
	SCALE: NONE	DATE: 21 JULY 2009	SHEET 1 OF 1

Terminal Input / Output Functions

Activation - Signals the operator to open. (NO input)

Reactivation - Reopens door while closing input is inhibited when the door reaches the full closed position. (NO input)

Stall - When door is opening and input is active the door will stop in the position it is in. Input is inhibited when door reaches 75* of the full open 90* (NO input)

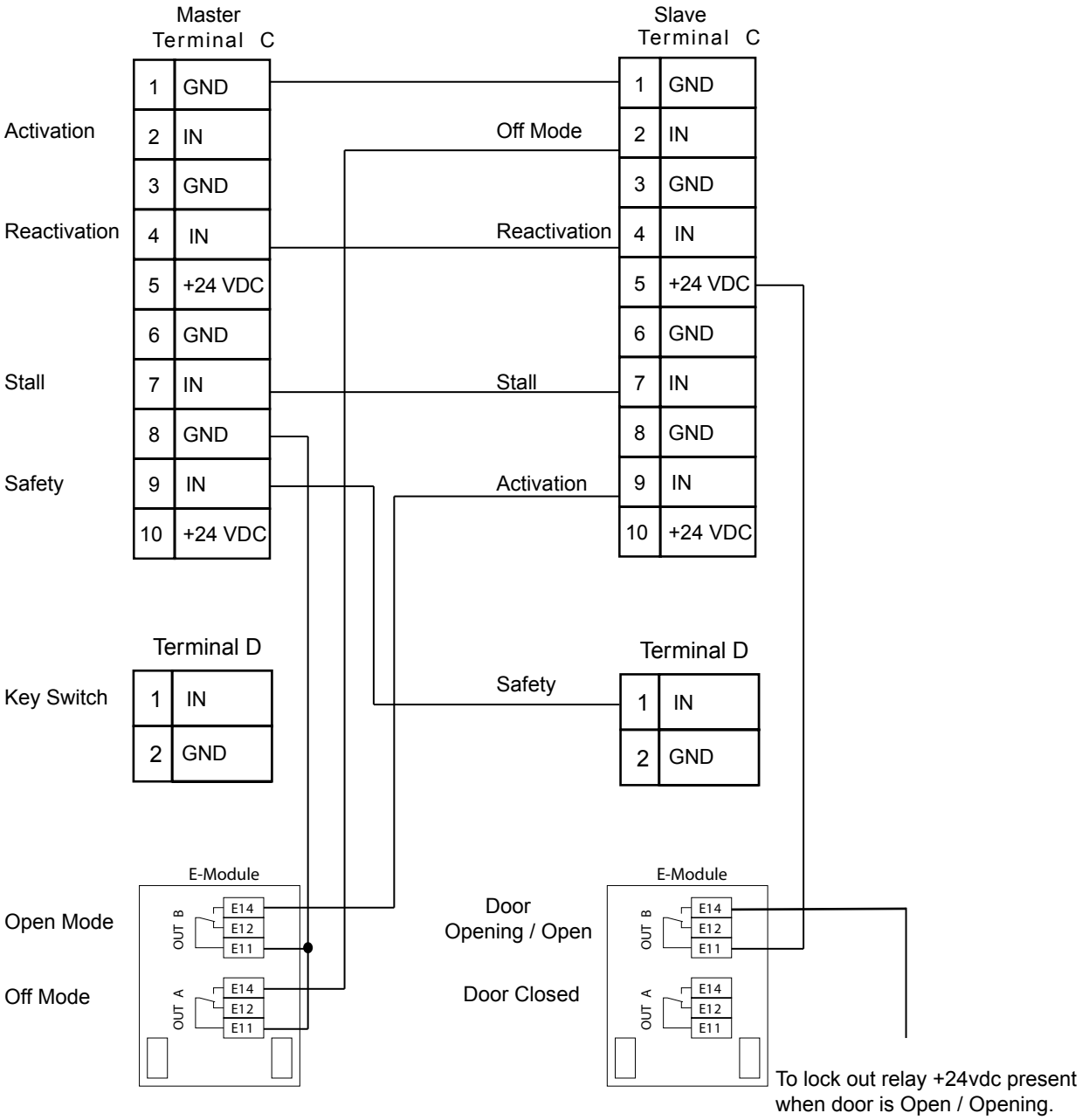
Safety - Keeps a open door opena nd a closed door from opening. (NO input)

Key Switch - Signals the door to open even if in the Off Mode. (NO input)

E Module - Dry relay contact active when door is in programmed state. (NO or NC avaliable)

.75 A max output from 24vdc output, use of 24vac trans is strongly recommended

Factory Wiring for TDA 200 Pair



Terminal Input / Output Functions

Activation - Signals the operator to open. (NO input)

Reactivation - Reopens door while closing input is inhibited when the door reaches the full closed position. (NO input)

Stall - When door is opening and input is active the door will stop in the position it is in. Input is inhibited when door reaches 75* of the full open 90* (NO input)

Safety - Keeps a open door opena nd a closed door from opening. (NO input)

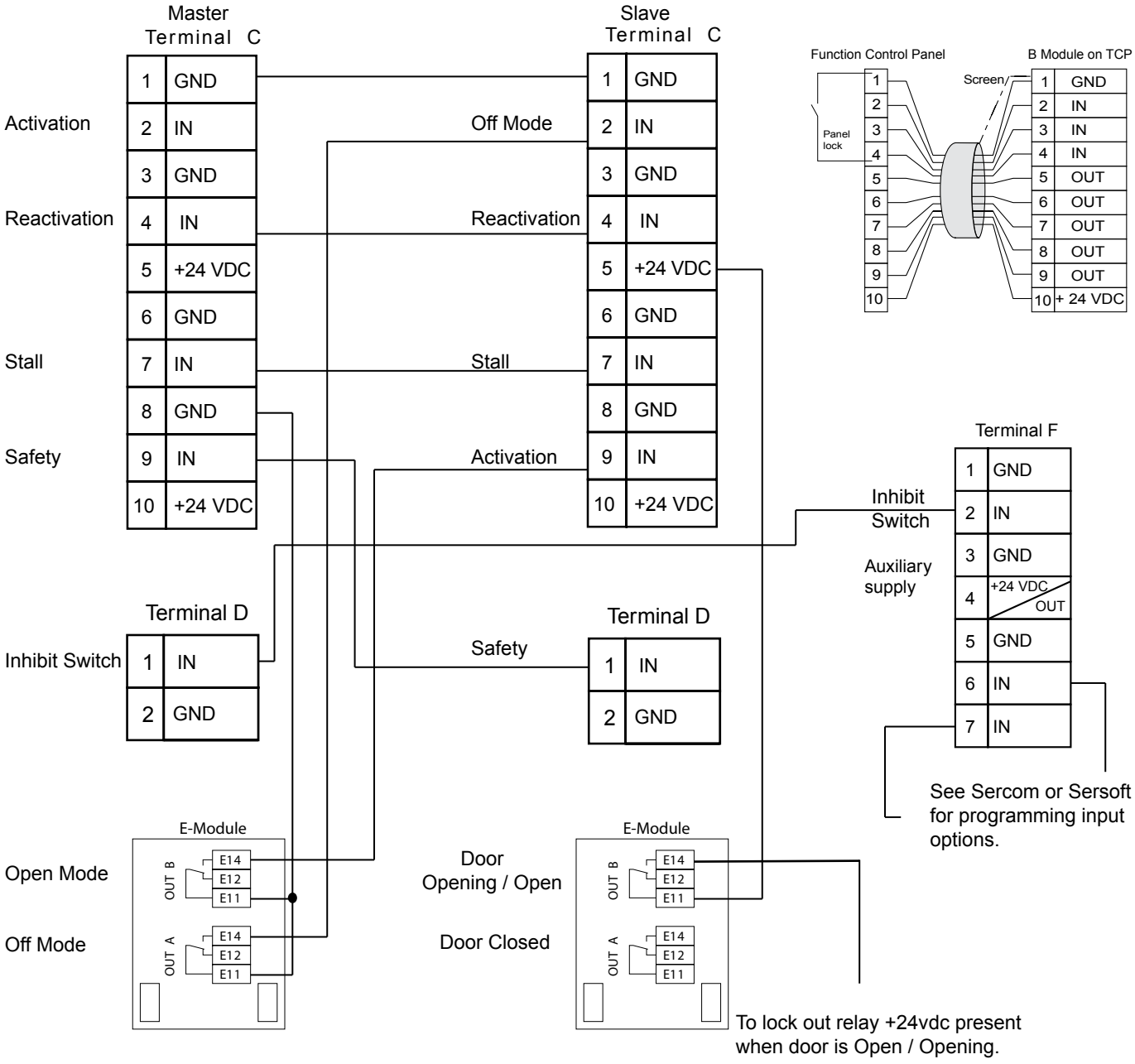
Key Switch - Signals the door to open even if in the Off Mode. (NO input)

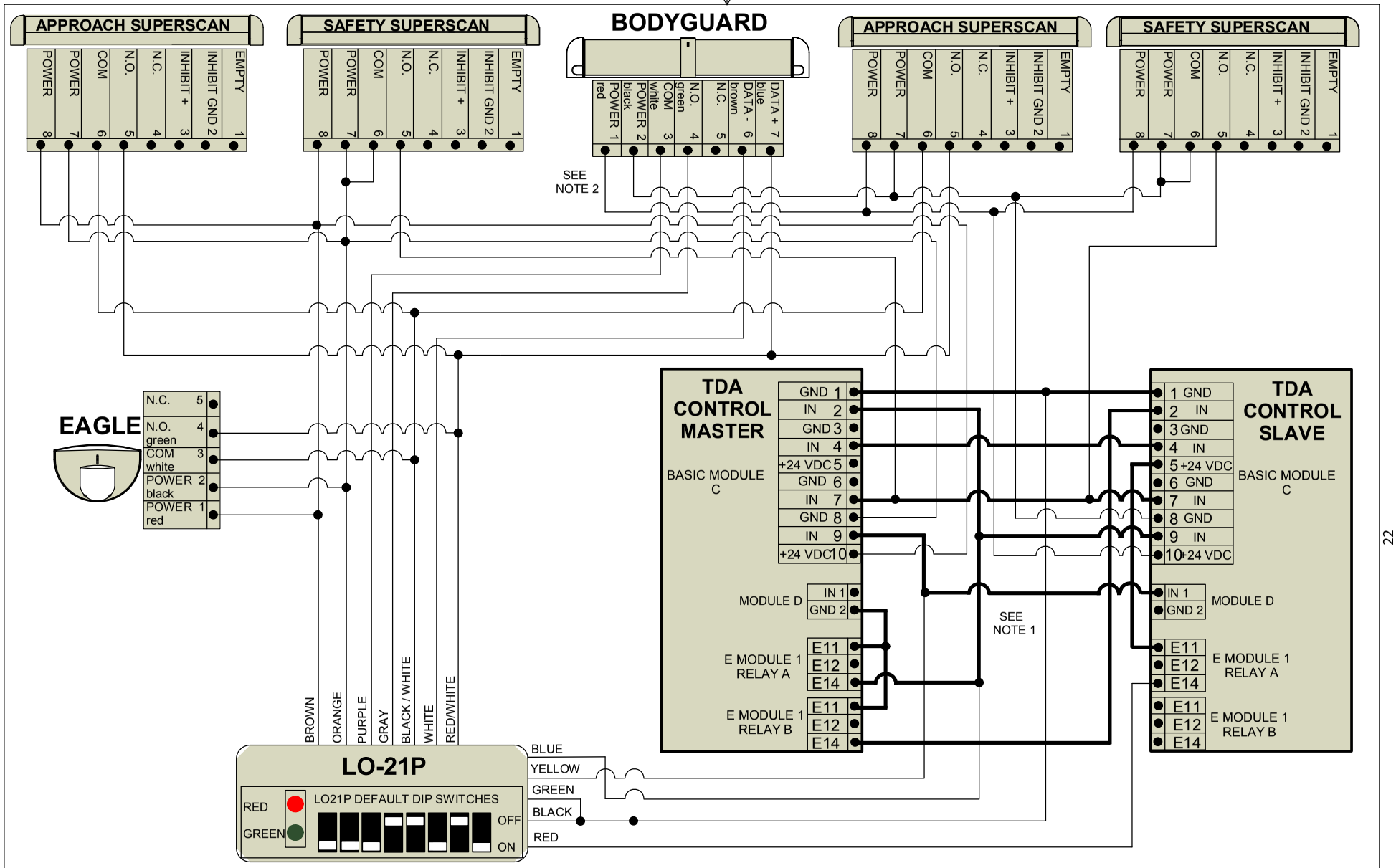
E Module - Dry relay contact active when door is in programmed state. (NO or NC avaliable)

Inhibit Switch - Prevents door from operating aslo called the break out switch. (NO input)

.75 A max output from 24vdc output, use of 24vac trans is strongly recommended

Factory Wiring for TDA 100 Pair





NOTES: 1. CONNECTIONS SHOWN IN BOLD ARE THE SYNCH LINES REQUIRED BY TORMAX FOR A SIMULTANEOUS PAIR.
SEE TORMAX INSTALLATION MANUAL FOR ASSISTANCE.
2. SET BODY GUARD OUTPUT CONFIGURATION TO "2".

IF AFTER TROUBLESHOOTING A PROBLEM, A SATISFACTORY SOLUTION CANNOT BE ACHIEVED, PLEASE CALL B.E.A., INC. FOR FURTHER ASSISTANCE DURING EASTERN STANDARD TIME AT 1-800-523-2462 FROM 8AM - 5PM. FOR AFTER-HOURS, CALL EAST COAST: 1-866-836-1863 OR 1-800-407-4545 / MID-WEST: 1-888-308-8843 / WEST COAST: 1-888-419-2564. DO NOT LEAVE ANY PROBLEM UNRESOLVED. IF YOU MUST WAIT FOR THE FOLLOWING WORKDAY TO CALL B.E.A., LEAVE THE DOOR INOPERABLE UNTIL SATISFACTORY REPAIRS CAN BE MADE. NEVER SACRIFICE THE SAFE OPERATION OF THE AUTOMATIC DOOR OR GATE FOR AN INCOMPLETE SOLUTION.WEB: WWW.BEASENSORS.COM

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TITLE: TORMAX TDA SIMULTANEOUS PAIR WITH PARALLAX 2 SYSTEM LO-21P

SIZE:	DRAWN BY:	REV BY:	PART NO:
A	WJR		80.0305.01
	SCALE: NONE	DATE: 04 DEC 2009	SHEET 1 OF 1

Programming for TDA Single COMMERCIAL

TDASICOM		
DIRCOM Codes		**In / Output**
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,37	Door opening or open	E-module #1 relay A
T,80,W,455	Over reading of safety swing side	
T, 71, W, 0	Fire mode off	
T, 70, W, 0	Push and Go off	
T,100,W,1	3-position control panel	
S,0	Software reset	
Options		
T,50,W,50	1/2 second lock delay	
T,70,W,10	Push and Go on	Standard setting
T,100,W,2	5-function control panel	

TDA OHC Single COMMERCIAL

*** Press UP BUTTON for 4 beeps before programming ***

TDAOHCLE		
DIRCOM Codes		**In / Output**
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,20,7,W,14	Reset after panic (OHC breakout)	D1
P,30,14,W,0	Active level (active when closed)	D1
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,37	Door opening or open	E-module #1 relay A
P,40,1,W,16	Door closed	E-module #1 relay B
T,100,W,2	5-Function control panel	
T,80,W,455	Over reading of safety swing side	
T,70,W,0	Push & Go	Off
T,87,W,0	Internal reversing off closing	
T,86,W,0	Internal reversing off opening	
T,71,W,0	Fire mode off	

TDA OHC LE Single COMMERCIAL

*** Press UP BUTTON for 4 beeps before programming ***

TDAOHCLE		
DIRCOM Codes		**In / Output**
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,20,7,W,14	Reset after panic (OHC breakout)	D1
P,30,14,W,0	Active level (active when closed)	D1
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,37	Door opening or open	E-module #1 relay A
P,40,1,W,16	Door closed	E-module #1 relay B
S,32,W,1	Reduced opening force	Low Energy application
T,100,W,2	5-Function control panel	
T,80,W,455	Over reading of safety swing side	
T,70,W,0	Push & Go	Off
T,87,W,0	Internal reversing off closing	
T,86,W,0	Internal reversing off opening	
T,71,W,0	Fire mode off	

Programming for TDA COMMERCIAL Pair

DIRCOM Codes		**In / Output**
Master		
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,29	Operating Mode – Open	E module #1 relay A
P,40,1,W,25	Operating Mode - Off	E module #1 relay B
S,30,W,2	Operation mode auto	
T,70,W,0	Push and go off	
T,80,W,455	Over reading of safety swing side	
T,87,W,0	Internal Closing Reversing – Off	
T,71,W,0	Fire mode off	
Slave		
P,20,3,W,18	Mode off	C2
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,4	Open impulse	C9
P,20,7,W,6	Safety Both Sides	D1
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	D1
P,40,0,W,37	Door opening or open	E module #1 relay A
P,40,1,W,16	Door closed (for interlocking)	E module #1 relay B
T,110,W,1	Operation mode return	
T,70,W,0	Push and go off	
T,80,W,455	Over read of safety swing side	
T,87,W,0	Internal Closing Reversing – Off	
P,20,2,W,32	Operation mode auto	B4
P,30,32,W,1	Active level (active when open)	B4
T,71,W,0	Fire mode off	

Prog. for TDA OHC COMMERCIAL Pair

*** Press BLUE UP BUTTON for 4 beeps before programming***

DIRCOM Codes		**In / Output**
Master		
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,29	Operating Mode – Open	E module #1 relay A
P,40,1,W,25	Operating Mode - Off	E module #1 relay B
T,71,W,0	Fire mode off	
T,70,W,0	Push and go off	
T,80,W,455	Over reading of safety swing side	
T,87,W,0	Internal Reversing – Off closing	
T,100,W,2	5-Function control panel	
T,86,W,0	Internal reversing – Off opening	
P,20,7,W,14	Reset after panic (OHC breakout)	D1
P,30,14,W,0	Reset after panic (active when closed)	D1
Slave		
P,20,3,W,18	Mode off	C2
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,4	Open impulse	C9
P,20,7,W,6	Safety Both Sides	D1
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	D1
P,40,0,W,37	Door opening or open	E module #1 relay A
P,40,1,W,16	Door closed (for interlocking)	E module #1 relay B
T,110,W,1	Operation mode return	
T,70,W,0	Push and go off	
T,80,W,455	Over read of safety swing side	
T,87,W,0	Internal Reversing – Off closing	
P,20,2,W,32	Operation mode auto	B4
P,30,32,W,1	Active level (active when open)	B4
T,100,W,2	5-Function control panel	
T,86,W,0	Internal reversing-Off opening	
P,20,8,W,14	Reset after panic (OHC breakout)	F2
P,30,14,W,0	Reset after panic (active when closed)	F2
T,71,W,0	Fire mode off	

10-29-09

Prog. for TDA OHC COMMERCIAL Pair Low Energy

*** Press BLUE UP BUTTON for 4 beeps before programming***

DIRCOM Codes		**In / Output**
Master		
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,29	Operating Mode – Open	E module #1 relay A
P,40,1,W,25	Operating Mode – Off	E module #1 relay B
S,32,W,1	Reduced opening force (low energy)	
T,70,W,0	Push and go	Off
T,80,W,455	Over reading of safety swing side	
T,87,W,0	Internal Reversing – Off closing	
T,100,W,2	5-Function control panel	
T,71,W,0	Fire mode off	
T,86,W,0	Internal reversing- Off opening	
P,20,7,W,13	Inhibit switch (OHC breakout)	D1
P,30,13,W,0	Inhibit switch (active when closed)	D1
Slave		
P,20,3,W,18	Mode off	C2
P,20,4,W20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,4	Open impulse	C9
P,20,7,W,6	Safety Both Sides	D1
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	D1
P,40,0,W,37	Door opening or open	E module #1 relay A
P,40,1,W,16	Door closed (for interlocking)	E module #1 relay B
S,32,W,1	Reduced opening force (low energy)	
T,110,W,1	Operation mode return	
T,70,W,0	Push and go	Off
T,80,W,455	Over read of safety swing side	
T,87,W,0	Internal Reversing – Off closing	
P,20,2,W,32	Operation mode auto	B4
P,30,32,W,1	Active level (active when open)	B4
T,100,W,2	5-Function control panel	
P,20,8,W,13	Inhibit switch (OHC breakout)	F2
P,30,13,W,0	Inhibit switch (active when closed)	F2
T,86,W,0	Internal reversing – Off opening	
T,71,W,0	Fire mode off	

Programming for Double Egress
REQUIRES 2 OFF/AUTO/HO SWITCHES

MASTER		
DIRCOM Codes		**In / Output**
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,37	Door opening or open	E-module #1 relay A
T,80,W,455	Over reading of safety swing side	
T,71,W,0	Fire mode off	
T,70,W,0	Push & Go off	
T,100,W,1	3-position control panel	
S,0	Software reset	
MASTER		
DIRCOM Codes		**In / Output**
P,20,4,W,20	Safety approach side	C4
P,20,5,W,21	Safety swing side	C7
P,20,6,W,6	Safety both sides	C9
P,30,20,W,0	Active level (active when closed)	C4
P,30,21,W,0	Active level (active when closed)	C7
P,30,9,W,0	Active level (active when closed)	C9
P,40,0,W,37	Door opening or open	E-module #1 relay A
T,80,W,455	Over reading of safety swing side	
T,71,W,0	Fire mode off	
T,70,W,0	Push & Go off	
T,100,W,1	3-position control panel	
S,0	Software reset	

7 Additional DirCom Programing

On the following pages, you find all TDA/TDM DirCom codes and corresponding explanations

7.1 List of the DirCom Codes

Units

Explanations

ms = Milliseconds

SE = System units (abstract term)

l/min = Revolutions per minute

EF = edge of encoder pulse

Applicable from software version A6299.

Motor-Driven Opening Motion

Delay time to open:

Code Input	Minimum	Standard	Maximum	Unit
T,50,W,VALUE,	0	40	5000	ms

– Time that elapses from the activation of the E-opener to the start of the motor. This enables a reliable unlocking of the E-opener; high value = long delay time.

Opening acceleration:

Code Input	Minimum	Standard	Maximum	Unit
T,20,W,VALUE,	2	8	25	SE

– Acceleration value; high value = high acceleration rate.

Opening speed:

Code Input	Minimum	Standard	Maximum	Unit
T,62,W,VALUE,	200	800	1200	l/min

– Determines the max. speed of the motor and thus the max. opening velocity; high value = high speed.

Opening angle:

Code Input	Minimum	Standard	Maximum	Unit
T,60,W,VALUE,	500	1000	5000	EF

– Determines the opening angle of the door in terms of encoder pulses; high value = large opening angle.

Reduced opening angle in stepping operation after input function 16

Code Input	Minimum	Standard	Maximum	Unit
T,600,W,VALUE,	200	300	5000	EF

– Special function: in connection with input function 16, a reduced opening width can be defined as a stepping function; high value = large opening angle.

Opening damping:

Code Input	Minimum	Standard	Maximum	Unit
T,21,W,VALUE,	2	8	25	SE

– Defines the damping behaviour during an opening motion; high value = reduced damping.

Homing-in speed:

Code Input	Minimum	Standard	Maximum	Unit
T,25,W,VALUE,	50	100	300	l/min

– Defines the speed with which the door drives into the end position after the damping phase; high value = high speed.

Tolerance of programmed open position:

Code Input	Minimum	Standard	Maximum	Unit
T,26,W,VALUE,	20	30	300	EF

– Defines how exactly the door needs to drive to the programmed position; high value = large admissible deviation.

Reduced opening force:

Code Input	Minimum	Standard	Maximum	Unit
S,32,W,VALUE,	0	0	1	SE

– With this command, a reduced opening force can be set. This function is not suitable for the roller lever.

For fire protection applications, the value is to be set to 1.

Manual Opening Motion

Beginning of damping:

Code Input	Minimum	Standard	Maximum	Unit
T,63,W,VALUE,	50	250	2000	EF

– Defines the beginning of damping for a manual opening motion. It is also effective in operating mode OFF. High value = earlier beginning of damping.

Maintained Opening

Retaining force in the open position:

Code Input	Minimum	Maximum	Unit
T,64,W,VALUE,	13	20	SE

– Defines, how strongly the door is held in the open position (e.g. against wind load); high values = high retaining force. Note: high values entail an increased heating up of the control system.

Hold-open time settings:

Code Input	Minimum	Standard	Maximum	Unit
T,61,xx,W,VALUE,	1	20	1200	100 ms

xx = 1: for key switches; xx = 3: for activators outside IGA; x x
= 2: for activators inside IGI; xx = 4: for “Push-and-Go”.
In “Teach-In” mode, all time settings are set to the same value.

– Define how long the door remains open. Per activator, different time settings can be defined; high values = long hold-open durations.

Closing Motion

Closing speed:

Code Input	Minimum	Standard	Maximum	Unit
T,41,W,VALUE,	5	14	25	SE

– Limits the max. motor speed and thereby determines the max. closing speed; high value = high speed.

Beginning of damping in closing direction:

Code Input	Minimum	Standard	Maximum	Unit
T,42,W,VALUE,	10	300	2000	EF

– Defines the position where damping begins in closing direction; high value = At the point of beginning of damping, the door is still wide open.

Closing damping:

Code Input	Minimum	Standard	Maximum	Unit
T,40,W,VALUE,	10	118	200	SE

– Defines the hardness of damping or the speed in the damping range; high value = high damping or low speed.

Motor supported closing action:

Code Input	Minimum	Standard	Maximum	Unit
T,90,W,VALUE,	0	0	1	SE

Value 0: Spring-operated closing; Value 1: Motor supported closing action from value T 88. (T88 < T86)

– Standard (value = 0): switched inactive, no effect;
If switched active (value = 1), the door at standstill is pressed into the end position by motor within the range defined under “Beginning of the motor supported closing action” and for closed position of door.

Note: This adjustment can create dangerous conditions. Therefore, appropriate safety precautions are required.

Beginning of the motor supported closing action:

Code Input	Minimum	Standard	Maximum	Unit
T,88,W,VALUE,	0	100	2000	EF

– Defines the activation range for the motor supported closing action; high value = large range.

Maintained Closing

Motor supported maintained closing:

Code Input	Minimum	Standard	Maximum	Unit
T,91,W,VALUE,	0	0	1	SE

– Standard (value = 0) switched inactive, no effect.
If switched active (value = 1), the door in closed position is additionally kept closed by motor.

Internal and External Safety Devices

Deactivate external safety devices during opening:

Code Input	Minimum	Standard	Maximum	Unit
T,80,W,VALUE,	0	60	3000	EF

– Defines a range before the OPEN position of the door in which external safety devices are switched inactive; high value = large inactive range, e.g. disabling the sensor strip when opening against a wall.

Deactivate external safety device during closing:

Code Input	Minimum	Standard	Maximum	Unit
T,81,W,VALUE,	0	60	3000	EF

– Defines a range before the CLOSED position of the door in which external safety devices are switched inactive; high value = large inactive range.

Internal reversing during opening:

Code Input	Minimum	Standard	Maximum	Unit
T,86,W,VALUE,	0	100	500	EF

– Defines a range from the CLOSED position of the door in opening direction in which internal reversing is not active in both directions; high value = large inactive range. Reversing is switched off if value equal 0.

Internal reversing during closing:

Code Input	Minimum	Standard	Maximum	Unit
T,87,W,VALUE,	0	100	500	EF

– Defines a range from the OPEN position of the door in closing direction in which internal reversing is not active in either direction; high value = large inactive range. Reversing is switched off if value equal 0.

Special Impulses/Panel

Push-and-Go:

Code Input	Minimum	Standard	Maximum	Unit
T,70,W,VALUE,	0	10	100	EF

– If switched active (value > 0) and with standard settings S,21,W,0, the motor takes over the manually initiated opening motion starting from the entered value only when a reduction of the manual opening speed occurs; high value = large manual range.
If switched active (value > 0) and with parameter S,21,W,4, the motor takes over the manually initiated opening motion immediately starting from the entered value; high value = large manual range

Note: In applications where the doors are opened manually with high dynamics, this setting is being felt as unpleasant. Therefore, it is recommended to apply this setting only in old age and nursing homes.

Function change key switch signal:

Code Input	Minimum	Standard	Maximum	Unit
P,190,4,W,VALUE,	0	1	1	

– With standard setting (value = 1), the input command “close door” (P,20,n,W,37) is only carried out when the key switch is inactive. With the setting value = 0, the input command “close door” (P,20,n,W,37) is carried out even if the key switch is active.

Activation of 3-position or 5-position panel:

Code Input	Minimum	Standard	Maximum	Unit
T,100,W,VALUE,	1	1	2	EF

– Defines whether the integrated 3-position (Value 1) or the external 5-position panel (value 2) is used.

Change of Operating Mode

Operating mode after mains failure:

Code Input	Minimum	Standard	Maximum	Unit
S,31,W,VALUE,	0	0	1	

– Defines the behaviour of the control system after mains failure or power interruption, by factory default (value =0), the operating mode prior to mains failure is maintained. If the value is set to 1, operating mode OFF is selected after each supply disruption or reset.

Operating mode after input function 30 or mains failure:

Code Input	Minimum	Standard	Maximum	Unit
S,22,W,VALUE,	0	0	2	

– Defines the operating mode which is activated after input function 30 is applied or a mains failure occurred. Value 0: No modification; Value 1: Operating mode OFF; Value 2: Operating mode AUTO.

For fire protection applications, the value is to be set to 1.

Operating mode return:

Code Input	Minimum	Standard	Maximum	Unit
T,110,W,VALUE,	0	0	1	EF

– Defines the behaviour of the control system if an input signal is removed that entailed a mode change. By factory default, the original operating mode is not restored (value =0); if the value = 1 is programmed, the original operating mode is recalled.

Operating mode selection:

Code Input	Minimum	Standard	Maximum	Unit
S,30,W,VALUE,	1	1	5	

– Permits to set the desired operating mode via the interface. Value 1: OFF; Value 2: AUTO; Value 3: cannot be selected; Value 4: EXIT (only 5-position panel); Value 5: OPEN.

Reset

Factory reset through SERCOM:

Code Input	Minimum	Standard	Maximum	Unit
P,0,W,T,				

– Resets all parameters to the factory settings. All prior programming is deleted.

Factory reset by soft key:

– Press the grey key on the control system printed circuit board until 5 short tones can be heard.
Resets all parameters to the factory settings. All prior programming is deleted.

Software reset through SERCOM:

Code Input	Minimum	Standard	Maximum	Unit
S,				

Software reset from the panel,
Press panel key UP until 3 short tones can be heard

Software-Reset by input function:
– Program is restarted. All prior programming is maintained. See separate list "programmable input functions".

Fault Interrogation

Reading the current fault:

Code Input	Minimum	Standard	Maximum	Unit
S,40,				

– Shows the current fault which is also displayed at the panel. Value 0: No fault; Value 29: Reversing during closing; Value 30: Reversing during opening.

Reading the last 32 faults:

Code Input	Minimum	Standard	Maximum	Unit
S,45,				

– Displays the last 32 faults. Values see S,40.

Error message during SERCOM/DirCOM programming:

– Indicates that the input via SERCOM was not understood by the control system,
Error 04: Command unknown or syntax error
Error 10: Function used more than once (only with older software versions).

Interrogation of Drive Information

Reading the software version:

Code Input	Minimum	Standard	Maximum	Unit
P,				

– Displays the current software version.

Reading the hardware version:

Code Input	Minimum	Standard	Maximum	Unit
T,				

– Displays the hardware version.

Reading the operator type:

Code Input	Minimum	Standard	Maximum	Unit
P,1000,R,				

– Shows the programmed operator type:
8 stands for TDA, 9 stands for TDM.

Door opening command through SERCOM:

Code Input	Minimum	Standard	Maximum	Unit
S,20,				

– Permits to issue an opening command from SERCOM.

Reading the current motor position:

Code Input	Minimum	Standard	Maximum	Unit
S,70,				

– Displays in which position the motor is. This is useful for diagnosis.

Reading the current motor position and programmed opening angle:

Code Input	Minimum	Standard	Maximum	Unit
S,75,				

– Displays in which position the motor is and additionally the programmed opening angle in terms of encoder pulses for the full opening angle and the reduced opening angle.

Reading the number of door openings:

Code Input	Minimum	Standard	Maximum	Unit
S,10,				

– Allows to read the number of openings. The number to the left of the comma indicates hundredths of openings, the number to the right of the comma indicates single openings. Example: 455,67 means therefore: 455 x 100 + 67 = 45567 openings.
Note: On a software update and factory reset, the counter is reset to 0. On software reset, only the 0-100 part (67 in our example) is reset.

Input/Output Functions
Programmable Functions

Activation limit of the output functions:

Code Input	Minimum	Standard	Maximum	Unit
T,120,W,VALUE,	0	60	300	EF

– Defines a range in the CLOSED position as also in the OPEN position in which feedback is disabled in order to avoid incorrect feedback due to vibrations of the door leaf; large values = large inactive range.

8 Check List

Y	N	N/A	
☐	☐	☐	Does the door / door panels swing freely w/o obstruction?
☐	☐	☐	Are all wires clear from moving parts?
☐	☐	☐	Are all adjustment bolts tight?
☐	☐	☐	Does the break out switch function on a 100 series application?
☐	☐	☐	Are there any error codes being displayed?
☐	☐	☐	Do all the modes of operation function (Auto, Off HO)?
☐	☐	☐	Are all safety devices / sensors operating correctley?
☐	☐	☐	Has an ANSI A156.10 and / or ANSI A156.19 inspection been preformed?
☐	☐	☐	Are the Door# decal, Service decal, Daily Safety Check decal all present and in proper location?
☐	☐	☐	Has the Daily Safety Check been reviewed with the Manager?
☐	☐	☐	Have all the functions been reviewed with the Manager?
☐	☐	☐	Was the Owners manual given to the Manager?
☐	☐	☐	Did the Manager sign the work order/service ticket?

Installer signature/date _____

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