



# SMARTRISE

MADE STRONG

## INSTALLATION MANUAL

for

D3000 Door Operator



# IPC DOOR OPERATOR CONTROL MODEL D3000

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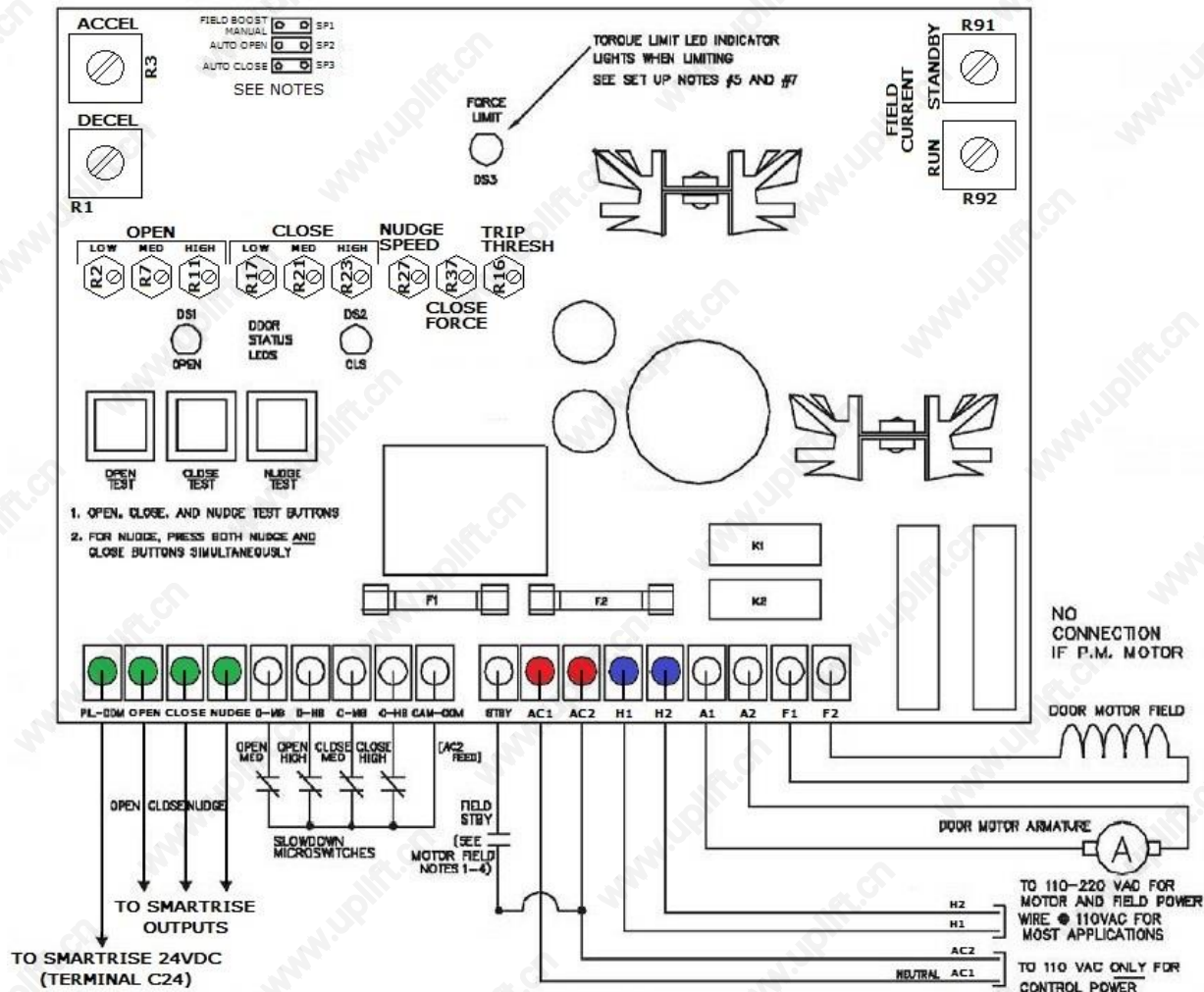
The IPC D3000 Door Operator Control Board is designed as an interface control board that operates on the low voltage signals supplied by the Smartrise SRU. Refer to Sheet 11 of the Smartrise drawings for correct wiring connections.

## **D3000 WARNINGS AND NOTES:**

1. AC1-AC2 INPUT POWER IS **115VAC**. DO NOT OPERATE AT ANY HIGHER VOLTAGE.
2. *NEVER APPLY A CAPACITIVE LOAD TO THIS ASSEMBLY. NEVER ADD ANY CAPACITORS TO THE MOTOR OR TO THE FIELD FOR ANY PURPOSE.*
3. DANGER! CAPACITORS STAY CHARGED FOR 10 MINUTES AFTER POWERING OFF. ALLOW SUFFICIENT TIME BEFORE SERVICING.
4. THIS CIRCUIT OPERATES WITH LETHAL VOLTAGES AND MAY CAUSE SERIOUS INJURY OR DEATH IF MISAPPLIED.
5. CONTROL POWER {AC1-AC2} MUST BE APPLIED BEFORE MOTOR AND FIELD POWER {H1-H2}.
6. DO NOT GROUND ANY CONNECTION EXCEPT AC1 AT ANY TIME.
7. TEST FIELD AND ARMATURE FOR INFINITE RESISTANCE TO GROUND. USE A "MEGGER" IF POSSIBLE.
8. INPUT POWER MUST BE FUSED EXTERNALLY FOR 8 AMPS.
9. DO NOT PLACE ELEVATOR IN SERVICE UNTIL THE SETUP PROCEDURE HAS BEEN COMPLETED AND DOOR OPERATION COMPLETELY TESTED.

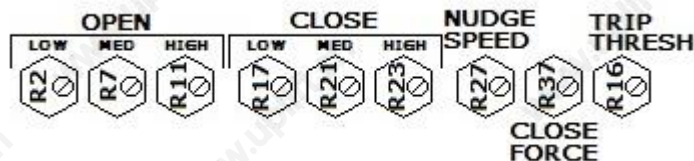
# MOTOR FIELD MANUAL / AUTO JUMPER SETTINGS

1. SP1 – “FIELD BOOST MANUAL” – CONNECT THIS JUMPER ONLY TO MAKE THE FIELD FOLLOW THE EXTERNAL STANDBY / RUN INPUT.  
IE: RUN = STANDBY CONTACT DE-ENERGIZED; STANDBY = STANDBY CONTACT ENERGIZED
2. SP2 – “AUTO OPEN” – IN THIS POSITION ONLY – FIELD WILL AUTOMATICALLY FOLLOW THE RUN SETTING IN OPEN DIRECTION AND DEFAULT TO THE STANDBY SETTING IN CLOSE.
3. SP3 – “AUTO CLOSE” – IN THIS POSITION ONLY – FIELD WILL AUTOMATICALLY FOLLOW THE RUN SETTING IN CLOSE DIRECTION AND DEFAULT TO THE STANDBY SETTING IN OPEN.
4. INSTALL BOTH SP2 – “AUTO OPEN”- AND SP3 – “AUTO CLOSE” – FOR FULL AUTOMATIC OPERATION  
IE: FIELD WILL FOLLOW THE RUN SETTING WHENEVER THE OPEN OR CLOSE PILOTS ARE ENERGIZED. WHEN BOTH PILOTS ARE DE-ENERGIZED, FIELD WILL FOLLOW THE STANDBY FIELD POT SETTING.

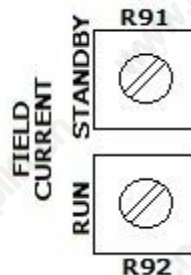
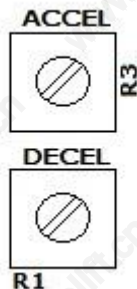


## **D3000 CONTROL ADJUSTMENTS**

1. DOOR OPEN HIGH – *OPEN HIGH* AND *OPEN MED* CONTACTS OPEN, ADJUST R11 {4 TURN POT}
2. DOOR OPEN MED – *OPEN HIGH* CONTACTS CLOSED, *OPEN MED* CONTACTS OPEN. ADJUST R7 {4 TURN POT}
3. DOOR OPEN LOW – *OPEN HIGH* AND *OPEN MED* CONTACTS CLOSED. ADJUST R2 {4 TURN POT}
4. DOOR CLOSE HIGH – *CLOSE HIGH* AND *CLOSE MED* CONTACTS OPEN. ADJUST R23 {4 TURN POT}
5. DOOR CLOSE MED – *CLOSE HIGH* CONTACT CLOSED, *CLOSED MED* CONTACT OPEN. ADJUST R21 {4 TURN POT}
6. DOOR CLOSE LOW – *CLOSE HIGH* AND *CLOSE MED* CONTACTS CLOSED. ADJUST R17 {4 TURN POT}
7. TRIP THRESHOLD – ADJUST R16 FOR REMAINING DOOR FORCE AFTER TRIP {30LBS@EDGE} {4 TURN POT}
8. CLOSE FORCE – ADJUST R37 TO SET POINT AT WHICH THE DOOR TRIPS TO SLOW SPEED/TQ UPON AN OBSTRUCTION {4 TURN POT}
9. NUDGE SPEED – ADJUST R27 TO SET THE NUDGE SPEED {4 TURN POT}



10. ACCEL / DECEL – ADJUST R3 AND R1 TO SET RESPECTIVE ACCEL AND DECEL RATES {1 TURN POT}
11. FIELD CURRENT STANDBY – ADJUST R91 TO SET FIELD OUTPUT VOLTAGE WHEN BOTH OPEN AND CLOSE PILOTS ARE REMOVED. RANGE OF 50 TO 200 VDC – SET TO 50VDC {1 TURN POT}
12. FIELD CURRENT RUN – ADJUST R92 TO SET FIELD OUTPUT VOLTAGE- SET TO 90 – 100 VDC RANGE OF 50 TO 200 VDC {1 TURN POT}



**TURN POTS CLOCKWISE TO INCREASE FORCE, SPEED or RATE**

**WARNING! – DO NOT OVERVOLTAGE MOTOR FIELD – DAMAGE TO CIRCUIT CAN OCCUR! -- GENERALLY ONLY 90 – 120VDC REQUIRED TO OPERATE FIELD AT RUN**

## **SET UP INSTRUCTIONS FOR D3000 DOOR OPERATOR**

1. INSTALL CONTROL ACCORDING TO IPC HOOK UP DIAGRAM. SET FIELD MANUAL/AUTO JUMPER SETTINGS AS DESIRED. USE 110V FOR "H1-H2" WHENEVER POSSIBLE IF ADEQUATE DOOR PERFORMANCE CAN BE OBTAINED.
2. BEFORE APPLYING POWER, PRESET ALL POTENTIOMETERS AS FOLLOWS:
  - a. 0-HI, 0-MED, C-HI, C-LO to FULLY CCW:
  - b. 0-LO, C-LO, NUDGE SPD., ACCEL/DECEL to MID POSITION:
  - c. C-FORCE and T-THRESH to FULLY CW:
  - d. STANDBY and RUN to ¼ TURN CW.
3. APPLY POWER AND CYCLE DOOR OPEN AND CLOSED. DOOR SHOULD OPERATE ONLY AT SLOW SPEED SINCE MED AND HI POTS ARE ALL THE WAY DOWN.
  - a. ADJUST 0-LO AND C-LO AND CAM SWITCHES FOR A SATISFACTORY FINAL OPEN AND FINAL CLOSE. CHECK FIELD VOLTAGE SETTINGS
  - b. SET STANDBY FOR APPROX 50VDC. RUN FOR APPROX. 90 – 110 VDC.
4. ADJUST THE OPEN MED AND CLOSE MED POTS FOR APPROPRIATE MIDRANGE SPEEDS AND ADJUST THE CAM SWITCHES FOR DESIRED SLOW-DOWN POINTS. AT THIS POINT THE ACCEL/DECEL POTS MAY ALSO BE ADJUSTED TO OBTAIN A QUICK BUT SMOOTH TRANSITION FROM MEDIUM TO SLOW SPEED.
5. ADJUST OPEN HI AND CLOSE HI POTS FOR THE DESIRED MAXIMUM DOOR SPEEDS AND ADJUST THE CAMS FOR PROPER TRANSITION POINTS FROM SLOW TO MEDIUM TO HIGH AND BACK DOWN IN EACH DIRECTION.
6. ADJUST THE ACCEL/DECEL POTS AND FINE TUNE CAM POSITIONS AND SPEEDS FOR THE BEST DOOR PERFORMANCE POSSIBLE. IT MAY BE DESIRABLE TO START THE DOOR DIRECTLY TO MEDIUM OR EVEN HIGH SPEED IF VERY HIGH DOOR PERFORMANCE IS NECESSARY. CHECK FOR SMOOTH OPERATION ON BOTH THE LIGHTEST AND HEAVIEST DOORS IN THE SHAFT. IF THE TORQUE LIMIT LED BUNKS DURING CLOSING AND DOOR "TRIPS", THE ACCEL / DECEL OR TOP SPEED IS SET TOO FAST FOR THE WEIGHT OF THE DOOR AND MUST BE REDUCED.
7. DURING A NORMAL CLOSE (DO NOT OBSTRUCT DOOR). ADJUST CLOSE FORCE POT {R37} CCW UNTIL DOOR "TRIPS" ON ITS OWN {TQ LIMIT LED SHOULD FLICKER}. THEN ADJUST POT ½ TO 1 TURN CW TO ADD HEADROOM SO DOOR DOES NOT TRIP ON ITS OWN DURING CLOSE. NEXT ADJUST "TRIP THRESH" (R16) {STEP 8}
8. TURN R16 "TRIP THRESH" POT FULL CCW. ONCE DOOR IS TRIPPED, STALL DOOR AND APPLY PRESSURE GAUGE SLOWLY. ADJUST THE R16 "TRIP THRESH" UNTIL THE FORCE GAUGE READS THE MAXIMUM DESIRED FORCE DURING A STALL CONDITION. SINCE DOOR MECHANISMS VARY IN LEVERAGE OVER THE TRAVEL OF THE DOOR, CHECK THE FORCE AT SEVERAL DIFFERENT POSITIONS IN THE CYCLE.

NOTE: IF DOOR DOES NOT MOVE IN THE CLOSE DIR, TURN TRIP THRESH OR LOW SPEED CLSE CW.
9. IF EQUIPPED WITH NUDGING, DURING CLOSING CALL FOR A NUDGE INPUT AND SET THE NUDGE SPD POT FOR THE DESIRED DOOR SPEED. THIS CAN BE DONE USING THE ON-BOARD PUSHBUTTONS. IT IS NECESSARY TO PRESS NUDGE AND CLOSE SIMULTANEOUSLY.
10. SET THE CAR FOR NORMAL OPERATION AND VERIFY OPEN AND CLOSE DOOR PERFORMANCE AT ALL FLOORS. CHECK TO MAKE SURE TORQUE LIMIT LED DOES NOT FLICKER DURING

CLOSING (A SHORT BLINK DURING INITIAL OPENING IS OK) AND THAT THE DOOR OPERATION IS SMOOTH AND DOES NOT BUMP EXCESSIVELY AT THE START OR END OF TRAVEL. VERIFY THAT THE STALL FORCE IS WITHIN SPECIFICATIONS ON SEVERAL FLOORS.