



REQUIRED

For AT400 installation where original controller is retained, original wiring diagrams (W/D) will be needed to ensure smooth installation.

For AT400 installation used with a new controller of non-Otis origin, it is strongly suggested that:

- Controller manufacturer be made aware of signal, power, and logic requirements as outlined below for the AT400. (and if not)
- In the least, utilize the pre-engineered power supply for AT400 available through UNITEC.

Watch for floating grounds. The AT400 must have a commonly wired reference point between the negative side of the DO, DC, DOL, DCL and NDG relays and dry contacts and the negative side of the 24 VDC power supply. Also, use a separate body ground from controller to car top and operator.

NOTE: Tables below will assist controller manufacturer and field wiring, as well as troubleshooting.

LOGIC STATE of Signal for AT400						
AT400 Signals To/From		Door Fully Closed	Door Fully Open	Transition from Close to Open	Transition from Open to Close	Transition from Open to Close W/NDGE
In	DO	H	L	L	H	H
In	DC	L	H	H	L	L
In	NDGE	L	L	L	L	H
Out	DOL	H	L	H	H	H
Out	DCL	L	H	H	H	H
NOTES:		In = Input to AT400 operator Out = Output from AT400 operator		H = Logic High 24VDC L = Logic Low 0VDC		

Relay State (if used)					
Relay	Door Fully Closed	Door Fully Open	Transition from Close to Open	Transition from Open to Close	Transition from Open to Close W/NDGE
DO	De-energized/ NO Contacts Open	Energized/ NO Contacts Closed	Energized/ NO Contacts Closed	De-energized/ NO Contacts Open	De-energized/ NO Contacts Open
DC	Energized/ NO Contacts Closed	De-energized/ NO Contacts Open	De-energized/ NO Contacts Open	Energized/ NO Contacts Closed	Energized/ NO Contacts Closed
NDGE	De-energized	De-energized	De-energized	De-energized	Energized
DOL	Energized/ NC Contacts Open	De-energized/ NC Contacts Closed	Energized/ NC Contacts Open	Energized/ NC Contacts Open	Energized/ NC Contacts Open
DCL	De-energized/ NC Contacts Closed	Energized/ NC Contacts Open	Energized/ NC Contacts Open	Energized/ NC Contacts Open	Energized/ NC Contacts Open

Dry contacts from DO and DC (and Nudge if present) are required if relays are used. 7300 operator control does not originally have a DC relay. Several Otis controllers may not require new relays.

The AT400 outputs either 24 VDC or 0 VDC to drive/drop the DOL and DCL circuits.

- DOL Relay de-energizes when doors reach fully open (DFO).
- DCL relay de-energizes when doors reach fully closed (DFC).



- 24 VDC DOL & DCL relays are supplied with UNITEC kits for arrangements where the existing controller is being retained. Driving any other devices directly from the DPS proximity switch is not permissible.

It is a must that the car door have a hard stop of some sort installed (if not present) on the open side of its travel. If the open position of the car door is left undefined (with no stop), the AT400 could sense that the doors have either not reached or gone beyond full open and a fault may occur. Each hoistway landing full open stop bumper may be located differently. Do not rely on hall door stop for full open position on car doors. If car doors chatter or bounce at full open, controller manufacturer must ensure “DO” **relay** remains **energized** through the entire door dwell open time (follow tables).

ALERTS

Circuits vary within manufacturers’ equipment. Any UNITEC supplied W/D or cut in diagrams provided as part of any AT400 upgrade kits are guides only. Plan to engineer wiring locally.

AT400 is a closed loop operator and carries an encoder on the motor to govern door position and velocity after a LEARN run. There is no need for additional microswitches to sense door limits. Both a gate switch contact and a secondary door close position sensor are integral with AT400.

Pay close attention to the AT400 breaking nudging contact requirement and how the existing door reversal system and nudge relay operate. (For AT400, operator is “ON” nudging operation when the nudging relay energizes) or the nudging circuit is “opened.”

Door Force Measurement. Please be sure the mechanics and local inspectors are using a common (and ANSI Code directed) method for measuring door force. The AT400 operator achieves door force after a stall at very close to (but not over) the code limit of 30 lbs. If your reading exceeds 30 lbs:

- Be sure to calibrate your existing or use a new door force gauge.
- Confirm with ANSI A17.2 item 1.8.1 that the correct method for measurement is being used.

NOTE: Door force must be measured within approximately 1.5 seconds after the doors stall.

A service tool is not needed to make operator adjustments to establish an acceptable door motion profile. Speeding up the doors is not permissible since the AT400 learn run accounts for the doors moving mass and fully satisfies the ANSI code max kinetic energy requirement.