

# WITRONIC LIFT MICROPROCESSOR



## International Lift Equipment

Blaby Industrial Park  
Blaby  
LEICESTER

### FAULT INDICATORS

- = N-reg
- = mNH
- = TKF
- = FaZ
- = USp
- = RIK
- = TSZ
- = RIF
- = msU
- = R2
- = Re-levelling
- = Safety Circuit Operated in Travel
- = Landing Lock Operated in Travel
- = Journey Timer Exceeded
- = Voltage Peak
- = Prelock Fault
- = Door Closing Time Exceeded
- = Door Lock Operated in Travel
- = MSF/MSB/MPS/Tape Head Fault
- = Thermistor Tripped

### CAR POSITION INDICATORS

= 8-7-6-5-4-3-2-1

- = 12
- = 11
- = 10
- = 9
- = A.Betr
- = UberL
- = WauF
- = Wab
- = msf
- = msb
- = VES

### CALLS REGISTERED

Car Up Down  
87654321 87654321 87654321

### SYSTEM INDICATORS

- = R3
- = R4
- = INT
- = R5
- = R5d
- = KaL
- = Pha
- = NH
- = Tk
- = Insp
- = T-Ph
- = Microprocessor Working
- = Car Preference
- = Collective Control
- = Homing Timer Operating
- = Thermistor
- = Phase Failure & Reversal
- = Car Safety Circuit
- = Landing Safety Circuit
- = Car Top Control
- = Third Phase Live

- = IFS
- = Lgs
- = ab
- = aut
- = Tur Zu
- = Tur aut
- = MS4
- = LSc
- = LK
- = LKWT
- = LKWT
- = LKWT
- = LKWT
- = LKWT

- = Car Position
- = Car Position
- = Car Position also (LPF FAPB only)
- = Car Position also (CPF FAPB only)
- = Out of Service
- = Car overloaded (output)
- = Up Direction Indicator
- = Dn Direction Indicator
- = Up MPS/Tape Head
- = Dn MPS/Tape Head
- = Reset Operated

- = Tur B auf
- = Tur A auf
- = T-zu
- = IFI
- = TurA
- = F-W
- = UberL
- = VoILL
- = Ra
- = Rb
- = Tur B
- = Doors 'B' Re-opening
- = Doors 'A' Re-opening
- = Door Close Button
- = Drive Contactors Energised
- = Door 'A' Open Contactor
- = Firemans Control
- = Car Overloaded (input)
- = 90% By-Pass
- = Terminal Interface Test
- = Service Control
- = Door 'B' Open Contactor

14. Switching on for the first time - Normal operation

Installation State: The lift is complete and is to be operated normally for the first time.

The electronic PCB of the Witronic MPS-A is plugged into the socket, the main supply is switched on and fuse F1 is correct,

A command call must be applied after switching on, to enable the lift car to carry out a reset cycle (the lower floor position indicator will flash requesting a reset drive) The lift car will now start to move and make the reset trip to the lowest floor and stop, flush with the level. The lift will then travel to the selected floor.

To enable the system to learn the number of floors and the length of travel, after the reset drive is recommended that the lift car be sent to the highest floor.

The lift car does not move, why ?

- a. Are the door fuses correct ?, check fuses Si2 and Si3 on the PCB
- b. Is the safety circuit closed ?, LED NH must be illuminated
- c. Is the lock circuit closed ?, LED TK must be illuminated
- d. Is the Test switched on ?, LED Insp must NOT illuminate
- f. Is the thermistor correct ?, LED Kah and LED R2 must NOT illuminate
- g. Are the phases correct ?, LED Pha must NOT illuminate
- h. Inspect the PCB for any fault indicators, see pages 15-18

### 13. Faults in operation

If the lift system is not working correctly, the service engineer must find the fault. The electronic circuit helps the engineer in fault-finding, because the circuit finds these faults and remembers what's happened, simultaneous and even short term and rare faults are recorded by the electronic circuits. No external diagnostic equipment is required for finding and recording faults.

Apart from storing and displaying individual faults on an LED, the electronic circuit remembers on which floor the lift car was, when the fault occurred.

When the engineer runs the car the full length of shaft, the appropriate 'fault LED', at the appropriate floor 'flashes on and off', while remaining continuously illuminated at other floors.

When the service engineer arrives at the faulty lift system, He must, before switching off the supply, make a note, of the state of ALL the fault indicators.

SWITCHING THE SUPPLY OFF AND ON, RESETS THE ELECTRONIC CIRCUITS. Therefore it is essential to write down which LED's were illuminated. The supply must be switched off for at least 10 seconds to enable a full reset to take place.

#### System Check

- a. All fuses (including Si2 & Si3 on MPS-A Board)
- b. Overloads/Circuit Breakers etc
- c. Stop/Safety Circuit, NH must be illuminated
- d. Pha (Phase Relay) must NOT BE illuminated  
(if Pha is illuminated CHECK phases are correct,  
rotate if required)  
(if NH is not illuminated the Pha will be illuminated)
- e. Kal (Thermistors) must NOT BE illuminated  
(if thermistors ARE NOT FITTED, terminals Tm1 & 70 MUST BE  
LINKED)
- f. FaZ (Journey Timer) must NOT BE illuminated/flashing
- g. Check that the following functions are NOT switched on  
and the LEDs ARE NOT illuminated
  - (1) Insp, Test Control
  - (2) Vol11L, By-Pass 90%
  - (3) Rb, Service Control
  - (3) F-W, Fire Control
  - (4) Uber1, Lift Car Overloaded
  - (5) A.Betr, Out of Order

14. Common Faults on the Lift System

a. *Lift Car out-of-step with controller*

- (1) When car stops at floor level both Msb & Msf MUST BE illuminated
- (2) Check Tapehead unit/floor selection switches operate correctly
- (3) Check car/landing calls are being entered to correct floors
- (4) Check Switching sequence operates exactly as the drawing ie, lift going up - MSF & MSB then MSB then MSF then MSF & MSB etc

b. *Doors remain open & will not close*

- (1) Check safe edge/door open button/photocells are not operated. See LED T-Zu
- (2) Check door open limit has operated
- (3) Check switch No5 on MPSA, doors will park open if switch is on
- (4) Check motor thermistor has not operated. See LED Kal/R2
- (5) Check terminal limits
- (6) Note under fire control/service control/overload bypass the lift doors will remain open and only close via a car call

c. *Doors closed lift will not run*

- (1) Check car and landing locks are made LED TK
- (2) Check door limits

d. *Lift stops in travel*

- (1) Lock tipped see LED TKF/RIF
- (2) Journey timer operated. See LED FAZ
- (3) Slowing switch incorrectly set
- (4) Lift slowed and stopped mid shaft tape head/proximity switch malfunctioning or set incorrectly. LED MSU will light

15. General Faults

a. *Check the Lift System Primary Circuits*

- (1) Terminals PSP to PS - Pit Switch
- (2) Terminals PS to OTL - Overtravel Limits
- (3) Terminals OTL to RWS - O/S Governer & Return Wheel Switches
- (4) Terminals RWS to CTS - Safety Gear Switch & Car Top Stop

b. *If all circuits appear to be O.K. there is obviously the possibility of a coil burning out on a relay/contactator or even the motor/brake/ramp/valve coils burning out.*

c. *If further help is required whilst fault finding please make a note of the Following before contacting ILE/EAD*

- (1) LEDs that are illuminated,
- (2) A full report of the state of all the contactors and relays etc
- (3) A full report of the lift fault

## 16. List of fault, LED Indicators

**LED - N-reg,** Illuminates during automatic re-levelling  
(only appropriate to lifts re-levelling with doors closed)

**LED - mNH,** Illuminates when the safety switch operates during the travel of the lift car, if there is no passengers in the car, this points to a fault on the switch contacts, or another safety switch according to the circuit diagram.

**LED - TKF,** Illuminates if a door contact is interrupted during the travel of the lift car, cause: door contact. The floor at which the car was, when the fault occurred is shown by a flashing LED.

**LED - FaZ,** Illuminates when time monitoring operates, this can only be reset by switching the supply off and on. The time delay cannot be set by the engineer, the electronic circuits learn the necessary times when travelling the length of the lift shaft and automatically set themselves to this time plus a few seconds.

**LED - USp,** This LED shows voltage peaks or voltage breakdown on the main supply. One reason for the unusual lack of sensitivity of the witronic MPS-A electronics to voltage peaks is that the electronic circuits recognise voltage peaks and voltage breakdown, they then switch off automatically and are safe. After the situation returns to normal; the electronic circuits automatically switch on again. This occurs so quickly that the contactors do not drop out and no fault appears, only the LED USp illuminates. This is a signal to the engineer to check the spark suppression of the brake, ramp or valves etc. Only in the case of a fault does the system have to be checked for mains faults.

**LED - Rik,** This illuminates if there is a fault with the door locks, preventing the lift car from leaving the landing, pre-lock fault, A flashing LED indicates which floor.

**LED - TSZ,** Door closing time delay. The time which the automatic doors require to close is determined by the electronic circuits. The engineer cannot adjust this delay. If this time is exceeded by more than 3 seconds in operation, the door opens again and a second attempt is made at closing.  
The floor at which the car was parked, when the fault occurred is shown by the flashing LED.

**LED - Rif,** Illuminates if a lock contact is interrupted during the travel of the lift car, cause: door lock. The floor at which the car was, when the fault occurred is shown by the flashing LED.

LED - msU, Magnet switch monitoring, if the lift car slows on a proximity switch and then fails to stop after 10 seconds, this led illuminates.

LED - R2, This LED illuminates if the motor thermistors operate. If they operate in travel the supply must be switched off and then back on again, to reset the system. If they operate when the lift is stopped at floor level the lift will not run until the thermistors have closed the circuit on terminals TM1 & 70.

LED - R3, Microprocessor working, see note \*

LED - R4, This LED illuminates when there is a car call priority, (landing call delay).

LED - INT, This LED should be flickering at normal use with collective control, not illuminated on FAPB, see note \*

Note \* if one of these LED's are not illuminated, exchange of the EPROM or complete PC Board may be necessary.

LED- R5,

LED - RSd, Illuminated when automatic return to control floor. also flashing when the journey timer running.

LED - Pha, Illuminated after supply line supervision failure. or safety circuit open circuit.

LED - KaL, Illuminated when thermistor motor protection is high resistive, and therefore open circuit.

LED - T-Ph, Supervision of line 3 of the mains power supply.

LED - Insp, Illuminated when lift is switched to Car Top Control.

LED - TK, Status of safety circuit after door contacts.

LED - NH, Status of safety circuit ie overtravel limits emergency stops etc.

LED - Tur-auf, Door open contactor energised.

LED - Tur-zu, Door close contacts energised.

- LED - auf, Up contactor energised.
- LED - ab, Down contactor energised
- LED - lgs, Slow contactor energised, from deceleration point to final stop, also at car top control test drive.
- LED - IFS, Fast contactor or drive contactor (if used) energised. Must be illuminated from start to final Stop. The speed Change is controlled externally. At the point of speed change at a reset drive the triac is switched off for 200ms.
- LED - TurB, Door open contactor 'B' energised.
- LED - Rb, Service Control
- LED - Ra, Input display for test button on interface board.
- LED - VollL, Input display for bypass control and Service Control
- LED - UberL, Input display for car overloaded Control.
- LED - F-W, Input display for firemans control.
- LED - TurA, Door open contactor 'A' energised.
- LED - lFI, Drive contactors energised.
- LED - T-zu, Input display for door close button.
- LED - Tur A auf, Input display for 'A' door re-opening.
- LED - Tur B auf, Input display for 'B' door re-opening.
- LED - VES, Input display for terminal '528', forcibly activated speed change must carry out a quick flash at every reset drive.
- LED - msb, Status display of the DOWN magnet switch.
- LED - msf, Status display of the UP magnet switch.



LED - Wab, Down direction indicator, see note \*

LED - Wauf, Up direction indicator, see note \*

note \* Will be switched off after 7 mins when lift is not in use, when the system is FAPB both outputs are controlled in parallel, driving the lift-in-use indicators.

LED - UberL, Output for car overloaded display, this output is also used to give a drive command at firemans control and automatic return to the control floor. (also see function of code switches.)

LED - A.Betr, Output for the Out-of-order indicator, illuminated when,

a. lift is on car top control test.

b. Thermal motor protection tripped (input terminal '523').

c. Line supervision had responded.

e. Service Control

f. Landing calls are switched off after emergency switch operation during drive.

LED - Kab 1ST 9 - 12, Car position indicators for floors 9 to 12, note if the system is FAPB then as follows,

a. Kab 1ST 9 = Car push feed indicator

b. Kab 1ST 10 = Landing push feed indicator

LED - KABINE 1ST 1 - 8, Car Position indicator for floors 1 to 8, if LED for lower floor is flashing, the lift will start a reset drive to the lower floor, after giving a command, after the reset journey the car will respond to the command given. Car position indicators are switched off after 7 min. If the lift is not in use.

LED - ABRUF 1 - 8, Down calls for floors 1 to 8.

LED - AUFRUF 1 - 8, Up calls for floors 1 to 8, note if the system is a 12 floor down collective then as follows,

a. Up calls 1 - 4 is changed to down calls 9 - 12.

b. Up calls 5 - 8 is changed to car calls 9 - 12.

LED - KABINENSUF 1 - 8, Car calls for floors 1 to 8.

17. Function of the code switches, from left to right

Valid when used with EPROMS with serial No 713 and above

- 1st switch: Bit-0 at Duplex Control, for single lift: off  
SEE CHART 1  
or with link 'A' : FAPB single speed
- 2nd switch: Bit-1 at Duplex Control, for single lift: off  
SEE CHART 1
- 3rd switch: on : homing 1st floor (after 7 minutes)  
off : homing floor, free to choose if connected  
with car overloaded output. (7 minutes)
- 4th switch: on : automatic re-levelling active  
and journey time extended
- 5th switch: on : automatic doors parked open  
off : automatic doors parked close
- 6th switch: Door time; SEE CHART 2
- 7th switch: \*)
- 8th switch: \*) \*) SEE CHART 3
- 9th switch: \*)
- 10th switch: on : phase failure and reversal active  
Commencing: connect 3 phase power supply  
so the LED PHA is illuminated: then connect  
the motors to the correct direction.  
Will only work with a 4 wire supply  
otherwise a separate PFRR unit will be fitted

CHART 1 - The function of DIL switches 1 and 2

Lift in group	DIL Switch	DUPLEX	TRIPLEX	QUADRUPLE
1	1	off	off	off
	2	off	off	off
2	1	on	on	on
	2	off	off	off
3	1	off	off	off
	2	on	on	on
4	1	on	on	on
	2	on	on	on

**CHART 2 - Door close times after the doors have fully opened**

DIL Switch 6	Link 526-537	LINK 537-SE	Time in seconds
off	out	out	4
off	in	out	11
off	out	in	4
off	in	in	5
on	out	out	8
on	in	out	16
on	out	in	5
on	in	in	10

Note, without link 537-SE the anti-nuisance feature becomes operative.

**CHART 3 - Function of DIL switches 7, 8 and 9**

Max. No of floors	Type of System	Switches		
		7	8	9
8	full collective	off	off	off
12	1 button up/down	on	off	on
12	down collective	on	off	off
16	full collective	off	on	off
24	down collective	on	on	off
24	1 button up/down	on	on	on

Link A:            On:            FAPB  
                   Off:            Any Collective Control

Link C:            Right:        To be set on main board  
                   Left:         To be set on Floor Extension Board