5. START-UP

5.1. CONNECTION TO ELECTRONIC CONTROL UNIT

Warning: Always turn off the electricity supply before carrying out any work on the electronic control unit (connections, programming, maintenance).

Observe points 10, 11, 12, 13 and 14 in the GENERAL SAFETY INSTRUCTIONS.

Since the system requires two different power supplies (230 and 400 Vac), install two differential magneto-thermal circuit breakers with adequate trip threshold up-line of the system.

Connect the earth cable to the connection on the base of the operator. See fig. 15.

The gearmotor is provided with a safety device (Fig.1 Ref. 7) operated by the relase system.
While activated the safety device keeps the gearmotor from making any movement.

As shown in Fig. 3, prepare the conduits and make the electrical connections from the 844MPST electronic control unit to the chosen accessories.

Always route the power supply cables separately from the control and safety cables (keyswitch, receiver, photocells, etc.). Use separate conduits to avoid any interference.

Table 2 Technical specifications 844MPST

| Power supply	230 V (+6% - 10%) 50 Hz
Absorbed power	10W
Max. motor load	800W
Max. electric lock load	0.5A
Temperature range	-20 °C +55 °C
Fuses	3 (see fig. 5.1.1)
Operation logics	Automatic / Semiautomatic / Safety / Semiautomatic B / Deadman C
Pause time	Adjustable by dip-switches
Terminal block inputs	Open / Partial opening-Close Stop / Closing safeties / Power supply
Terminal block outputs	Flashing light - motors - 24 Vdc accessories power supply - 24 Vdc warning lamp power supply -
Quick connector	Decoder cards / RP-SL-DS
Programmable functions	Operating logics / Pause times / Warning lamp operation
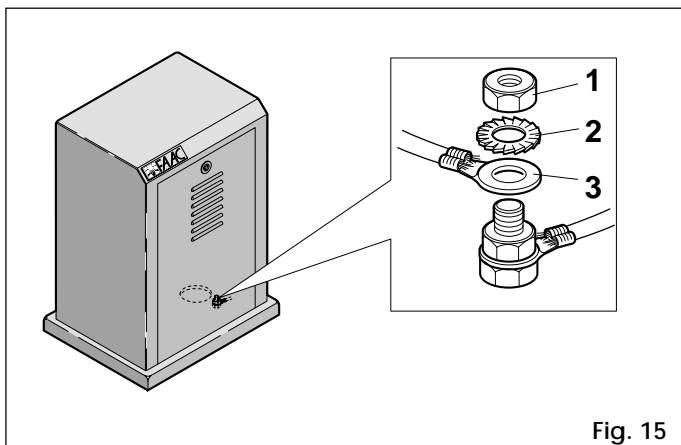
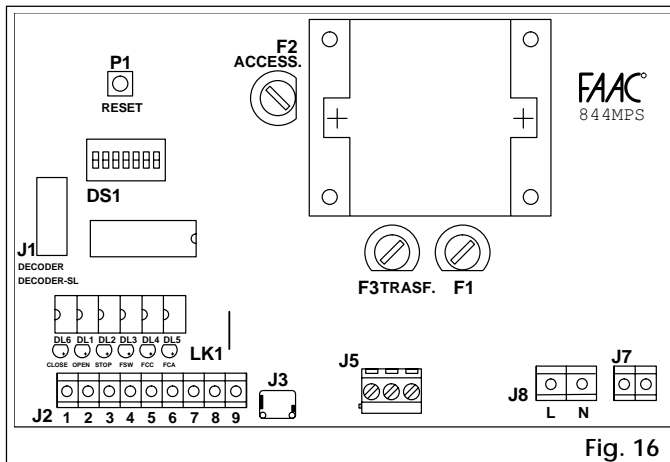
Fig. 15

5.1.1. LAYOUT AND ELECTRICAL CONNECTIONS

Fig. 16

Table 3 Control unit components 844MPST

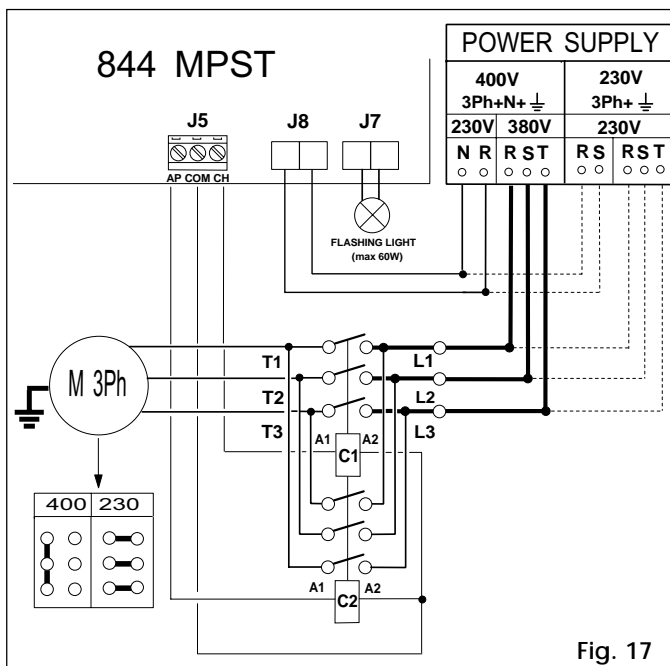| LD1	OPEN LED
LD2	STOP LED
LD3	SAFETY LED
LD4	CLOSURE LIMIT SWITCH LED
LD5	OPENING LIMIT SWITCH LED
LD6	LED OPEN PARTIAL / CLOSE
P1	RESET BUTTON
J1	DECODER CONNECTOR
J2	LOW VOLTAGE TERMINAL BLOCK
J3	LIMIT SWITCH CONNECTOR
J5	CONTACTOR CONNECTION TERMINAL BLOCK
J7	FAAC LAMP CONNECTION TERMINAL BLOCK
J8	POWER SUPPLY
F1	CONTACTOR FUSE (F5 A)
F2	ACCESSORIES FUSE (T 1.6 A)
F3	TRANSFORMER FUSE (T250 mA)
LK1	WARNING LAMP FREE CONTACT
DS1	PROGRAMMING DIPSWITCH

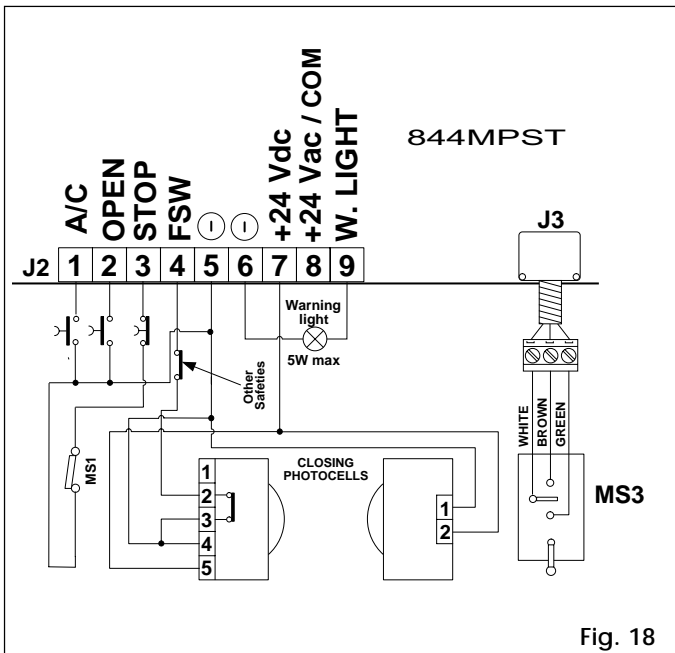### 5.1.2 HIGH VOLTAGE ELECTRICAL CONNECTIONS

Fig. 17

Fig. 18

① **Low voltage terminal block J2** (Fig. 16) is used to connect all accessories (see Table 4).

1. A/C Partial opening
This means any control device with a N.O. contact which causes partial opening of the gate when activated in E1, E2, A1, A2, S1 or S2 logics. In B and C logics it causes the gate to close. To install more than one partial opening control device, connect the N.O. contacts in parallel.

2. OPEN
This means any control device with a N.O. contact which causes the gate to open when activated. In automatic and semiautomatic logics it is active for both opening and closure. To install more than one opening control device, connect the N.O. contacts in parallel.

3. STOP
This means a control device with a **N.C.** contact which causes the gate status (opening-pause-closure) to be interrupted until the next impulse is sent. To install more than one stop device, connect the N.C. contacts in series to MS1 and MS2.

4. FSW SAFETIES
This means all devices (photocells, safety edges, magnetic loops) with a **N.C.** contact which stop the movement of the gate when an obstacle is present in the area protected by the safety devices. To install more than one safety device, connect the N.C. contacts in series.

N.B.: if safety devices are not connected, jumper terminals 4 and 5 on the electronic control unit.

5. Controls common and accessories power supply negative

6. 24 Vac output for warning lamp power supply

7. +24 Vdc accessories power supply positive

Warning: the maximum load of the accessories is 500mA. To calculate power consumption refer to the corresponding table.

Tab. 4 Accessories current draw

TYPE OF ACCESSORY	NOMINAL CURRENT DRAW
PLUS 40SL	30mA
PLUS E	20mA
MINIDEC SL / DS	6mA
DECODER SL/DS	20mA / 55mA
RP ESL / EDS	12mA / 6mA
DIGICARD	15mA
METALDIGIKEY	15mA
FOTOSWITCH	90mA
DETECTOR F4 / PS6	50mA
PHOTOBEAM	50mA

W.LIGHT (terminals 6 - 8 - 9)
These are the 24 Vdc terminals to which the warning lamp must be connected. With jumper LK1 intact it is possible to power a 24V / 5W max. warning lamp between terminals 6 and 9. In case a potential free contact is needed between the terminal strips 8 and 9, the link LK1 must be cut. (see Table 5).

WARNING: If the jumper LK1 is broken, the 24 Vac accessories power supply (terminals 6 and 8) is no longer available.

Table 5: Warning lamp connection

LK1 INTACT	LK1 BROKEN (FREE CONTACT)
●━━●	●━✕━●

② **Connector J3** limit switch unit connection

③ **Terminal block J5** contactor connection
The motor control contactors must be connected to these terminals.

④ **Terminal block J6** (fig. 16)
L: 230V power supply (live)
N: 230V power supply (neutral)

⑤ **Terminal block J7** (fig. 16)
Flashing light output (230V)

6. BEHAVIOUR OF SAFETY DEVICES

The safety devices operate during closure only. In "A1", "E1" and "S1" logics, interrupting the safety device contacts causes the gate to stop closing and start opening immediately. In "A2", "E2" and "S2" logics, interrupting the safety device contacts causes the gate to stop closing, then to start opening again when the safety devices are released.
In "B" and "C" logics, interrupting the safety device contacts causes the gate to stop closing.

7. DIPSWITCH SETTINGS

To program automation operation, set the dipswitches as shown in the diagram below.

Logic	SW1	SW2	SW3
E1	ON	ON	ON
B	OFF	ON	ON
S2	ON	OFF	ON
E2	OFF	OFF	ON
A1	ON	ON	OFF
C	OFF	ON	OFF
S1	ON	OFF	OFF
A2	OFF	OFF	OFF

Pause time (sec) (1)			
Logic A1 A2 S2	S1	SW4	SW5
5	15	ON	ON
10	30	OFF	ON
30	60	ON	OFF
120	180	OFF	OFF

Pre-flashing (2)	SW7
Yes	ON
No	OFF

Warning lamp operation			
	Gate status		
SW6	Closed	Opening/Open	Closing
ON	Off	Steady light	Steady light
OFF			Flashing

(1) Pause times include pre-flashing.
(2) Pre-flashing commences 5 seconds before the start of each movement.

N.B.: PRESS THE RESET BUTTON AFTER ALL PROGRAMMING OPERATIONS.

8. OPERATION IN VARIOUS LOGICS

The following 8 logics are available:

E1/E2/B: "Semiautomatic"   A1/A2: "Automatic"
S1/S2: "Safety"   C: "Deadman"

Operation of the various logics is shown in tables 6-7-8-9-10-11-12-13.

TABLE 6 LOGIC E1 (SEMIAUTOMATIC)

LOGIC E1	IMPULSES		
GATE STATUS	OPEN - A/C (1) -	STOP	SAFETY
CLOSED	opens (2)	no effect	no effect
OPEN	recloses (2	no effect	no effect
CLOSING	inverts motion	stops	inverts motion
OPENING	stops	stops	no effect
STOPPED	recloses (reopens when safety devices are engaged) (2)	no effect	no effect

TABLE 7 LOGIC E2 (SEMIAUTOMATIC)

LOGIC E2	IMPULSES		
GATE STATUS	OPEN -A/C(1)-	STOP	SAFETY
CLOSED	opens (2)	no effect	no effect
OPEN	recloses (2)	stops counting	no effect
CLOSING	inverts motion	stops	freezes pause until disengagement
OPENING	stops	stops	no effect
STOPPED	recloses (reopens when safety devices are engaged) (2)	no effect	no effect

TABLE 8 LOGIC A1 (AUTOMATIC)

LOGIC A1	IMPULSES		
GATE STATUS	OPEN - A/C (1) -	STOP	SAFETY
CLOSED	opens and recloses after pause time (2)	no effect	no effect
OPEN	recloses after 5 s (3)	stops counting	freezes pause until disengagement
CLOSING	inverts motion	stops	no effect
OPENING	no effect	stops	no effect
STOPPED	recloses (2)	no effect	no effect

TABLE 9 LOGIC A2 (AUTOMATIC)

LOGIC A2	IMPULSES		
GATE STATUS	OPEN - A/C (1) -	STOP	SAFETY
CLOSED	opens and recloses after pause time (2)	no effect	no effect
OPEN	recloses after 5 s (3)	stops counting	recloses after 5 s when disengaged
CLOSING	inverts motion	stops	inverts motion
OPENING	no effect	stops	no effect
STOPPED	recloses (2)	no effect	no effect

TABLE 10 LOGIC S1 (SAFETY)

LOGIC S1	IMPULSES		
GATE STATUS	OPEN - A/C (1) -	STOP	SAFETY
CLOSED	opens and recloses after pause time (2)	no effect	no effect
OPEN	recloses immediately (2 and 3)	stops counting	recloses after 5 s when disengaged
CLOSING	inverts motion	stops	inverts motion
OPENING	inverts motion	stops	no effect
STOPPED	recloses (2)	no effect	no effect

TABLE 11 LOGIC S2 (SAFETY)

LOGIC S2	IMPULSES		
GATE STATUS	OPEN - A/C (1) -	STOP	SAFETY
CLOSED	opens and recloses after pause time (2)	no effect	no effect
OPEN	recloses immediately (2 and 3)	stops counting	freezes pause until disengagement
CLOSING	inverts motion	stops	stops and inverts motion when disengaged (2)
OPENING	inverts motion	stops	no effect
STOPPED	recloses (2)	no effect	no effect

TABLE 12 LOGIC B (SEMIAUTOMATIC)

LOGIC B	IMPULSES			
GATE STATUS	OPEN	A/C (5)	SAFETY (until disengagement)	STOP
CLOSED	opens (2)	no effect	no effect	no effect
OPEN	no effect	closes (2)	inhibits closing	no effect
CLOSING	no effect	no effect	stops	stops movement
OPENING	no effect	no effect	no effect	stops movement
STOPPED	completes opening (2)	completes closing (2)	inhibits closing	no effect

TABLE 13 LOGIC C (DEADMAN)

LOGIC C	IMPULSES			
GATE STATUS	OPEN (4)	A/C (4 and 5)	SAFETY (until disengagement)	STOP
CLOSED	opens	no effect	no effect	no effect
OPEN	no effect	closes	inhibits closing	no effect / stops
CLOSING	no effect		stops	stops
OPENING		no effect	no effect	stops
STOPPED	completes opening	completes closing	inhibits closing	no effect

(1) The A/C input enables partial opening.
(2) With pre-flashing selected movement starts after 5 seconds.
(3) If the impulse is sent after pre-flashing the timer recounts.
(4) For operation in C logic keep the pushbutton depressed. Movement stops upon release.
(5) The A/C input controls closure.