

FAAC

FAAC CITY

Automatic concealed bollards
275 H600 and 275 H800
Control station



Technical installation manual

- **CE Declaration**
- **Warnings for the installer**
- **Bollard electrical connection**
- **Technical specifications for control station**
- **Control station lay-out**
- **Dip-switches on control board**
- **Connection terminal boards for control boards**



CE DECLARATION OF CONFORMITY FOR MACHINES (DIRECTIVE 98/37/CE)

Manufacturer: FAAC S.p.A.

Address: Via Benini, 1 - 40069 Zola Predosa BOLOGNA - ITALIA

Declares that: Faac City Master and Faac City Slave equipment

- conform to the essential safety requirements of the following EEC directives:
73/23/EEC and subsequent amendment 93/68/EEC.
89/336/EEC and subsequent amendment 92/31/EEC and 93/68/EEC

Additional information:

These products underwent tests in a typical, uniform configuration (all products manufactured by FAAC S.p.A.).

Bologna, 01 January 2005

The Managing Director
A. Bassi

A handwritten signature in black ink, appearing to be 'A. Bassi', written over a faint circular stamp or watermark.



WARNINGS FOR THE INSTALLER - GENERAL SAFETY OBLIGATIONS

1	IMPORTANT! To ensure the safety of people, it is important that all the instructions be carefully observed. Incorrect installation or incorrect use of the product could cause serious harm to people.	14	Make sure that the earthing system is workmanlike built and connect the metal parts to it.
2	Carefully read the instructions before beginning to install the product.	15	The automated system consists of an intrinsic anti-crushing safety device controlling the torque. However, you must check its action threshold as mentioned in the Regulations in point 10.
3	Packing materials (plastic, polystyrene, etc.) must not be left within the reach of children, because these materials are potential danger sources.	16	Safety devices (EN 12978 standard) protect possible danger areas against Mechanical movement risks . e.g. crushing, carrying away and shearing.
4	Keep the instructions for future reference.	17	Use of at least one warning light is recommended for every system (e.g. a built-in flashing light on the bollard head), a warning sign, in addition to the devices mentioned in point "16".
5	This product was designed and built exclusively for the use indicated in this documentation. Any other use not expressly indicated could compromise the integrity of the product and/or be a source of danger.	18	For maintenance, strictly use original FAAC S.p.A. parts.
6	FAAC S.p.A. declines any responsibility due to improper use or use other than the use for which the automated system is intended.	19	FAAC S.p.A. declines all responsibility on the safety and efficient operation of the automated system, if system components not produced by FAAC S.p.A. are used.
7	Do not install the equipment in an explosive atmosphere. the presence of gas or inflammable fumes is a serious danger to safety.	20	Do not in any way modify the components of the FAAC CITY automated system.
8	For non-EU countries, to achieve an adequate safety level, the above mentioned standards must be observed in addition to the national standard references.	21	The installer must supply to the user Customer, all the information about the manual lowering of the bollard in case of an emergency, and must hand over to the System User the warning handbook which accompanies the product.
9	FAAC S.p.A. is not responsible for the non-observance of good workmanship in installing FAAC CITY products and the relevant accessories, or for any deformation which may occur through use.	22	Do not allow children or persons to stay near the bollard, especially while it is in operation.
10	The installation must be carried out by observing the current regulations in force.	23	Keep radio controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
11	Before attempting any action on the system, cut out the electrical power supply.	24	The FAAC CITY bollard must be transited over only when the device is completely lowered.
12	Install an all-pole switch on the electricity supply line for the automated system, with contact opening distance of 3 mm or more. We advise you to use a 6A differential thermal breaker with all-pole switching.	25	The User must not in any way attempt to repair or to take direct action and must contact qualified authorised personnel only.
13	Make sure that a differential switch with a threshold of 0.03A is installed upstream of the system.	26	Anything not expressly specified in these instructions is not permitted.



TECHNICAL SPECIFICATIONS FOR CONTROL STATION

Electronic control circuit	A microprocessor with specific software for controlling FAAC CITY bollards
Enclosure for control station	Wall fitting
Dimensions of enclosures	According to system configuration
Protection class	IP 55
Operating temperature	-15°C + 70°C
Control station power supply	230V + 6/-10% 50Hz
Protective switch (not supplied)	Differential thermal breaker 1P + N - 6 A ÷ 16 A - 30 mA - 6 KA
Service transformer	230/24Vac - 100 VA
Maximum number of FAAC CITIES connectable to the control station	Max 10 FAAC CITIES with simultaneous movement - the 1 st FAAC CITY is connected to the master unit -- the others are connected to additional slave units - the enclosure dimension depends on the quantity of FAAC CITIES

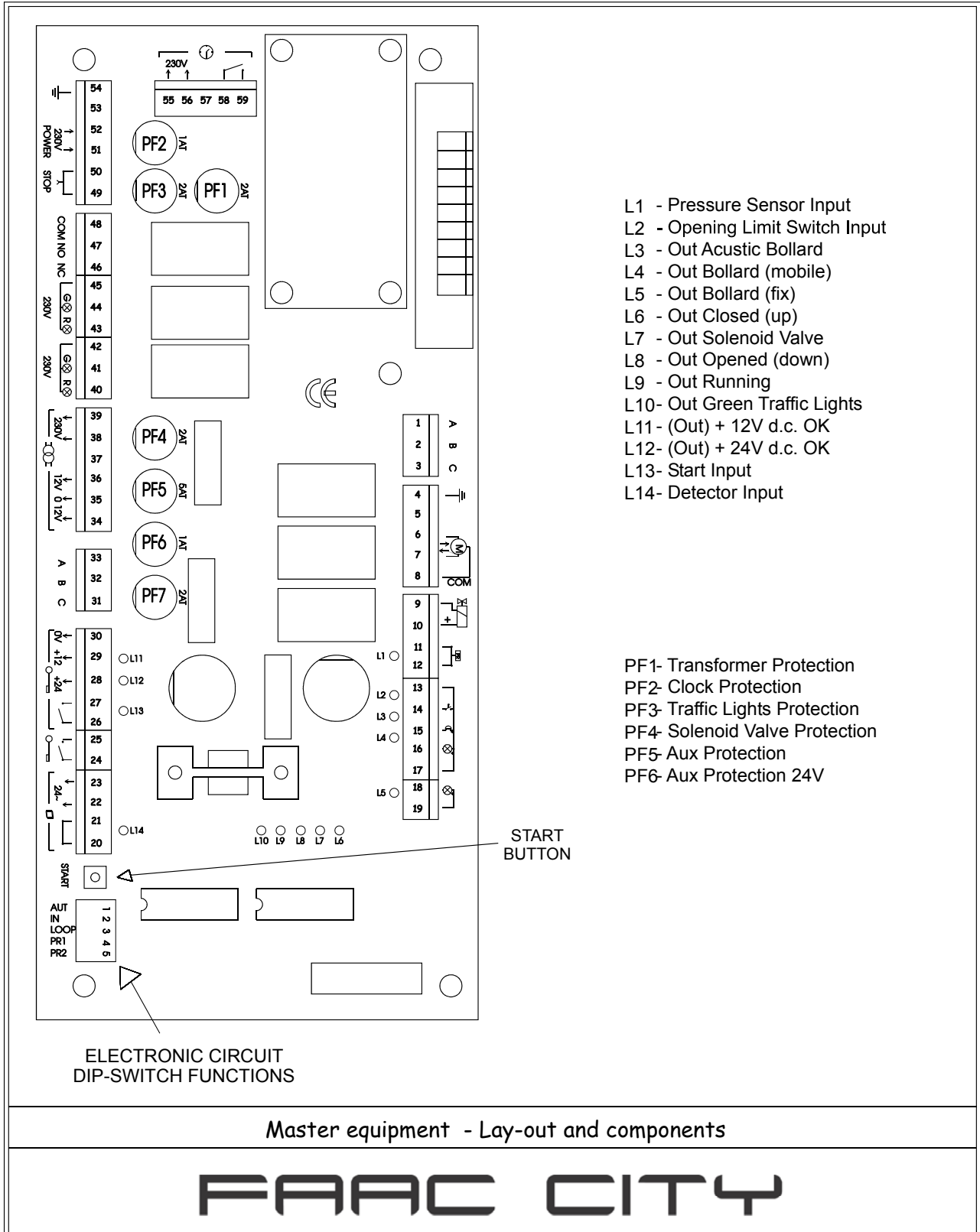
WALL FITTING ENCLOSURES FOR STATIONS CONTROLLING THE MOVEMENT OF FAAC CITY BOLLARDS

Dimensions L x H x D	Material	System configuration
300 X 380 X 160	GW PLAST 120° C	- For basic system with 1 FAAC CITY
308 x 460 x 160	GW PLAST 120° C	- For system with 1 accessory FAAC CITY - For basic system with 2 FAAC CITIES
405 X 650 X 250	POLYESTER	- For system with 3 accessory FAAC CITIES - For basic system with 5 FAAC CITIES
515 X 650 X 250	POLYESTER	- For system with 5 accessory FAAC CITIES - For basic system with 8 FAAC CITIES

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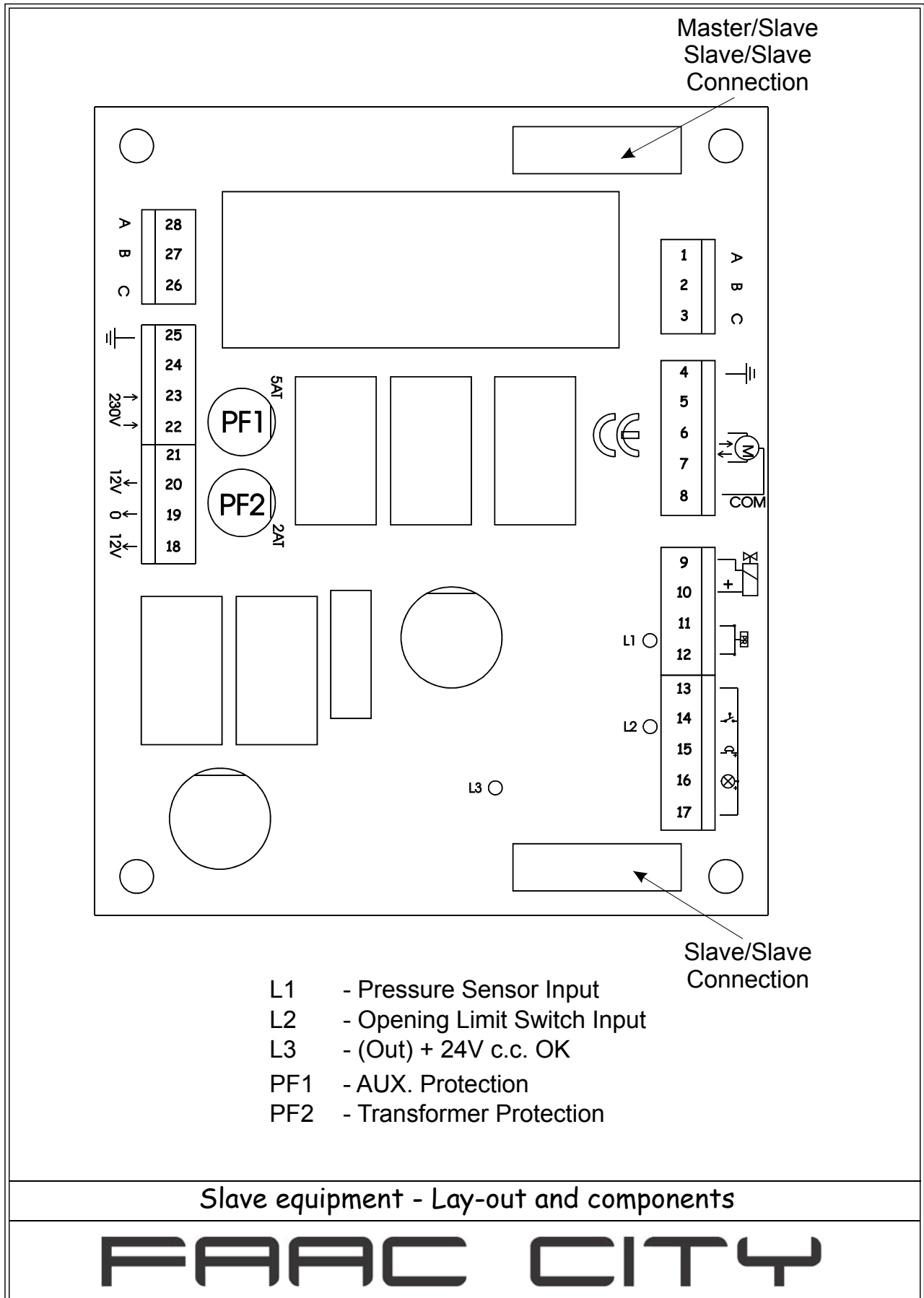
LAY-OUT OF FAAC CITY MASTER AND FAAC CITY SLAVE EQUIPMENT

Lay-outs of the Master and Slave equipment follow, with an indication of the function of the signalling LEDs and of the protective fuses.



- L1 - Pressure Sensor Input
- L2 - Opening Limit Switch Input
- L3 - Out Acoustic Bollard
- L4 - Out Bollard (mobile)
- L5 - Out Bollard (fix)
- L6 - Out Closed (up)
- L7 - Out Solenoid Valve
- L8 - Out Opened (down)
- L9 - Out Running
- L10- Out Green Traffic Lights
- L11- (Out) + 12V d.c. OK
- L12- (Out) + 24V d.c. OK
- L13- Start Input
- L14- Detector Input

- PF1- Transformer Protection
- PF2- Clock Protection
- PF3- Traffic Lights Protection
- PF4- Solenoid Valve Protection
- PF5- Aux Protection
- PF6- Aux Protection 24V

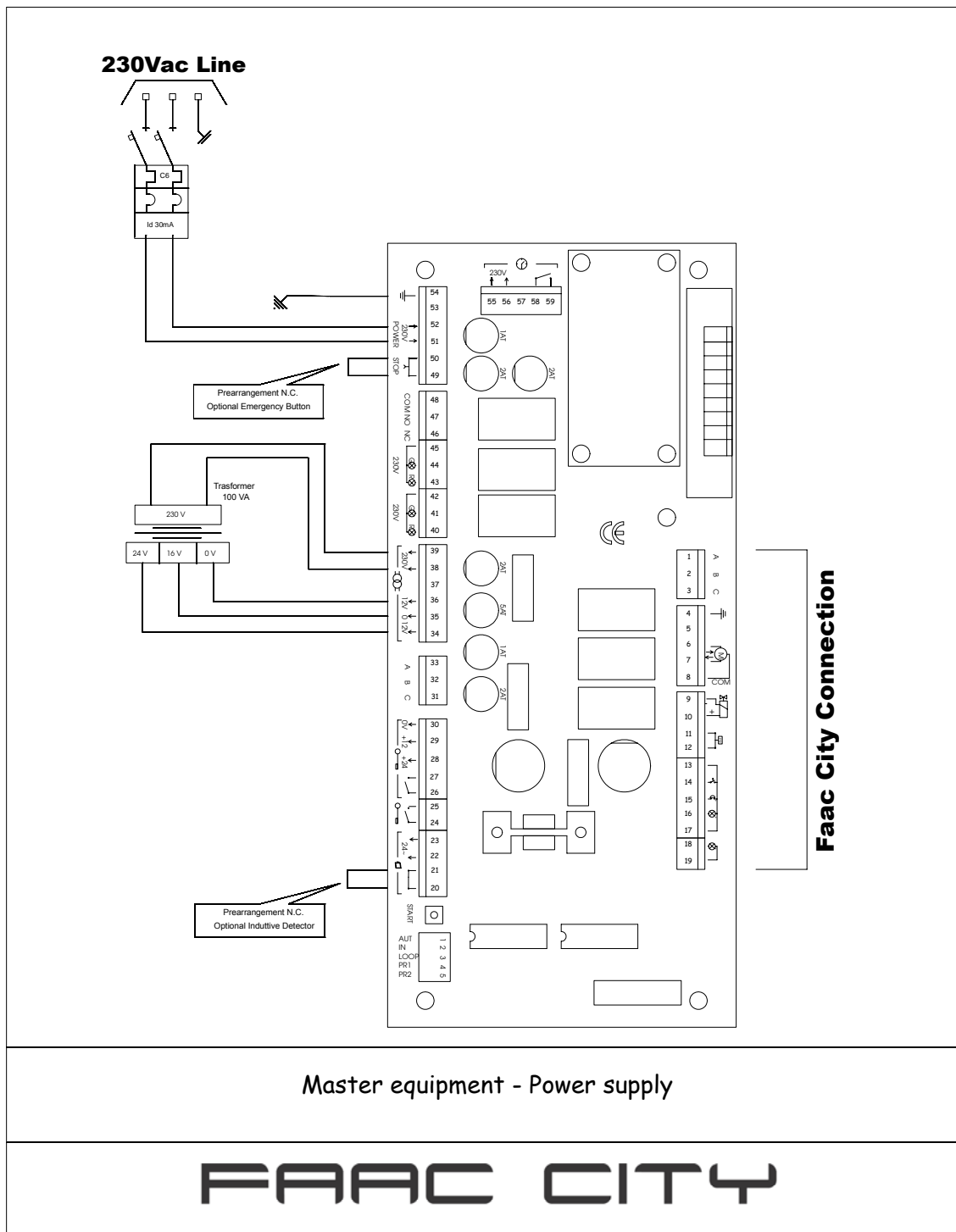


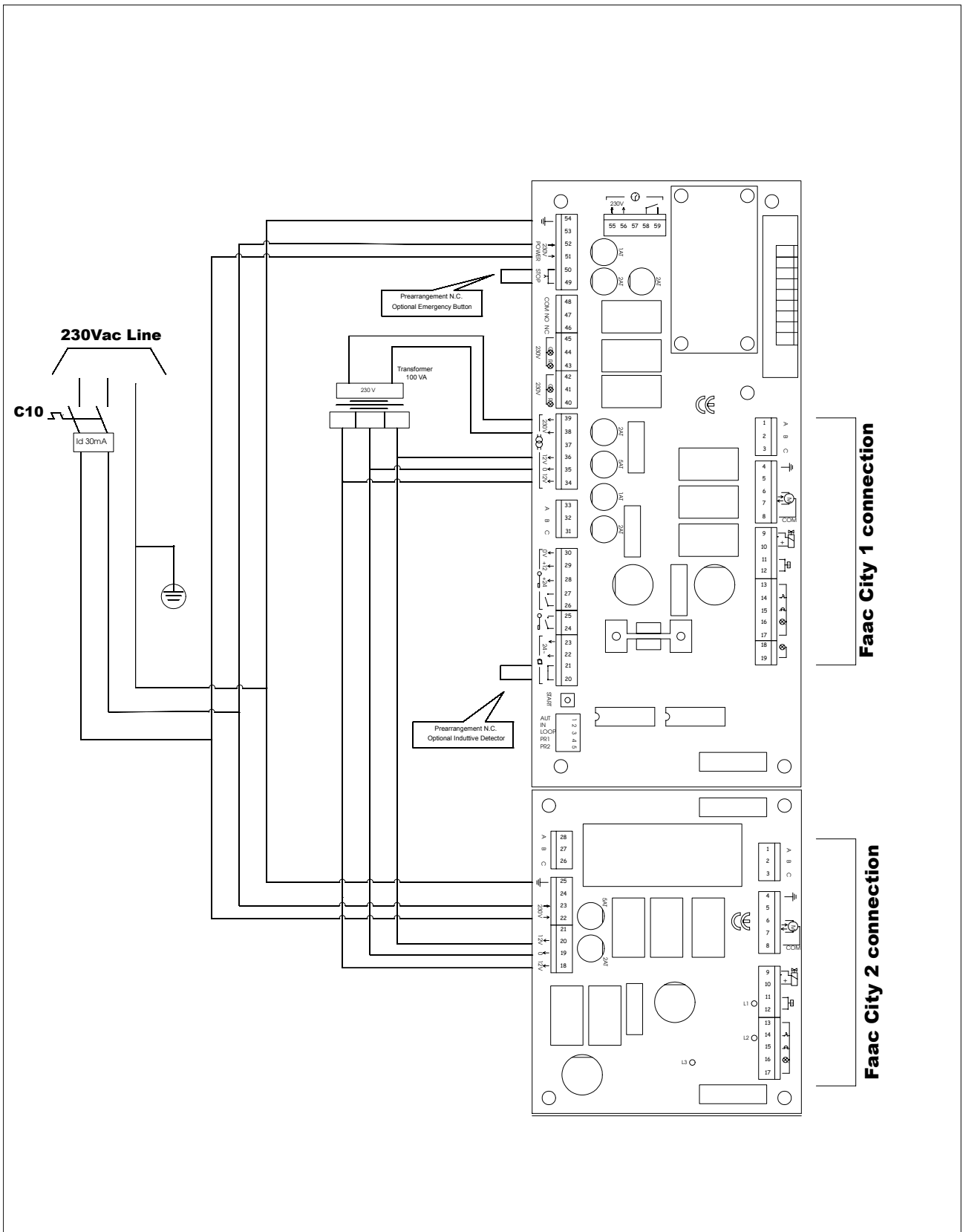
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POWER SUPPLY FOR FAAC CITY MASTER AND FAAC CITY SLAVE EQUIPMENT

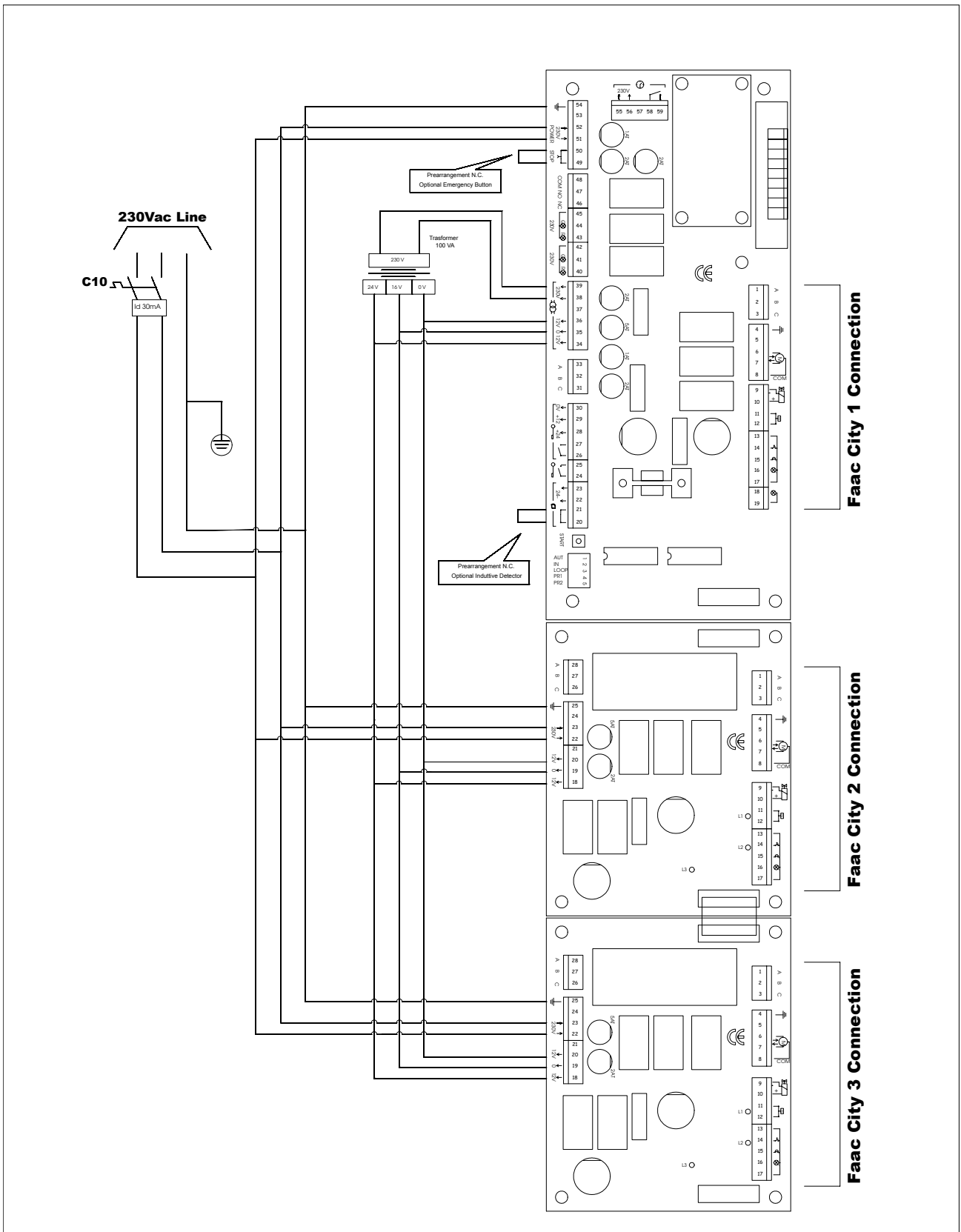
The following are lay-outs of power supply connection to the Master board and to the Master board with one or more Slaves connected in cascade mode. The transformers are usually connected in the factory.

Note: FAAC Cities connected to the Slave boards perform the same movements of the FAAC City connected to the Master board. If it is necessary to have different movements performed by various bollards, a Master board for every type of movement to be controlled must be installed.





Master and Slave equipment - Power supply

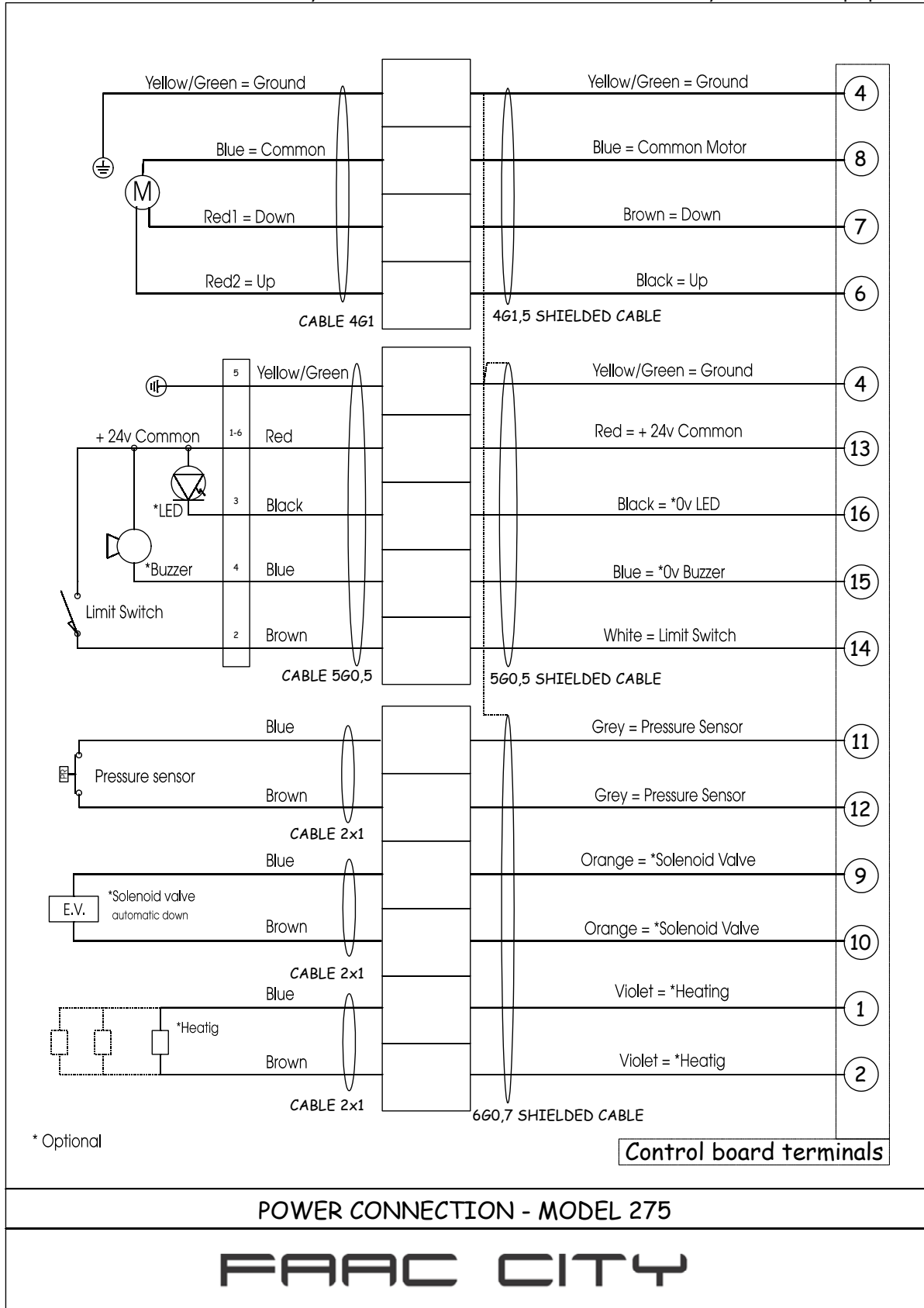


Master and 2 Slave equipment - Power supply

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CONNECTION: BOLLARD TO CONTROL UNIT

The following lay-out shows the colours of the wires of the connection cable supplied with the bollard, and how they are connected to the FAAC City Master equipment.





FUNCTIONS OF DIP-SWITCHES OF FAAC CITY MASTER EQUIPMENT

Dip-switch No. 1 on the FAAC City Master board enables you to select the system's function logic (automatic or semi-automatic).

Dip-switches 2, 3, 4, and 5 were fitted to facilitate diagnostic operations during repair/maintenance of the systems.

In fact, if faults occur, instead of disconnecting the wires from the terminal boards, you can exclude part of the circuits by suitably positioning the dip-switches.

DIP-SWITCH IN OFF POSITION	DS No	DIP-SWITCH IN ON POSITION
AUTOMATIC RISE ENABLED	1	AUTOMATIC RISE DISABLED
CONTROLS ENABLED	2	CONTROLS DISABLED
SAFETY DEVICES ENABLED	3	SAFETY DEVICES DISABLED
RISE TRAVEL-LIMIT PRESSURE SWITCH ENABLED	4	RISE TRAVEL-LIMIT PRESSURE SWITCH DISABLED
REVERSING PRESSURE SWITCH ENABLED	5	REVERSING PRESSURE SWITCH DISABLED

DIP – SWITCH 1

position to be defined depending on the system's use and configuration (if the safety devices are not used, it **must be** positioned to ON):

- **OFF Position = AUTOMATIC RISE ENABLED:** a bollard, which is normally in high position, moves to low position following a command. When the vehicle has transited through the controlled gate (and therefore trips and releases the safety devices), the bollard returns to its high position. If the vehicle does not transit, the bollard automatically returns to high position after 30". If the opening command is maintained, the bollard stays in low position until release (timer function).
- **ON Position = AUTOMATIC RISE DISABLED:** following a first command, the bollard moves from high position to low position. Following another command, it returns to high position .



DIP – SWITCH 2

Default position: OFF

- **OFF Position = CONTROLS ENABLED:** the bollard movement controls connected to terminals 24/25 – 26/27 – 58/59 are in operation.
- **ON Position = CONTROLS DISABLED:** the bollard movement controls connected to terminals 24/25 – 26/27 – 58/59 are disabled. If the FAAC CITY bollard does not rise, you may temporarily disable the external control devices and use the push-button on the board (START) to carry out the test.

DIP – SWITCH 3:

Default position: OFF

- **OFF Position = SAFETY DEVICES ENABLED:** the inputs for the safety devices (terminals 20/21) are enabled. If no safety devices are installed, jumper connect terminals 20 and 21 to each other.
- **ON Position = SAFETY DEVICES DISABLED:** the input for the safety devices (terminals 20/21) is disabled. If the FAAC CITY bollard does not rise, you may temporarily disable the safety devices to check if they are to blame for the fault.

Note: for the installation of metal mass detection devices, consult the bollard instructions and those for the individual devices.

DIP – SWITCH 4:

Default position: OFF

- **OFF Position = TRAVEL LIMIT RISE PRESSURE SWITCH ENABLED:** during the final lifting stage, the pressure switch symbol is used as a rise limit-switch.
- **ON Position = TRAVEL LIMIT RISE PRESSURE SWITCH DISABLED:** the function described above is disabled. The rise command is maintained during time out (it cannot be modified)



DIP – SWITCH 5:

Default position OFF

- **OFF Position = REVERSING PRESSURE SWITCH ENABLED:** during the lifting stage, if a weight of over 50 Kg is detected, this trips the pressure switch, which is used as a safety device to stop the bollard and return it to its low position.
- **ON Position = REVERSING PRESSURE SWITCH DISABLED:** the function described above is disabled. If the FAAC CITY bollard does not rise or, if during the rise stage, the bollard re-descends for no apparent reason, you may temporarily exclude this function to check if the pressure switch is to blame for the fault.



MASTER BOARD CONNECTION TERMINAL BOARD

Terminals 1-2-3= passing connection to 33-32-31 with protective fuse

Terminals 4-5-6-7-8 = connection for hydraulic power pack

Terminals 9-10 = Connection for automatic lowering device in the event of a 230V power cut

Terminals 11-12 = connection to safety pressure switch

Terminal 13 = common contact for limit-switch - buzzer - flashing light

Terminal 14 = connection to FAAC CITY low limit-switch

Terminal 15 = connection for FAAC CITY intermittent buzzer

Terminal 16 = connection for flashing light incorporated into the head of FAAC CITY

Terminal 17 = common contact for limit-switch - buzzer - flashing light

Terminals 18-19 = connection for flashing lighted sign (24 Vac intermittent output)

Terminals 20-21-22-23 = connection for safety inductive detector

Terminals 24-25 = lowering command input

Terminals 26-27-28-29-30= connection for lowering command device

Terminals 31-32-33= passing connection to 3-2-1 with protective fuse

Terminals 34-35-36-37-38-39= connection for service transformer

Terminals 40-41-42 = 230V connection to 'traffic lights' 1

Terminals 43-44-45 = 230V connection to 'traffic lights' 2

Terminals 46-47-48= 'traffic lights' remote repetition (freed contact)

Terminals 49-50 = connection for emergency lowering push-button

Terminals 51-52= 230V connection to electronic circuit

Terminal 53 = not used

Terminal 54 = earth connection

Terminals 55-56-57-58-59 = connection for weekly/annual clock



SLAVE BOARD CONNECTION TERMINAL BOARD

Terminals 1-2-3= passing connection to 28-27-26 with protective fuse
Terminals 4-5-6-7-8 = connection for hydraulic power pack
Terminals 9-10 = connection for automatic lowering in the event of a 230V power cut
Terminals 11-12 = connection to safety pressure switch
Terminal 13 = common contact for limit-switch - buzzer - FAAC CITY flashing light
Terminal 14 = connection to FAAC CITY low limit-switch
Terminal 15 = connection for FAAC CITY intermittent buzzer
Terminal 16 = connection for flashing light incorporated into the head of FAAC CITY
Terminal 17 = common contact for limit-switch - buzzer - FAAC CITY flashing light
Terminals 18-19-20 = connection to service transformer
Terminal 21 = not used
Terminals 22-23= 230V connection to electronic circuit
Terminal 24 = not used
Terminal 25 = earth connection
Terminals 26-27-28= passing connection to 3-2-1 with (protective fuse)

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Distributor's Stamp:

The descriptions and illustrations contained in the present manual are not binding. FAAC reserves the right, whilst leaving the main features of the equipments unaltered, to undertake any modifications it holds necessary for either technical or commercial reasons, at any time and without revising the present publication.