



RETRACTABLE BOLLARD
PILOMAT 275/P 500 A
PILOMAT PARK 275/P 500 A

TECHNICAL INSTRUCTIONS

WARNINGS FOR THE INSTALLER – GENERAL SAFETY OBLIGATIONS

1	ATTENTION! It is very important for the safety of people to follow all instructions strictly. A wrong installation or use of the product could cause serious damage to people.	17	Each automatic installation should have at least one lighting device (i.e: flashing lights integrated in the crosshead of the bollard) and a signal placard, along with the device quoted at point "16"
2	<u>Read carefully this manual</u> before starting installation and save it for future reference.	18	In each automatic installation the installer must consider and install appropriate safety devices.
3	Packaging materials (i.e. plastic, polystyrene, etc.) must be out of children's reach, because potentially dangerous.	19	For maintenance works use only original parts supplied by Pilomat srl.
4	This product has been designed and manufactured exclusively on the purpose indicated in this manual. Any different use not here indicated could damage the integrity of the product and/or be potentially dangerous.	20	Pilomat S.r.l. is not responsible for safety and good functioning of the product, in case of use of components not manufactured or distributed by Pilomat S.r.l.
5	Pilomat S.r.l. is not responsible for any damage caused by improper or different use from the indicated one.	21	Do not apply any modification to the parts composing the automated product PILOMAT.
6	Do not install the device in an explosive area: Using Inflammable gases could be not safe.	22	The installer must provide the Customer with all information related to the manual release of the automatic bollard in case of emergency and give the User a warning manual attached to the product.
7	Installation must be according to the local Laws.	23	Do not allow children or others to stop close to the bollard during operation.
8	In order to have an adequate safety level in the extra-CEE countries, in addition to the national laws, the above mentioned laws must be followed.	24	Keep remote controls or other impulse-giving devices out of children's reach, in order to avoid involuntary activation.
9	Pilomat S.r.l. is not responsible if someone does not observe the correct method of installation of the PILOMAT products and related devices, included deformations coming during the use.	25	Thoroughfare over the Pilomat bollard allowed only at complete lowering of the bollard.
10	Before any actions on the automatic installations take power off.	26	Semiautomatic bollards are not advisable for multiple installation (two or more) on main streets where the frequent passage of vehicles over the lowered bollards can break the lock block and make the bollard lifting without control.
11	An Omni polar switch should be foreseen on the alimentation's net of automatic installations. Its connections should have an opening range of 3 mm. A magnetothermal differential with 6A Omni polar switch is advisable	27	The User must avoid any repairing actions or direct operations on the bollard, and must address to qualified and authorized personnel only.
12	Assure that a differential switch with 0,03° is present at the beginning of the automatic installation.	28	Do not waste exhausted batteries in the garbage, but dispose them in the apposite containers to allow recycling. Disposal costs have already been paid by the manufacturer
13	The main electrical alimentation of the control unit of automatic installations must be connected directly to at the beginning of the apposite principal switch set inside the control unit; use anti-flame cables approved by at least one of the European Institutes. The dimension of the first alimentation line must be minimum 3x2,5mm, but evaluated by the installer according to the number of PILOMAT (400W each PILOMAT) and the distance from the output point in order to guarantee a correct alimentation (230V +/- 10% for moving PILOMAT).	29	The product is packaged on Euro pallet; use pallets' movers or shunters for movement; handle with care.
14	Test that the earthing is workmanlike and connect the metallic parts.	30	The product has been manufactured with IP 56 protection's level, and could therefore be stored everywhere; storage in internal or covered places is anyway preferable.
15	The automatic installations include a standard safety device: an inversion pressure switch in case of at least 40 kg of load. It is anyway necessary to test the activation level every six months, according to what laws establish.	31	The product does not require availability of spare parts; Pilomat's warehouse can send by express any needed spare parts.
16	Safety devices (Law EN 12978) allow protection of potentially dangerous areas where activities such as squashing, conveyance, shearing are possible to occur.	32	In case of maintenance and/or reparation, Pay attention not to give improper raising signals; to avoid any problems, disconnect the bollard's moving by the switch set inside the control management station.
		33	Everything not mentioned in this manual is not allowed.



PRODUCER COMPLIANCE DECLARATION:

89/392/CEE - 91/44/CEE - 93/44/CEE - 93/68/CEE

Producer: PILOMAT S.r.l.

Address: Via Zanica 17/P Grassobbio (BG – ITALY)

We state under our exclusive responsibility that the product

**RETRACTABLE BOLLARD PILOMAT PASS - mod. 275/P-500 A
LINE NUMBER:**

which this declaration refers to, is in compliance with the following specifications:

- Safety of the machine, main concepts, main concepts of planning
Technical specifications and concepts - EN 292 Part 2^ - November 1992
- Safety of the machine, electric equipment of the machine -
Part 1: General rules - EN 60204-1 - October 1997
- Electromagnetic compliance. General rules for immunity – Residential and commercial Sites
and of industry - EN 61000-6-1 - Edit. 2001
- Electromagnetic compliance. General rules for emissions - Residential and commercial Sites
and of light industry - EN 61000-6-3 - Edit. 2001.

as per Rules: 73/23/CEE, 89/392/CEE, 91/368/CEE, 93/44/CEE, 93/68/CEE, 89/336/CEE

Grassobbio (BG – ITALY)

Technical Manager
Sergio P.i. Toffetti

A handwritten signature in black ink, appearing to read 'Sergio P.i. Toffetti'.

TECHNICAL DATASHEET OF HYDRAULIC PILOMAT 275/P 500A

Drive	hydraulic
Driven cylinder	Steel FE 37* ¹ – thickness 6 mm.
Treatment undergone by driven cylinder	Polyester powder painting- color grey anthracite* ²
Driven cylinder diameter	275mm.
Driven cylinder run	600mm.
Cylinder top (head)	Anticorodal cemented alluminium
Treatment undergone by cylinder top	Polyester powder painting- color light grey
Raising speed	10cm/s (PARK version: 20 cm/sec)
Lowering speed	10cm/s (PARK version: 50 cm/sec)
Hydraulic pump	230v Alimentation +/-10%-50Hz
Protection class	IP 67
Capacitor for pump	12 µ F ÷ 16 µ F
Electrical input	400W at 230V
Work frequency – resistance class	Intensive use > 2.000.000 10.000 daily movings
Refractive adhesive band	Standard height 56 mm
Work temperature	-15°C +70°C * ³
Overall weight with pit	208 kg
Manual lowering	Yes* ⁴
Resistance to impact (without permanent damage)	20.000 Joules
Resistance to impact (with permanent damage)	250.000 Joules
Dimensions of pit to be walled	560x560x870H
Standard cable length	10 mt * ⁵

*1 optional: stainless steel AISI 304 thick. 6mm

*2 optional: personalized spray painting with RAL color

*3 optional: heating devices for temperature up to -25°C

*4 optional: automatic lowering in case of black-out

*5 optional: on request cable length 50mt – 30 mt if *3

AUTOMATIC PILOMAT PASS , 275/P – 500 INSTALLATION

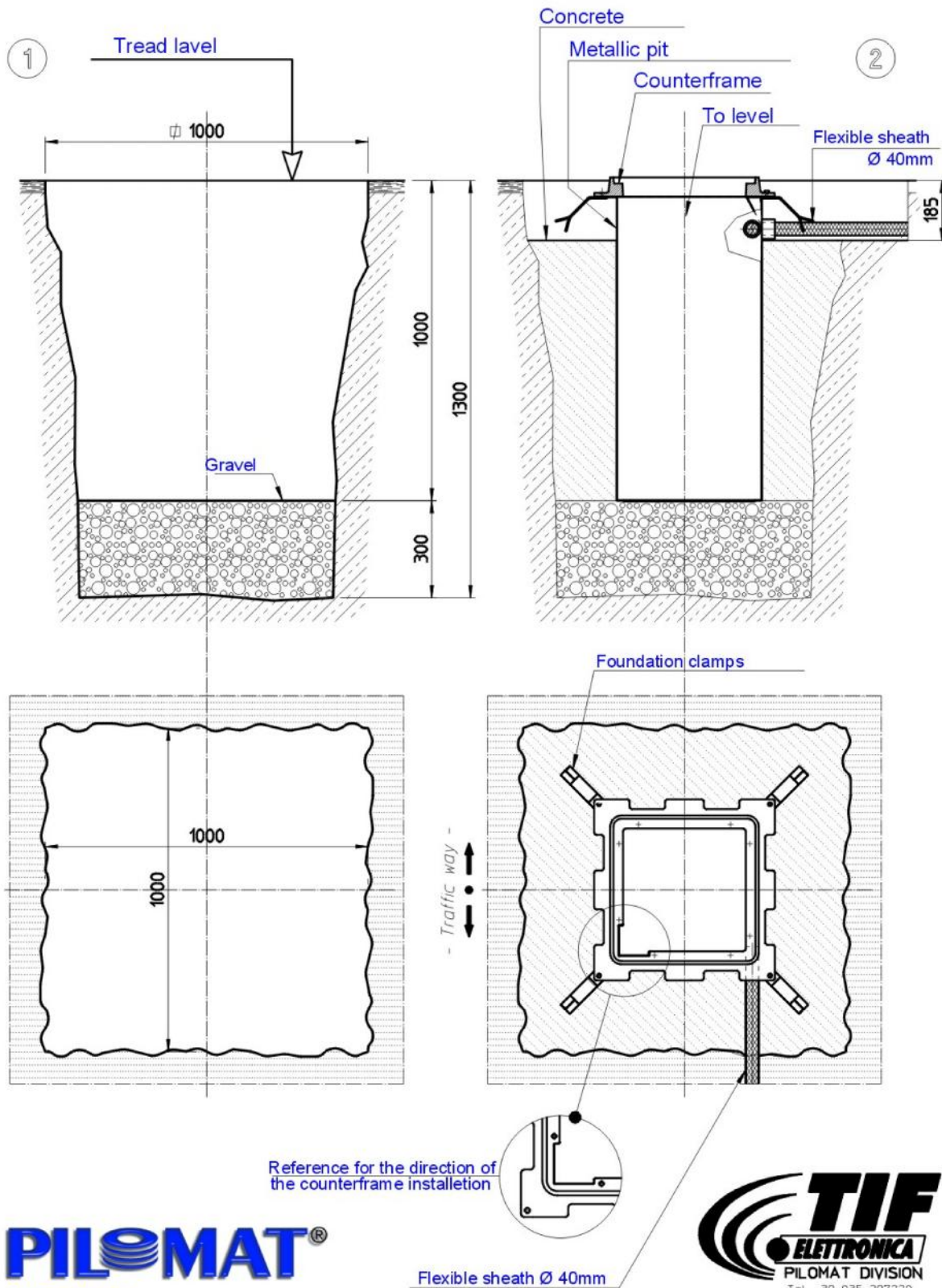
SEQUENCE WITH METALLIC PIT

- 1) Ensure that the laying point of the PILOMAT® PASS does not fall within an impluvium area; in cases when, no matter why, this circumstance occurs, you need to partially shelter the PILOMAT PASS® by means of a draining channel, equipped with covering grid.
- 2) Dig a hole (using a miniature excavator or your hands) down to 1,30 m in depth approx. A sector side shall be 1 m. approx.
- 3) Ensure that the ground features a good water absorption (try by introducing about 40 litres of water and rate that the drain takes place in less than 30 minutes); otherwise, drain rain water through a pipe that is 60 mm in diameter connected to the sewer or, as an alternative, connected to a pit (equipped with a pumpdown system, such as, for instance, an electric pump) being deeper than the cement pipe that collects and drains rain water).
- 4) Introduce gravel (grain 8 to 20 mm. in diameter approx.) until a thickness of 30 cm approx. is reached, taking care to compress it well to avoid eventual “settling shrinkages”.
- 5) Lay on the gravel the metallic pit compleat with counterframe, paying attention that it has to be parallel to a plumb line and that the upper level of the counterframe should be about 1 cm above the walking level (in order to reduce the flowing in of raining water). Further on, please pay attention on the counterframe setting considering the traffic direction (see drawing enclosed).
- 6) Lay a flexible sheath with minimum diameter 40 mm that goes from the electrical connection foreseen in metallic pit to the installation point of the management station (for the electrical connection of the bollard).
- 7) Introduce concrete all around the metallic pit thus made until its top is reached (about –10 cm from the walking level): Please pay attention that the special clamps delivered with the counterframe are well placed. Once the metallic pit is laid, carry out the finish work using the same material as the road course that is found all around the counterframe.
- 8) Lay all the other pipes (if any) from the management station laying point to the additional equipment laying point (e.g. traffic lights spiders – inductive coils – card readers, etc..), carry out the electrical hook-up and grounding work.

Note: all the pipelines shall be laid in full compliance with the regulations in force.

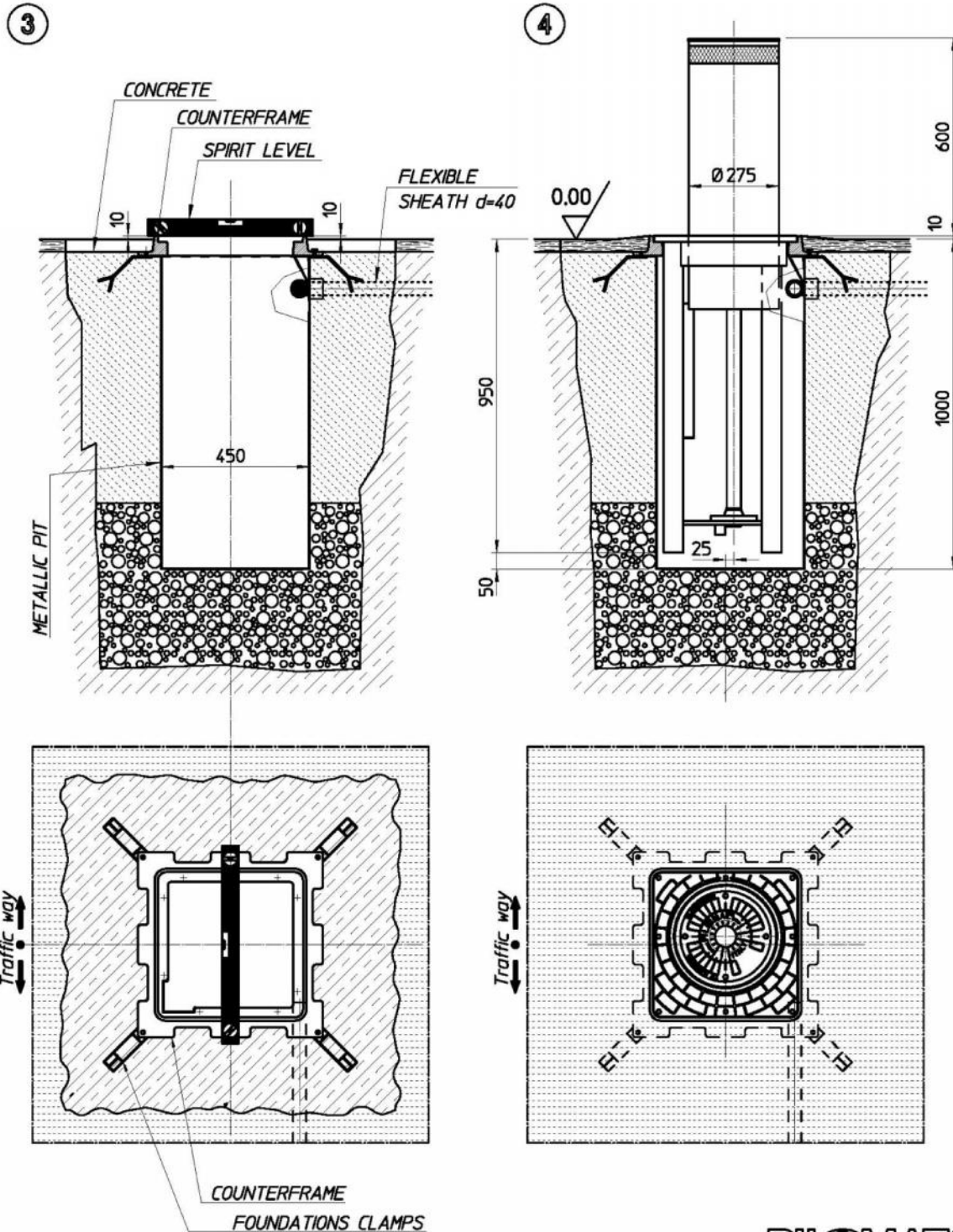
Pilomat® Pass - automatic bollard 275/P - stroke = 500 - 600

Installation plan with the metallic pit



PILOMAT PASS - AUTOMATIC BOLLAR - STROKE = 600
INSTALLATION PLAN WITH THE METALLIC PIT

DIS. P275_SC07_ING



PILOMAT®

Via Zanica, 17/P - 24050 Grassobbio (BG)
 Tel. 035 297220 - Fax 035 297094

P275_sc03_ing

PILOMAT

Flexible sheath $\varnothing 100\text{mm}$

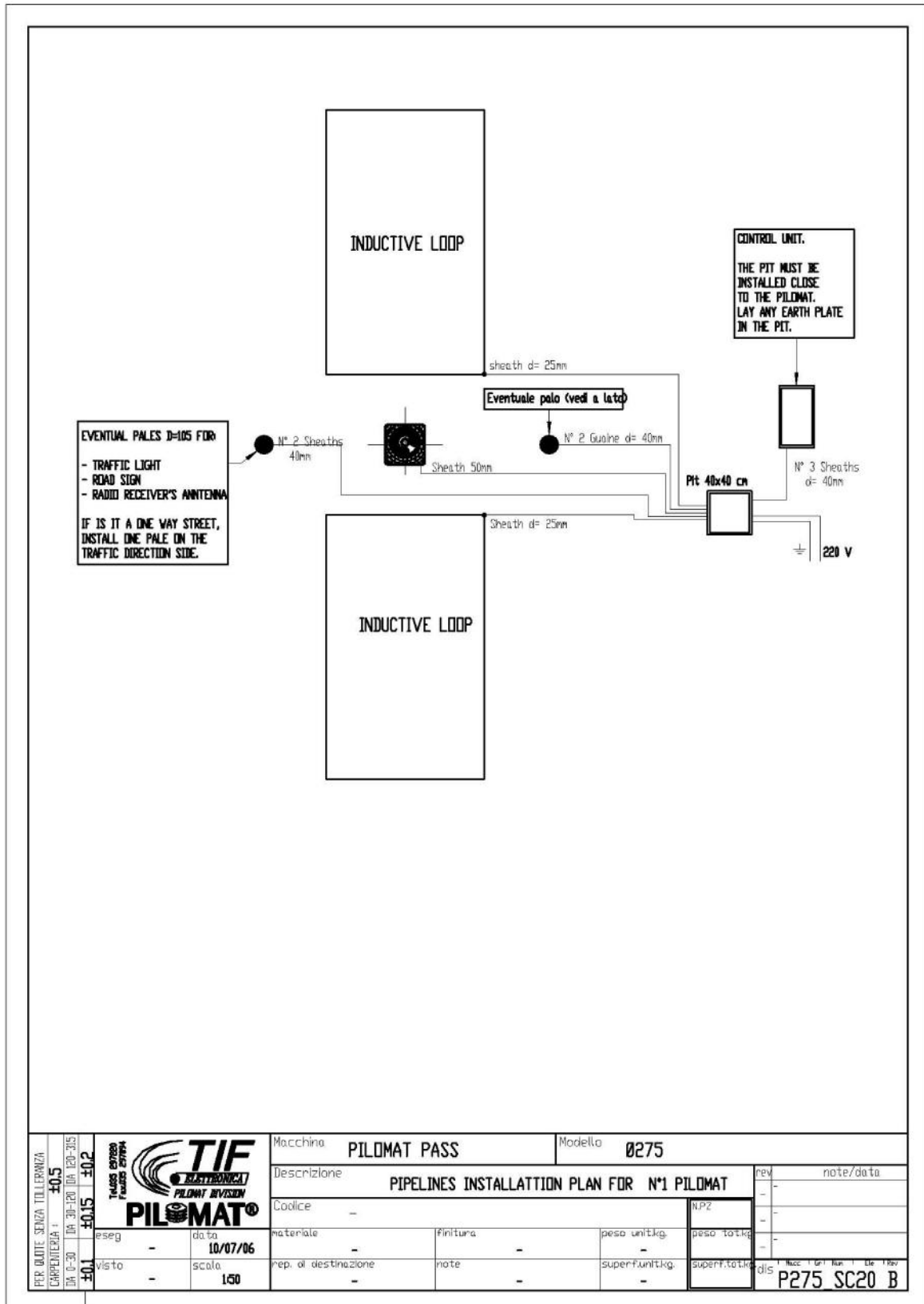
Movement
 control unit

Pilomat® Pass
 Instruction for multi

Cod. Fisc



PER QUOTE SCELTA TOLLERANZA CARATTERISTICA : ±0.5 DA 0-30 DA 30-120 DA 120-305				Macchina PILOMAT PASS		Modello 0275	
		PILOMAT®		Descrizione PIPELINES INSTALLATION PLAN FOR 1 PILOMAT		rev. note/data	
				Codice -		NP2	
eseg. - data 14/10/05		materiale -		finitura -		peso unit.kg. -	
visto - scala 1:50		rep. di destinazione -		note -		peso tot.kg. -	
				superfinit.kg. -		superf.tot.kg. -	
						dis. P275 SC20 A	



NOTES ON INSTALLING THE MAGNETIC LOOP WITH A 9 m CABLE

If using the automatic PILOMAT® PASS pop-up roadblock, two inductive magnetic loops must be created to detect metal weights (cars), one in front of and another behind the roadblock. The standard dimensions of these loops is: width 1.80 m - length 3.00 m.

Other sizes are possible if the case warrants this.

The loop is connected to a line that transmits the signal to the movement control station. This consists of a special insensitive cable to be laid in a conduit with a 20-25 mm diameter.

The loop needs to be placed 5-7 cm below the road surface. If there is any porphyrite or similar, the blocks of porphyrite must be lowered to allow for the loop to be laid at this depth. Alternatively, the loop can be laid between one block and another with a fret pattern.

The loop is created by using a special electric cable with a diameter of approximately 9 mm and suitable protection, laid directly in the ground without the need for conduits.

When laying the loop, it's necessary to check that there are no electrowelded metal meshes nearby. If this is the case, it's essential that the mesh is at least 25 cm below the loop (otherwise, a 30 cm section of the mesh below the loop must be removed).

WALL CASE FOR PILOMAT CONTROL STATIONS

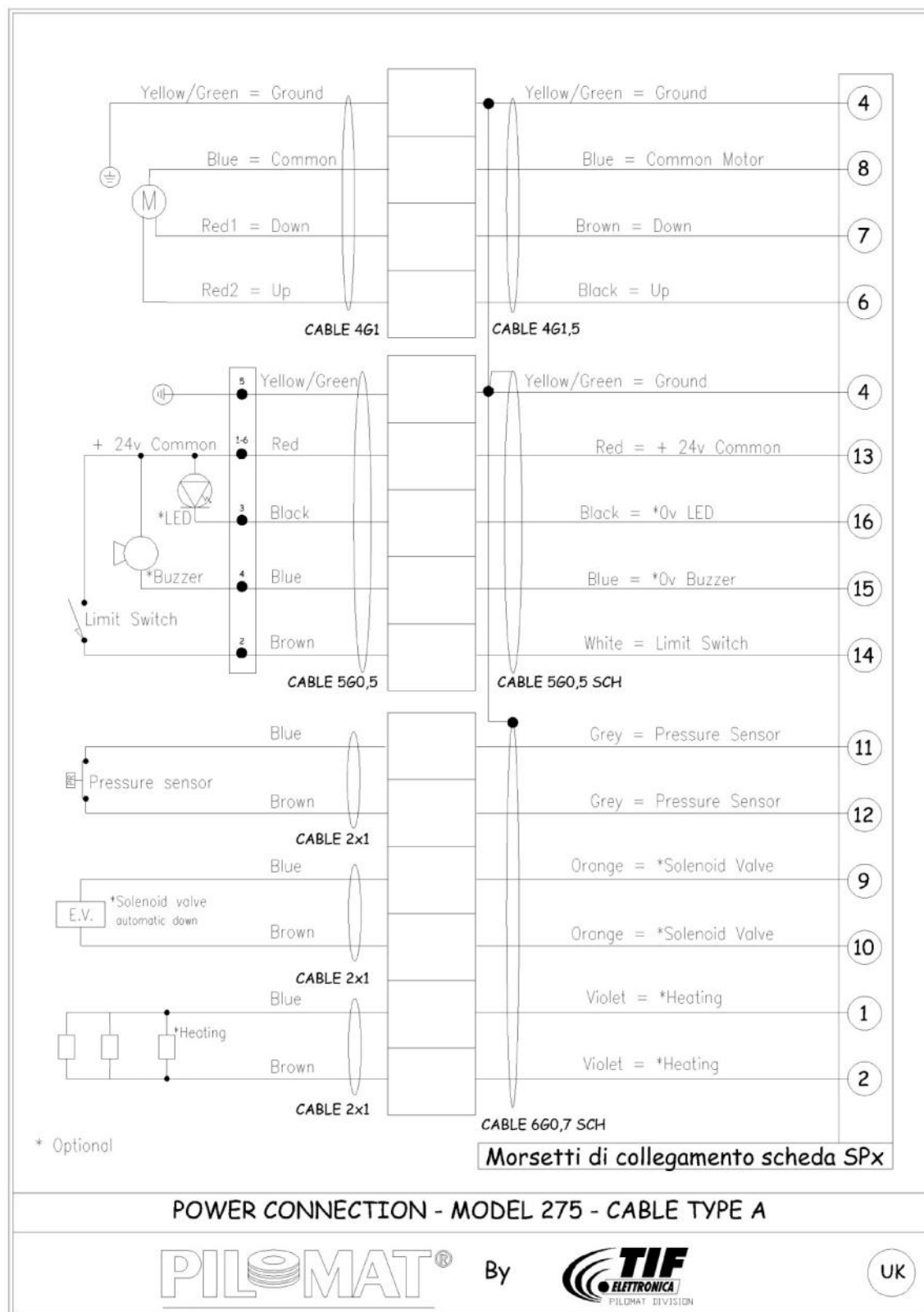
Dimensions L x H x P	Material	System configuration
WALL MOUNTED 320 X 400 X 160	GW PLAST 120° C	- For basic system with 1 PILOMAT unit.
WALL MOUNTED 400 x 480 x 160	GW PLAST 120° C	- For system with accessories featuring 1 PILOMAT. - For basic system with 2 PILOMAT units.
WALL MOUNTED 400 X 600 X 200	STEEL FE37	- For system with accessories featuring 3 PILOMAT units. - For basic system featuring 5 PILOMAT units.
WALL MOUNTED 500 X 700 X 260	STEEL FE37	- For system with accessories featuring 5 PILOMAT units. - For basic system featuring 8 PILOMAT units.
COLOMN 320 X 950 X 280	POLYESTER	- For system with accessories featuring 2 PILOMAT units. - For basic system featuring 3 PILOMAT units.

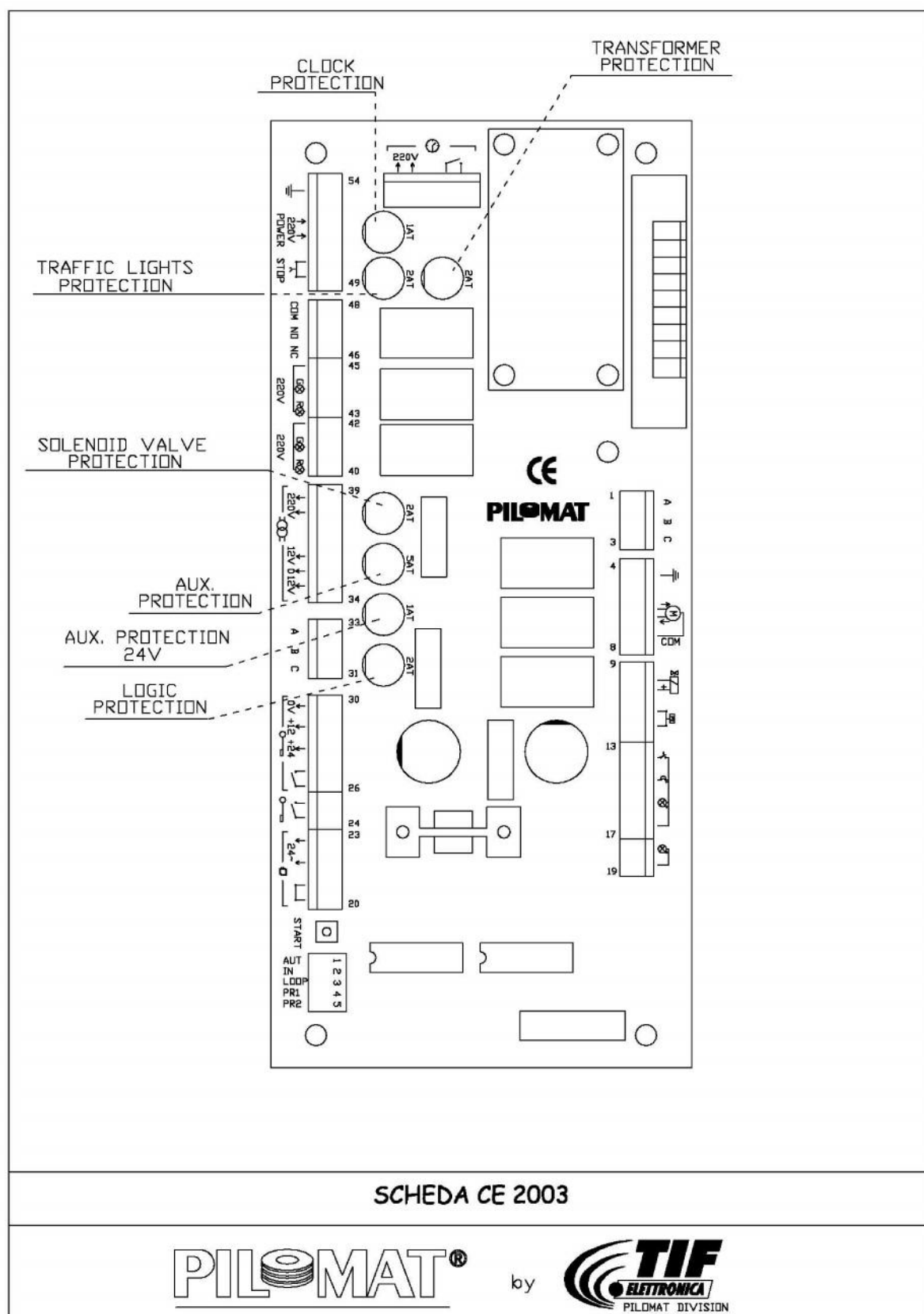
TECHNICAL DATASHEET OF SP CONTROL STATION

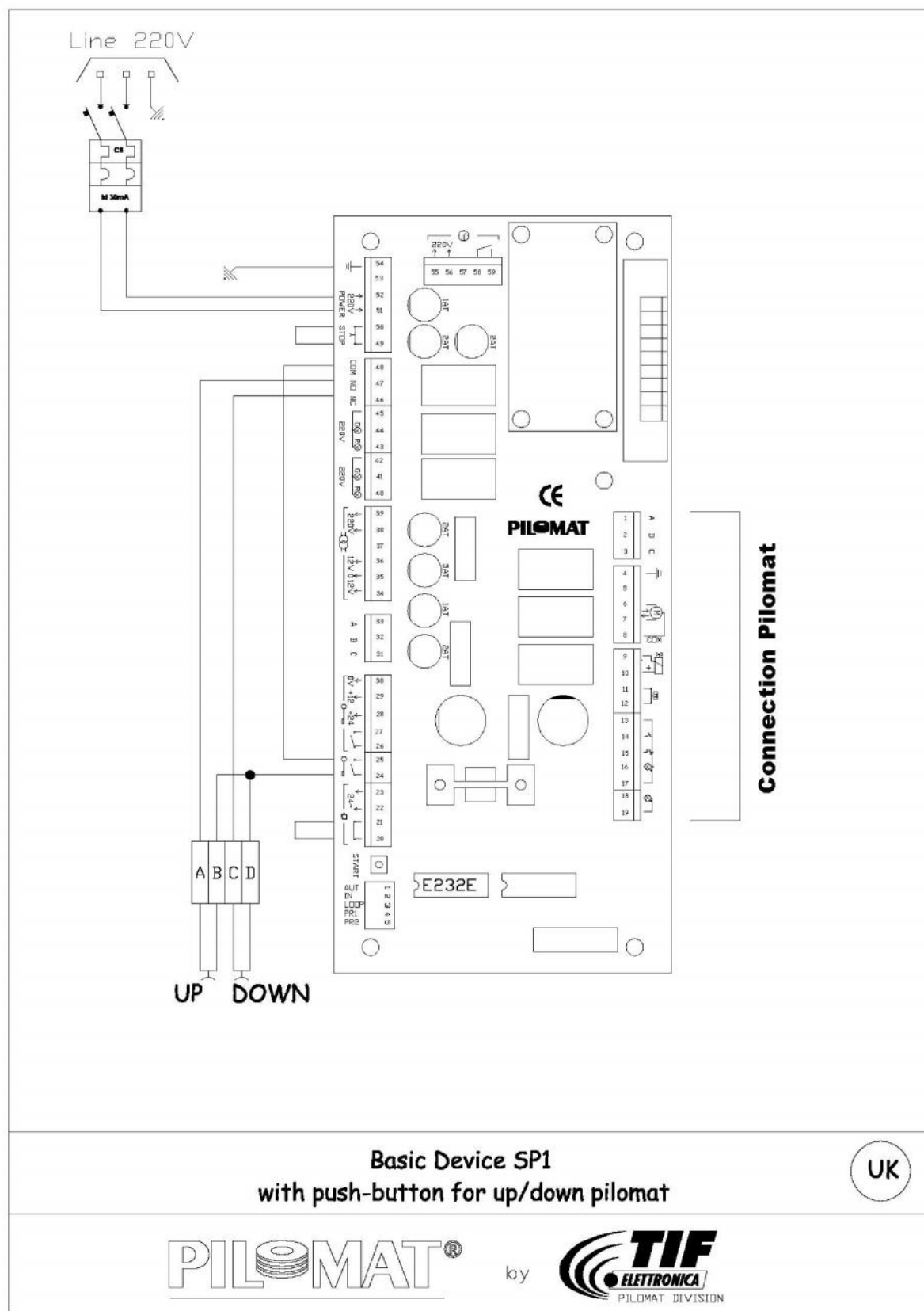
Electronic control circuit	Micro-processor-operated, with dedicated software that manages the PILOMAT units
SP control station case	Wall-mounted
Case size	See attached table
Protection class	Not less than IP55
Work temperatures	-15°C + 70°C
Control station power supply	230V. $\pm$ 10% - 50Hz
Protection cut-off	Differential thermo magnetic switch 1P + N – 6 A □ 16 A – 30 mA – 6 KA
Service transformer	24V. – Standard power 100 VA
Maximum number of PILOMAT units to be connected to the control station	Max. 10 PILOMAT units featuring simultaneous movement – The 1st PILOMAT unit is connected to the master unit – the others are connected to additional slave units – the size of the container is a function of the number of PILOMAT units

INSTALLATIONS SEQUENCE PILOMAT PASS 275/P









PILOMAT ELECTRONIC CIRCUIT DIP-SWITCH FUNCTIONALITIES **Item PIL 03**

FOREWORD: the DIP-SWITCHES that are found on the PILOMAT electronic circuit board are useful to the technicians for a quick diagnostic during maintenance/repair work of the PILOMAT® systems.

Indeed, in the event of failures, instead of disconnecting the wires from the terminal strips, it proves to be more functional to cut out a part of the circuits through a proper positioning of the DIP-SWITCHES -

DIP-SWITCH IN THE OFF POSITION		DIP-SWITCH IN THE ON POSITION
AUTOMATIC LIFTING ENABLED	1	AUTOMATIC LIFTING INHIBITED
DRIVES ENABLED	2	DRIVES INHIBITED
SAFETY DEVICES ENABLED	3	SAFETY DEVICES INHIBITED
LIFTING LIMIT STOP ENABLED	4	LIFTING LIMIT STOP PRESSURE SWITCH INHIBITED
REVERSAL PRESSURE SWITCH ENABLED	5	REVERSAL PRESSURE SWITCH INHIBITED

DIP – SWITCH 1:

Position yet to be defined as a function of the specific need and configuration of the system (if the safety devices are not used, it **MUST** be positioned on ON) –

- **Position OFF = AUTOMATIC LIFT ENABLED:** the no-parking column is normally set to be in the high position – after the actuation of the drive, it reaches the low position – when the vehicle has crossed the controlled passage (hence it engages and then disengages the safety devices), the no-parking column moves the high position– if the vehicle does not cross the passage, the no-parking column moves back to the high position automatically after 30” –
- **Position ON = AUTOMATIC LIFT INHIBITED:** the no-parking lift, after actuating the drive for the first time, moves from high to low – then after a further actuation it moves back to the top position –

DIP-SWITCH 4:

normally in the OFF position –

- **Position OFF = LIFTING LIMIT STOP-PRESSURE SWITCH ENABLED:** at the final lifting stage, the signal emitted by the pressure switch is used as upper limit stop to end the lifting stage -
- **Position ON = LIFTING LIMIT STOP-PRESSURE SWITCH INHIBITED:** The above function is inhibited; the lifting stop occurs by timeout (the timeout delay may change as a function of the installed EPROM memory installed in the electronic managing circuit)-

DIP-SWITCH 5:

normally in the OFF position –

- **Position OFF = REVERSAL PRESSURE SWITCH ENABLED:** during the lifting stage, in the event of a weight exceeding 50 kg. being detected, the pressure switch signal is used as a safety device to stop the column and lead it back to the “low” position -
- **Position ON= REVERSAL PRESSURE SWITCH INHIBITED:** the function described above is inhibited – if the PILOMAT® column does not rise or during the rising stage it moves back with no apparent reason, the technician, on intervening, may temporarily inhibit this function to check whether the cause of the failure is to be ascribed to the pressure switch –

PIL-03 MASTER CIRCUIT CONNECTION TERMINAL BOARD

Terminal 1-2-3= available (feedthrough with 31-32-33 – with protection fuse) –
Terminal 4-5-6-7-8= hydraulic pump connection –
Terminal 9-10= automatic lowering connection for lack of 220v –
Terminal 11-12= safety pressure switch connection –
Terminal 13= common wire for limit switch – buzzer –PILOMAT flasher –
Terminal 14= low PILOMAT limit switch connection –
Terminal 15= PILOMAT intermittent buzzer connection –
Terminal 16= flasher incorporated in the PILOMAT head connection –
Terminal 17= common wire for limit switch – buzzer –PILOMAT flasher –
Terminal 18-19= flashing luminous sign connection–
Terminal 20-21-22-23= safety magnetic turns inductive detector –
Terminal 24-25= input for lowering drive –
Terminal 26-27-28-29-30= rx radio / reader for lowering drive connection –
Terminal 31-32-33= available (feedthrough with 1-2-3 with protection fuse)
Terminal 34-35-36-37-38-39= service transformer connection –
Terminal 40-41-42= connection 220v. traffic lights 1 –
Terminal 43-44-45= connection 220v. traffic lights 2 –
Terminal 46-47-48= remote repetition of traffic lights (neutral switching contact) -
Terminal 49-50= glass broken emergency pushbutton –
Terminal 51-52= 220v. connection to electronic circuit –
Terminal 53= not used –
Terminal 54= ground connection –
Terminal 55-56-57-58-59= weekly/yearly clock connection –

INSTRUCTIONS TO SET AND REPAIR THE SYSTEM

The PILOMAT bollard has been designed with high reliability criteria and if regular six-monthly maintenance is executed, no further set up is to be done.

However light impacts of vehicles on the bollard could cause a higher friction during the movement.

In this case what follows could be necessary :

- **Set up of the raising force of the bollard:** you need to take the bollard out of the pit, install the test- pressure switch and verify the pressure on duty (standard 12 BAR); set the screw (in red) on the hydraulic pump up to a max. level of 15 BAR – to make the pressure increase, turn the screw in clockwise.
- **Set up of the pressure switch reversal:** the bollard contains a pressure switch which is ON during raising of the bollard ; in case of rush increase of the pressure of minimum 40 Kg (weight of a pedestrian or a vehicle staying on the top of the bollard) the bollard will suddenly stop and lower. In order to increase or decrease the sensibility of the pressure switch, you need to take the bollard out of the pit, lay a sample 40 Kg weight on the top of the bollard and make sure the pressure switch is working by giving a raising command; if a set up is needed, set the screw on the pressure switch: - to increase sensibility, turn it in counterclockwise – to decrease the sensibility turn in clockwise.

ORDINARY ROUTINE MAINTENANCE PROCEDURE FOR PILOMAT® PASS 275
MOVABLE POP-UP ELEMENT:

The standard routine maintenance sequence is as follows:

- Cleaning of pit with suction of all material settlements –
- Cleaning of water drains located on the pit bottom -
- Cleaning and greasing of the central sliding rail –
- Testing (and replacement, if needed) of the lower beat gaskets –
- Testing and repair (if required) of the handling piston for oil leaks–
- General testing of the pop-up element's screws for correct tightening –
- General cleaning of the driven cylinder and painting touch-ups, if needed -
- Testing of the hydraulic station, top-up of oil level and checks over working pressure settings –
- Testing and possibly setting of safety pressure switch for proper operation (40 Kg.) –

MOREOVER, IF THE FOLLOWING ITEMS ARE IN THE SYSTEM, PERFORM THE
FOLLOWING CHECKS AND TESTS:

- Test the flashlight that is incorporated in the element's head for proper operation –
- Operating test of traffic-lights lanterns –
- Operating test of inductive safety turns –
- Check over the power failure procedure for proper operation –
- Operating test over the control radio receiver –
- Operating test of the emergency lowering sound analyser –
- Operating test of the remote control GSM effector-

Sight check of the electronic handling management unit (e.g. : “flooded” relay contacts – oxidized clamps – etc.)

