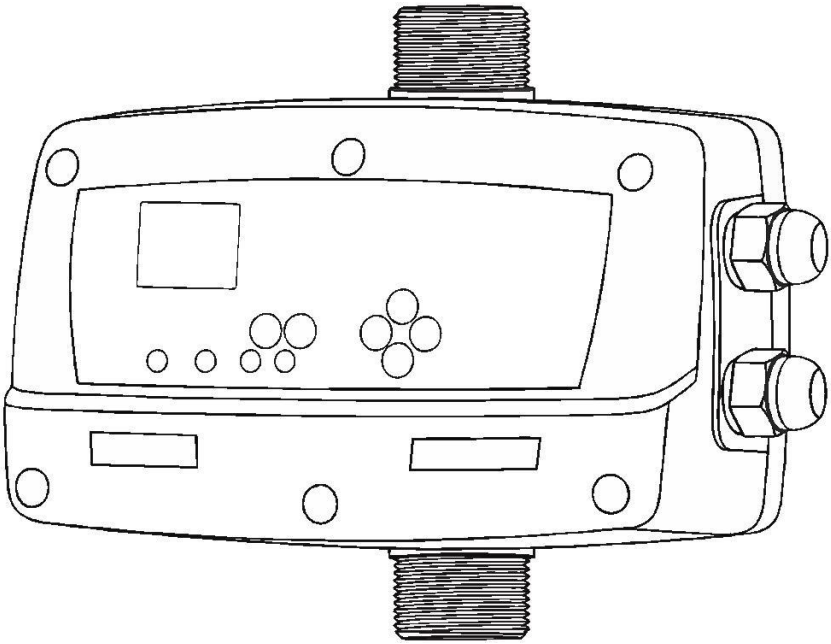
EN INSTALLATION AND OPERATING INSTRUCTIONS



CE

09MM
12MM
14MM
06MT
10MT

Speedmatic Easy

WARRANTY AND RECOMMENDATIONS

The product "Speedmatic Easy" is guaranteed the first 2 years after its production date.
This guarantee does not include damages in case of an inadequate installation or manipulation.
Read carefully this instructions manual before installation.
Do not throw away this manual afer installation, it can be usefull for later modifications or for solving the different types of alarms.
Hydraulic and electrical installations must be set up by qualified personnel according to the safety prescriptions as well as the standards and legislation of every country.When carrying out the electrical connection it is recommended to use a differential switch of high sensitivity: $I_{\Delta n}$ = 30 mA (clase A o AC). It is recommended to use a magnetothermic switch of 16A in Easy 09MM/12MM and of 20A in Easy 06MT/10MT. It is recommended to use an independent electrical line, with the purpose of avoiding electromagnetic interferences that could create nonwished alterations in household electronic devices.
The device must operate with a clean water flow, if there is risk of presence of gravel or small particles (facilities with submersible pumps) is recommended to use a filter to avoid the possibility of blocking the flow sensor.
Speedmatic should be used only for vehiculation of clean water, it cannot be used for transport of another kind of liquids.
It is recommended to use an expansion tank in order to avoid continuous start–stops due to the deterioration of taps, valves, ... and also to prevent "water hammer" in installations with valves of wide diameter.
WARNING, before doing any maintenance inside the device, it must be unplugged from the electric supply and wait a minimum of 2 minutes after the disconnection to avoid electrical discharges.

INSTRUCTIONS FOR DELIVERY, TRANSPORT, RECEPTION AND STORAGE

Speedmatic must be inspected at the time of dispatch and reception in order to check if it has suffered a damaged or they are missing parts.
Transportation must be done carefully and by competent personnel.
Avoid significant impacts.

These instructions are for storage periods under 12 months from the date of shipment. If longer, please request instructions for long storage. Must be stored in a protected place, away from shocks and moisture. Avoid stacked devices.

Transportation and handling equipment must be carried out with adequate means to bear the weight that usually will be shown on the packing list.

INSTALLATION AND OPERATING INSTRUCTIONS (8 ... 11)

1. OPERATION.
2. CLASSIFICATION AND TYPE.
3. MAIN CHARACTERISTICS.
4. TECHNICALCHARACTERISTICS.
5. HYDRAULIC CONNECTIONS.
6. ELECTRIC CONNECTION.
7. CONTROLPANEL.
8. START UP (plug& play).
9. CONFIGURATION.
10. REGISTEROFOPERATIONDATA ANDALARMS.
11. "CE" STAMENTOFCOMPLIANCE.
12. ALARMS.

Warning symbols contained in this service manual



Risk by electric shock.



Risk for people and/or objects.

Class C2

Fig. 1. BODY CONNECTIONS

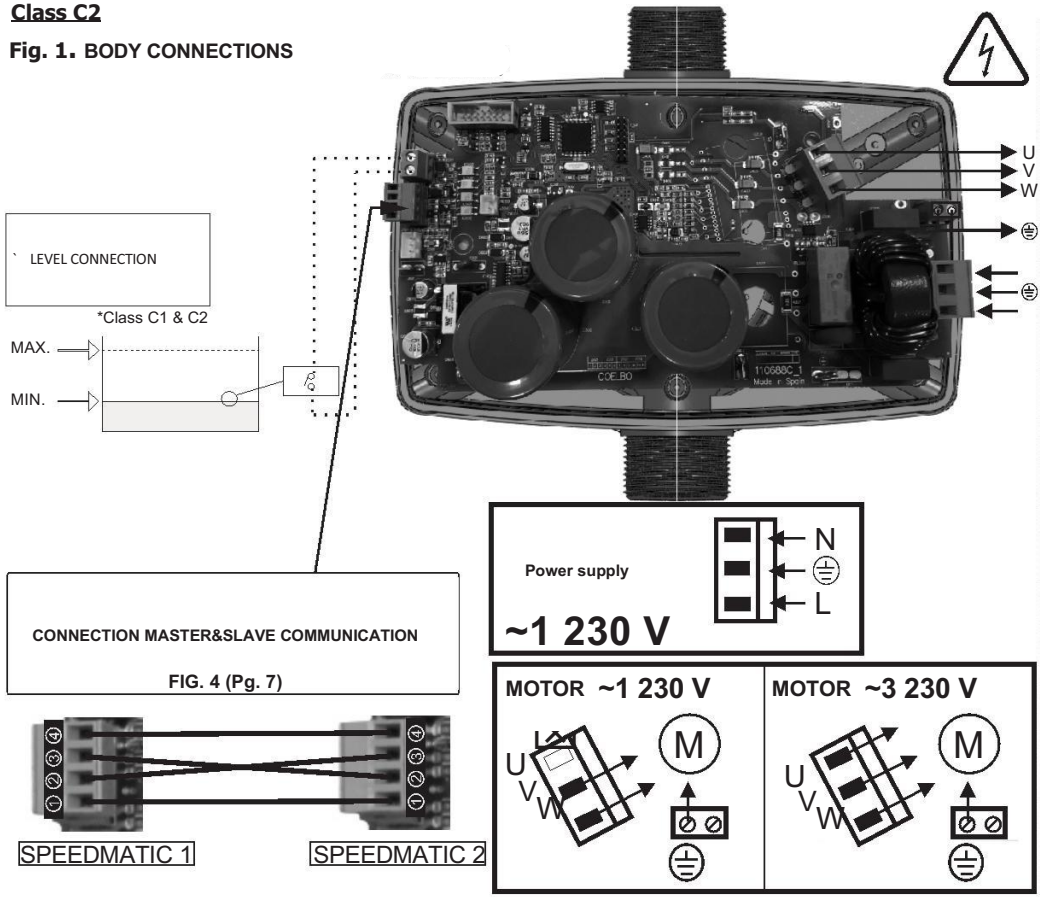
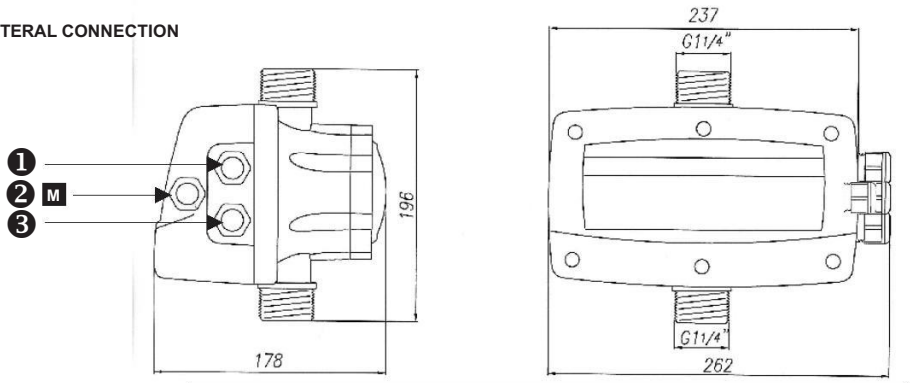


Fig. 2

LATERAL CONNECTION



L (m)	S (mm²)
1 ÷ 5	1
5 ÷ 25	2.5
25 ÷ 50	4

1 Pump
2 Minimal level
M Master&Slave communications cable
3 Power supply

Class C1

Fig. 3 BODY CONNECTIONS

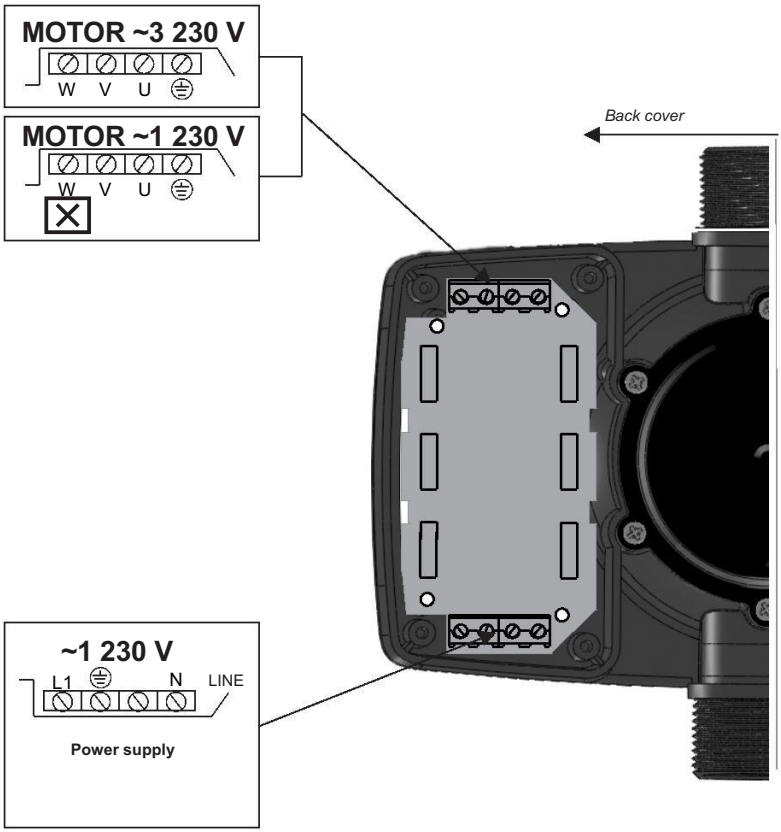
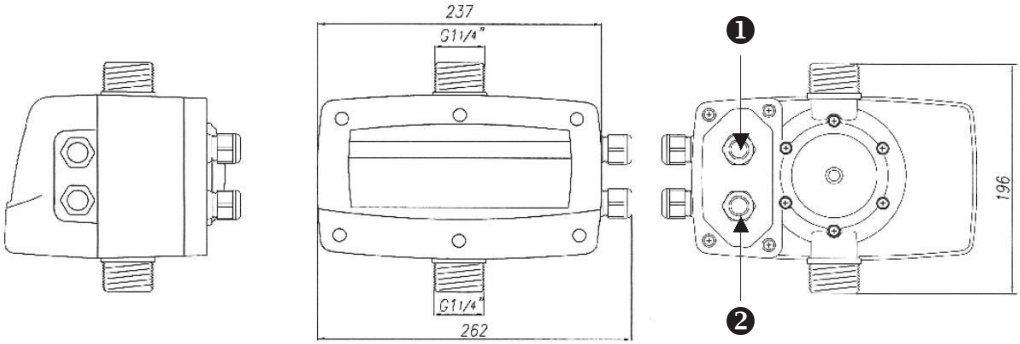


Fig. 4 LATERAL CONNECTION



1 Pump

2 Power supply

L (m)	S (mm²)
1 ÷ 5	1
5 ÷ 25	2.5
25 ÷ 50	4

INSTALLATION SCHEME

OBSERVATIONS:

A) Accessories ❸, ❹, ❺ and ❽ are recommendable but not essential.

B) In the case of the expansion tank ❼, its use in facilities is recommended when it is tried to avoid the water hammer.

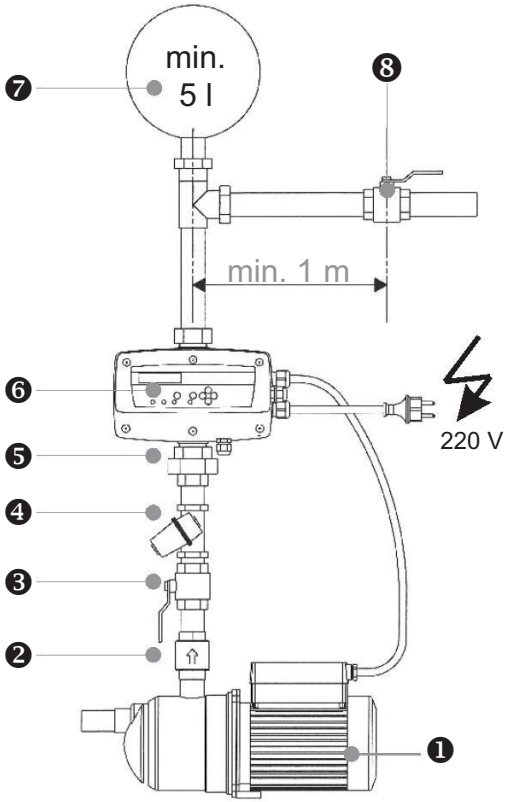


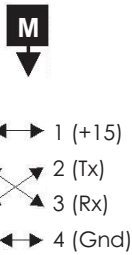
Fig. 5

❶.- Pump
❷.- Check valve
❸.- Ball valve
❹.- Filter
❺.- Quick release coupling
❻.- Speedmatic.
❼.- Expansion tank
❽.- Ball valve

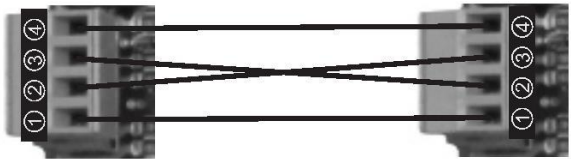
Fig.4 CONNECTION MASTER&SLAVE COMMUNICATION

EN

1. Unscrew the cover and loosen the PG located on its basis.
2. Insert the communications cord through the PG.
3. Remove the connector from its housing.
4. Set up the connection following the schema 4.
5. Relocate the connectors on its housing. Screw the cover and the PG.



SPEEDMATIC 1 SPEEDMATIC 2



SPEEDMATIC 1		SPEEDMATIC 2
1 (BLUE/BLU/AZUL/BLAU)	↔	1 (BLUE/BLU/AZUL/BLAU)
2 (BROWN/MARRONE/MARRÓN/BRAUN)	✕	2 (GREY/GRIGIO/GRIS/GRAU)
3 (GREY/GRIGIO/GRIS/GRAU)	✕	3 (BROWN/MARRONE/MARRÓN/BRAUN)
4 (BLACK/NERO/NEGRO/SCHWARZ)	↔	4 (BLACK/NERO/NEGRO/SCHWARZ)

BEFORE INSTALLATION AND USE READ THE FOLLOWING INSTRUCTIONS CAREFULLY. THE MANUFACTURER DECLINES ALL RESPONSABILITY IN THE EVENT OF ACCIDENT OR DAMAGE DUE TO NEGLIGENCE OR FAILURE TO OBSERVE THE INSTRUCTIONS DESCRIBED IN THIS MANUAL OR IN CONDITIONSTHATDIFFERFROM THOSEINDICATEDONTHEDEVICE.TECHNICALMODIFICATIONSRESERVED

1. OPERATION.

Is a compact automatic control device designed for the single-phase or three-phase pump´s (depending on model) automation, with an electronic system managed by a software responding to the rigorous requirements of efficiency and safety of the most important builders of pumps. It includes a frequency inverter that regulates the speed of the pump in order to keep constant the pressure independently of the flow given.

The system incorporates a LCD screen where the parameters configuration is very easy and intuitive. Once the configuration parameters are introduced, the device manages the start-up of the pump and the frequency inverter. It assures a constant pressure and an important costs reduction because at any time the control will feed the system with the right and necessary output, obtaining a maximum energetic efficiency. In order to establish the ideal pressure in the installation is suitable to consider following criteria:

Hm: Max. water column height in m. It depends on the number of floors and it corresponds to the height from the pump to the last floor. Every 10 m of height corresponds approximately to 1 bar (0.98) bar.

Pw: Available minimum pressure in last floor (usually 1.5 bar).

Pc: Pressure drop. It can be considered with a simplified criteria as 0.033 bar/m.

Prmin: Minimum resultant pressure. It is the sum of the previous pressures and it will be the operating pressure of the pump.

Example for a 5 floors building (15 m) with pump placed at level 0:

Hm =15 m ≅ 1.5 bar **Pw** = 1,5 bar **Pc**=15 x 0,033 bar ≅ 0,5 bar **Prmin** = 1,5 + 1,5 + 0,5 = 3,5 bar

M→ MASTER AND SLAVE OPERATION

The group MASTER-SLAVE is constituted by a device configured as SPEEDMATIC MASTER - responsible of the group´s control - and a SPEEDMATIC configured as SLAVE controlled by the master device.

Due to the alternating sequence of operation, the SPEEDMATIC configured as MASTER began the first cycle as MAIN device - its pump is the first to start - but in the next cycle it becomes SECONDARY - its pump is the second to start - and so on. Therefore, the fact that a device is configured as MASTER involves control of the group but this fact does not avoid its work alternately as SECONDARY device.

2. CLASSIFICATION AND TYPE.

According to EN-60730-1 this product is a device of independent assembly, type 1B with software of class A. Control circuit for alternating current motor with power factor cosφ ≥ 0,6. Pollution Degree 2. Rated impulse voltage: 2500V/CATII. Class of disconnection 1Y (electronic disconnection).

3. MAIN CHARACTERISTICS.

- DN inlet port G1 1/4 ” male ISO 228.
- DN outlet port G1 1/4 ” male ISO 228.
- Frequency inverter for the pump control.
- Control and safety system against over-intensities.
- Control and safety system against dry operation.
- **ART** function (Automatic Reset Test). If the device has been stopped due to the action of the safety system against over-intensities, the **ART** tries to connect the pump, with a programmed periodicity because the water supply could have been restored
- Automatic restore system after an interruption of power supply. System is activated in AUTOMATIC mode keeping the configurationparameters (see "CONFIGURATION" chapter).
- Inside pressure transducer.
- Control panel (see chapter 7): 2 digits display, pushbuttons, led lights and digital gauge providing instantaneous lecture of pressure.
- Register of operational controls: infomation about operating hours, counter of starts, counter of connections to the power supply.
- Connections for detection of minimum water level in aspiration tank. This system is independent of the safety against dry operation. Is optional.
- Registerof alarms:informationabouttypeandnumberof alarms since the starting up of the device.

M→ ModeMASTER&SLAVE.Communicationwith anotherdeviceSPEEDMATICtowork ingroup.Optional.

4. TECHNICAL CHARACTERISTICS.

■ Type	EASY09MM	EASY12MM	EASY14MM	EASY06MT	EASY 10 MT
■ Power supplyvoltage	1x230~V±20%V	1x230~V±20%V	1x230~V±20%V	1x230~V±20%V	1x230~V±20%V
■ Frequency	50/60Hz 50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
■ Max.currenteachphase	9A (1x230~V)	12A (1x230~V)	14A (1x230~V)	6A (3x230~V)	10A (3x230~V)
■ Max. peak of current	20%during10"	20%during10"	20%during10"	20%during10"	20%during10"
■ Max.operatingpressure	15 bar	15 bar	15 bar	15 bar	15 bar
■ Max.setpressure	0.5÷8 bar	0.5÷8 bar	0.5÷8 bar	0.5÷8 bar	0.5÷8 bar
■ Protectionindex	IP55	IP55	IP55	Ip55	Ip55
■ Max.watertemperature	40ºC	40ºC	40ºC	40ºC	40ºC
■ Max.environmenttemperature	0-50ºC	0-50ºC	0-50ºC	0-50ºC	0-50ºC
■ Max.flow	10.000l/h	10.000l/h	10.000l/h	10.000l/h	10.000l/h

5.HYDRAULIC CONNECTIONS(fig. 2 and 3)

Before proceeding with hydraulic connection it is essential to install a non-return valve in the pump´s inlet.

The SPEEDMATIC Easymust be connected in vertical position (diag.3), the inlet port (G1 1/4" male) directly to the main pump discharge and the outlet port (G 1 1/4" male)atthemainnetwork.

It is compulsory to use an hydropneumatic tank in order to avoid continuous start-stops due to the deterioration of taps, valves, ... and also to prevent"waterhammer"ininstallationswith valves of widediameter.

6. ELECTRIC CONNECTION (fig. 1)

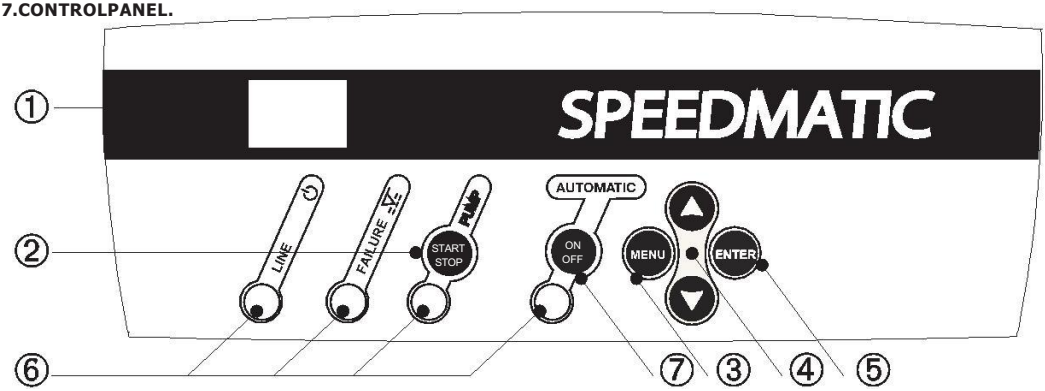
Before doing manipulations inside the device, it should be disconnected of the electric supply and after disabling, wait for 2 minutes in order to avoid electrical discharges.

- Use cablestypeH07RN-Fwith sectionenoughtothepower installed:
  - Power supply:s ≥ 1,5mm² (max.2,5mm²).
  - Motorsupply: s ≥ 1 mm² (max.2,5mm²)dependingonthecablelength(see fig.1).
- Verifyif thepower supply is 230 V. Dismount the back cover andcarryouttheconnectionsaccordingtotheindicationsof fig.1.
- Do the power supply connection (being sure there is a good earth connection): **N** ⏚ **L** Do the connectionby mean of magnetothermic switch in OFF mode.
- The earth conductor must be longer than the others. It will be the first one to be mounted during the assembly and the last one The earth conductor must be longer than the others. It will be the first one to be mounted during the assembly and the last one to disconnectduringdisassembling.
- Dothepumpconnection.
- Min.levelcontrol(optional).Thereisaninputfor stoppingthepumpassoonasisdisconnectedtheexternalswitch of minimumlevel.

M → Connection of 2 devices (optional): for the communication of 2 devices it will be used a cable of 4x0.25 mm², it will be inserted throw thePGcableglandlocatedinthebottom/lateralof thedevice.See pg4-5.

WARNING! Wrong connections could spoil the electronic circuit. The manufacturer declines all responsability in damages caused bywrongconnection.

7.CONTROLPANEL.



1 - **2-DIGIT DISPLAY** . In **AUTOMATIC** mode it shows instantaneous pressure (bar), instantaneous current comsumptions (A) and minimumspeed (Hz).

2 - **MANUAL START-STOP** pushbutton. It allows to start and stop manually the pump.

3 - Pushbutton **MENU** for enter or quit the menu.

4 - With these pushbuttons we can increase or dicrease programming values showed in the screen (1).

5 - **ENTER** for saving programmed values. Every pulsation is succeeded by a new field of the **CONFIGURATION MENU**. Whenever we want to quit the configuration sequence press **MENU** (3).

6 - Led lights:
- **LINE** green: Electric supply. Bright when it is connected.
- **FAILURE** red: Bright or flashing depending on type of failure.
- **PUMP** yellow: When it is bright means pump working. It is lit with the pump stopped or when the device is not connected.
- **AUTOMATIC** green: it is bright in AUTOMATIC mode. When it is intermittent in MASTER&SLAVE mode it means that this device will be auxiliary in the following cycle.

7 - Pushbutton **ON/OFF**: It allows to change from **AUTOMATIC** to **MANUAL** mode or vice versa.

8. START UP (plug&play).

- Besurethatthepumpiscorrectlyprimed
- Connect the SPEEDMATIC Easy to the electric supply with the magnetothermic switch, all the led lights will flash instantaneously for asecond.Screenwill show**SP** (setpressure)andthenits default value**2,0**bar,bothdisplaysarealternated intimeperiodsof 1"/5" .
- By meanof ▲▼ we canadjustthedesiredsetpressure.
- Press the push-button **AUTO**, the device will start to operate and led light **AUTO ON/OFF** will light. The screen will show the instantaneouspressure.Being inautomaticmodeandusingthepush-buttonswe canchangethedisplay:
  - P:instantaneouspressure(bar).
  - Fr:instantaneousspeed.
  - A:instantaneouscurrentconsumption.

9.CONFIGURATION.

Intheconfigurationmenuwe canadjusteither maximumcurrent(**A**)andminimumpumpspeed (**FL**). Nextstepsshoudbefollowed:

SP	1.Presspush-button**MENU** during3secondstostarttheconfigurationsequence.	MENU
A	2. Input the nominal intensity value in Amps using▲▼ enablingthethermalprotection. For Easy 09MM must be within 0 and 9 A, the default value is 9 A. For Easy 12MM must be within 0 and 12 A, the default value is 12 A. For Easy 06MT must be within 0 and 6 A, the default value is 6 A. For Easy 10MT must be within 0 and 10 A, the default value is 10 A. This value is located over the characteristics plate of the motor. Press **ENTER** for validation.	ENTER
RS	3. Using the**START/STOP** pushbuttonverifytherotationsense. By meanof keys ▲▼(0/1)we canchangeit. Press **ENTER** for validation.**MT typesonly.**	ENTER
FL	4. Using▲ canbeincreasedthelower limit of thespeed of rotation. The value must be within 30 and 35 Hz. Default value is 30 Hz. Presspush-button**ENTER**, for validationandquit thismenu.	ENTER
EL	5.If theinstallationdoes not have level probe press**ENTER** tovalidate0. If the installation has a level probe, use keys ▲▼to change 0 by 1.	ENTER
nF	6. The device is configured as **0-SINGLE** as default value. In case of group assembly (M-S), the Master device has to be configured as**1-MASTER** and the Slave as**2-SLAVE.** ENTERtovalidate.	ENTER
tA	7. In case **1-MASTER** is selected it can be ajusted a maximum time of continued functioning. After the configurated time (t.A) of a continued functioning an alternance will be forced. Value 00 means this parameter isdisabled.	ENTER
SP	8. System is ready. By meanof **AUTOON/OFF** quit themanualoperatingmode.	ON OFF

10. REGISTER OFOPERATIONDATA ANDALARMS.

By using simultaneously **MENU** + ▲ during 3" is acceded to **REGISTER OF OPERATION DATA AND ALARMS**, by mean of **ENTER** we can advance through the sequence, once finished the sequence we come back to the main display . This is all the sequence:



- REGISTER HOURS (HF). Counter of total time that the pump has been operating.
- REGISTER STARTS (CF). Number of cycles of operation, a cycle is a start and a stop.
- REGISTER SWITCH (Cr). Number of connections to the electric supply.
- ALARM COUNT DRY RUN (A1). Number of dry-running alarms.
- ALARM COUNT I MAX (A2). Number of overcurrent alarms.
- ALARM COUNT. DISCONNECTED PUMP (A3). Number of disconnected pump alarms.
- ALARM COUNT. TEMP (A6). Number of alarms by excessive temperature.
- ALARM COUNT. SHORTCIRCUIT (A7). Number of short circuit alarms.
- ALARM COUNT. OVERVOLTAGE (A8). Number of overvoltage alarms.
- ALARM COUNT. UNDERVOLTAGE (A9). Number of undervoltage alarms.

All the records are saved even if the device has been disconnected from the electric supply.

Note: For quantities with more than 2 figures they will appear in consecutive screens after each ENTER. For example, to indicate 10234 overcurrent alarms:



12. ALARMS .

Incase of simultaneous alarms, quit the automaticmode and go to manual mode, pressing the pushbutton **AUTOMATIC ON/OFF** (led light PUMP will turn off). Using key ▲▼will be displayed the succesive alarms. Once visualized, for leaving the menu, press **ENTER** returning to **MANUAL** mode.

A1 DRY RUNNING (✷ Failureverification ● Finalfailure)

DESCRIPTION: if the system detects dry running during more than 10 seconds, it will stop the pump and the ART (Automatic ResetTest) will beactivated.

SYSTEM REACTION: after 5 minutes ART system will start again the pump during 30 seconds, trying to restore the system. In case of persistent lack of water, it will try it again every 30 minutes for 24 hours. If after all these cycles , the system still detects lack of water, pump will remainpermanentlyoutof orderuntilthedamagewill berepaired.

SOLUTION: dry running, it has been activated the safety system: you should verify the feeding of the hydraulic network. The pumps can be primedusingthepush-buttonSTART/STOP(theledlightAUTOMATICshouldbeoff,if it isnot,pressthepush-buttontodisableit).

Special case: if the pump cannot provide the programmed pressure (configuration mistake) the Speedmatic Easy reacts as it was dry-running.

Special Case 2: this device manages the dry running control through the nominal current consumption of the pump. It must be verified the introduced current consumption in the setup menu (see paragraph 9).

A2OVER-INTENSITY(✷ Failureverification ● Finalfailure)

DESCRIPTION: the pump is protected against over currents by mean of the intensity values established in the installation menu. These over currentsareproducedgenerally bydysfunctionsinthepumpor intheelectricsupply.

SYSTEM REACTION: when detecting the thermal failure, the pump will be automatically stopped. The system will try again to restart the pump when the demand of consumption require it. The control system will carry out 4 attempts in this circumstances. If the system remain lockedafter the4thattempt,the pumpwill remaindefinitivelyoutof order.

SOLUTION: verify the state of the pump, for example the impeller could be blocked. Verify intensity values introduced in the configuration menu. Once the problem have been solved the operation will be restored going to the "SET UP" menu (see the chapter configuration) and configuringtheadequatedintensityvalues.

A3 DISCONNECTED P. (● Finalfailure)

DESCRIPTION:theSpeedmaticEasyhasanelectronicsafetysystem in case of noloaddetection.

SYSTEMREACTION:thedeviceisdisconnected..

SOLUTION: the wound of the motor and the pump consumption should be verified. Once the problem have been solved the operation will be restored going to the "SET UP" menu(see thechapterconfiguration)and introducingthe adequateintensityvalues.

A5TRANSDUCER(● Finalfailure)

DESCRIPTION:thetransducerdamagesareshowedinthe SpeedmaticEasy´s LCDscreen.

SYSTEMREACTION:thedeviceoperationisinterrupted.

SOLUTION: contactwith technicalservice.

A6 EXCESSIVE TEMP. ● Finalfailure

DESCRIPTION:thesystem has a cooling device to keep theINVERTER inoptimumworkingconditions.

SYSTEM REACTION: if an excessive temperature is reached the own system leaves the inverter out of service and as consequence the pump too.

SOLUTION: verify the temperature of the water, it should be under 40 ºC and the temperature environment should be under 50 ºC. Contact with technicalservice.

A7SHORTCIRCUIT(● Finalfailure)

DESCRIPTION:theSpeedmaticEasyhasanelectronicsystem for protectionagainstshortcircuitsaswell as peaks of current.

SYSTEM REACTION: the pump remains stopped for 10". Then it starts again - 4 attempts. If the problem is not solved, the pump will remain definitivelyoutof order.

SOLUTION:check the pump, if theproblempersists,contactthetechnicalservice.

A8 OVERVOLTAGE - A9 UNDERVOLTAGE (✷ Failureverification)

DESCRIPTION:theSpeedmaticEasyhasanelectronicsafetysystem againstovervoltages andtoolowsupplyvoltages.

SYSTEM REACTION: in case of overvoltage or undervoltage the system remains stopped until an adequate value of voltage is reached. In this case, thesystem isautomaticallyrestored.

SOLUTION:checktheelectricsupply.

DESCRIPTION:blankscreen.

SOLUTION:check the electric supply 230 V.