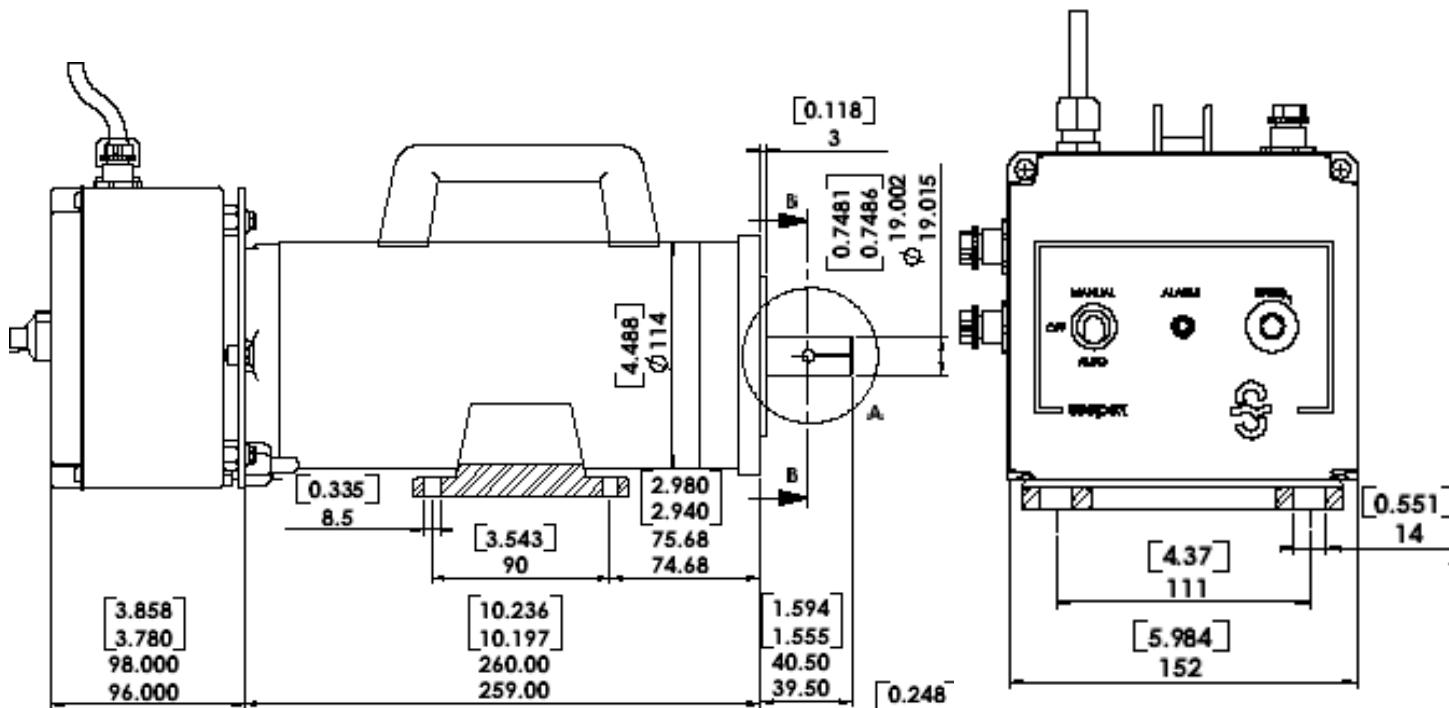


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DATE : 25/08/2003

REV. 0.1



7S115C : NEW DRIVE SYSTEM FOR LOW SPEED PM DC MOTORS.

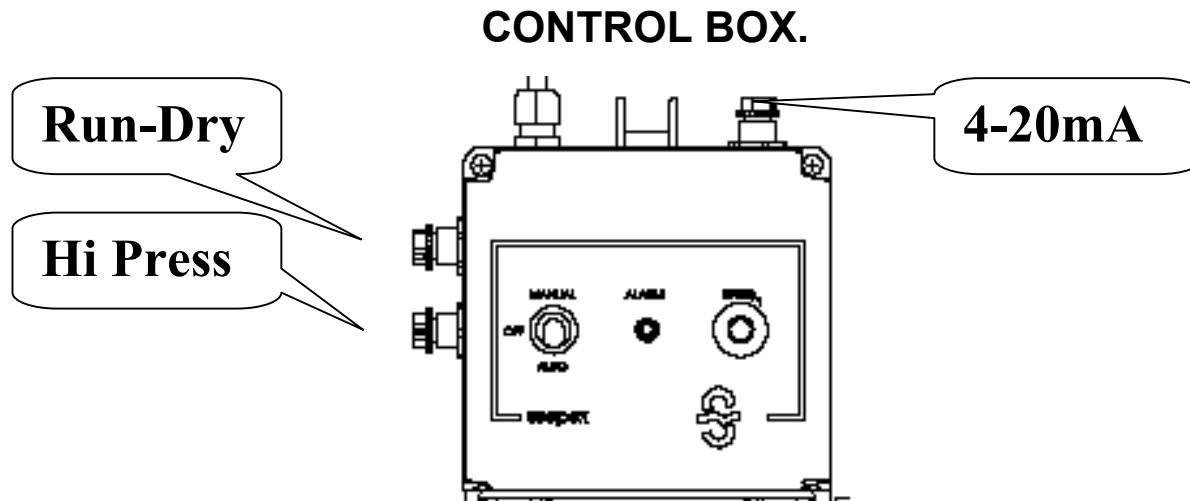
- Power supply 115V- 50/60 Hz
- PWM (pulse width modulation) technique for the speed regulation.
- Operating frequency 18 Khz : that means fine speed regulation, long life for the motor brushes and silent operations.
- Speed reference : ten turns potentiometer (manual operation) or external current signal 4-20 mA (automatic operation).
- Smooth acceleration of the motor to avoid shock for the load
- Current limited : protection of the motor and max torque for the load known
- Thermal protection to ensure no overload long time operations
- Overload current protection to avoid damage to the drive system if the motor is stalled for few seconds.
- Alarm LED indicator
- $R \times I$ compensation to ensure the constant speed operation in the whole range of load.
- Easy calibrations with trimmers on the board (minimum and max speed, acceleration ramp, $R \times I$ compensation) .
- Inhibit input to stop the motor without switch-off the power supply.

TECHNICAL SPECIFICATIONS.

POWER SUPPLY	115 V 50/60 Hz
PROTECTION FUSE	10 AT 250VAC (size 5x20)
RATED MOTOR POWER	380 W
RATED MOTOR SPEED	700 RPM
RATED MOTOR VOLTAGE	110 VDC
RATED MOTOR CURRENT	4,6 ADC
RATED MOTOR TORQUE	5 Nm
MAX MOTOR CURRENT	16 ADC (Ta = 25°C) – 16Nm
OVERLOAD CURRENT PROTECTION	> 5,5A - 3" (motor torque > 6 Nm)
FREQUENCY PWM	18 KHz
CONTROLLER MAX TEMPERATURE	80 °C
SPEED REFERENCE MANUAL	10K OHMS – TEN TURNS POTENTIOMETER
SPEED REFERENCE AUTOMATIC	4 –20 mA EXTERNE SOURCE
SPEED RANGE CONTROL	30 – 700 RPM (TILL RATED TORQUE)
SERVICE AT RATED POWER	S2 – 40'

ADJUSTMENTS WITH TRIMMERS

DESCRIPTION	TRIMMER	RANGE	FACTORY SET
MAX SPEED	VMAX (CW INCREASE)	70V(600RPM) – 90V(780RPM)	80V (680RPM)
ACCELERATION DELAY	ACC (CCW INCREASE)	0 – 3 s	MIDDLE POSITION
MIN SPEED	VMIN (CW INCREASE)	0 – 25V	0V
IR COMPENSATION	RxI (CW INCREASE)	0 – 35V (7Ω x 5A)	25 V



MANUAL / OFF / AUTO: main switch with selection of the operating mode.

SPEED POTENTIOMETER: Ten turns potentiometer , with lock and position indicator , for precise speed setting.

ALARM LED: indicates the thermal protection, overload current alarm and power stage broken.

4-20mA CONNECTOR : optoisolated input **4-20 mA** (pins 1-2) + not insulated input **inhibit** (pins 4-5) from external device for automatic operation

RUN-DRY CONNECTOR :  output supply **115 VAC** (pins 1-2) for external device + **inhibit** (pins 4-5)

HI-PRESS CONNECTOR :  output supply **115 VAC** (pins 1-2) for external device + **inhibit** (pins 4-5)

INSTALLATION AND SET UP PROCEDURES.

The equipment (motor + controller) is ready for operation ; connect the line 115VAC supply source with the earth connection (the section of additional line wires must be > 0,75mm²).

 **DO NOT USE THE DRIVE SYSTEM IN AN EXPLOSIVE ATMOSPHERE**

 **DANGER** : If changes on the calibrations are needed they must be done by qualified electrical maintenance personnel : **THE TRIMMERS MUST BE ADJUSTED WITH INSULATED SCREW DRIVES.**

RXI CALIBRATION :- START THE MOTOR AND WAIT FEW MINUTES FOR THE THERMAL STABILIZATION

- MEASURE THE SPEED WITHOUT THE LOAD
- LOAD THE MOTOR AND CALIBRATE THE TRIMMER TILL THE SAME SPEED WILL BE OBTAINED

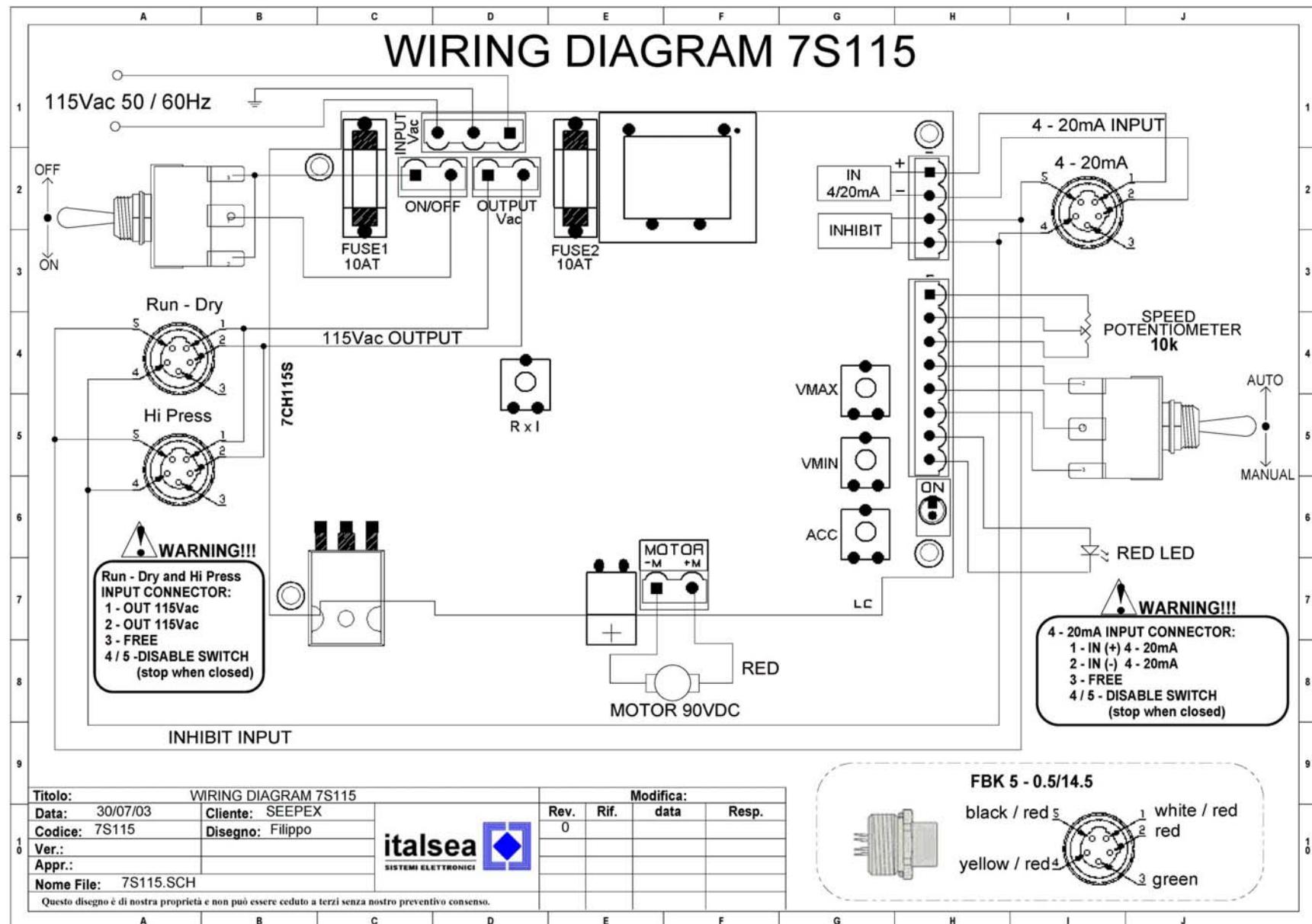
If changes on the internal wires connections or fuse exchange are needed **TAKE-OFF THE MAIN SUPPLY BEFORE ANY OPERATION.**

AUTOMATIC RESTART OF THE CONTROLLER MAY OCCUR IF THE LINE POWER IS TEMPORARY LOST.

 **CONNECTION OF EXTERNAL DEVICES** : PAY ATTENTION TO THE RIGHT CONNECTIONS OF THE INHIBIT AND 115VAC SUPPLY

TROUBLESHOOTING.

MOTOR NOT RUN	<ul style="list-style-type: none">- CHECK THE MAIN POWER CONNECTION- ENSURE THE MAIN SWITCH TO "ON"- ENSURE INHIBIT OPEN- CURRENT LIMIT (CHECK THE CAUSE OF MOTOR OVERLOAD)
BLOW FUSE (GREEN LED OFF)	<ul style="list-style-type: none">- DAMAGE WIRES- WRONG LINE VOLTAGE- MOTOR SHORT CIRCUIT
NO SPEED CONTROL	<ul style="list-style-type: none">- CHECK THE POTENTIOMETER WIRES- CHECK THE CONNECTOR TO EXTERNAL SPEED
ALARM (RED LED ON)	<ul style="list-style-type: none">- CHECK THE LOAD TO ENSURE THE RATED POWER OPERATION OF THE MOTOR AND IF THE ROTOR IS LOCKED





BRUSH CHANGE OPERATION

