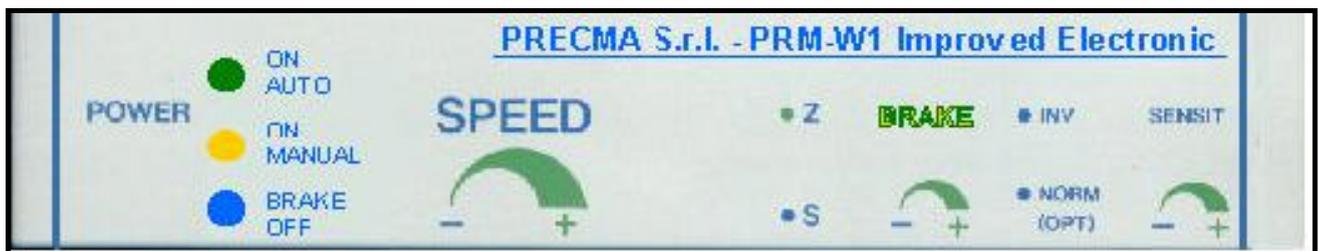


PRM-W1

Improved Substitute for SaviTec 100W electronic boards

User Manual

PRM-W1 is a pin-to-pin compatible improved substitute for original Savitec 100W weft feeder electronic boards. PRM-W1 can be easily used to substitute old broken 100W electronics. See the document "Quick Installation Procedure" to learn how to install it.



The "front panel" is composed by (from left to right):

- One bicolor POWER LED (Red/Green)
- One BRAKE/MANUAL/AUTO switch
- One SPEED potentiometer
- One S/Z rotation switch
- One BRAKE trimmer
- One INV/NORM sensor switch (optional)
- One SENSITIVITY trimmer

We supply together with the PRM-W1 board one sticker-label to be placed over the original front panel of Savitec 100W feeders, in order to remember PRM-W1 new features.

1. The Bicolor POWER LED

The POWER LED reflects the situation of the weft feeder optical yarn sensor: if the INV/NORM sensor switch is in the NORM position or absent, when the LED is RED means that the yarn is over the sensor position, when it is GREEN means that the yarn is behind the sensor position. if the INV/NORM sensor switch is in the INV position, the situation is inverted.

2. The BRAKE/MANUAL/AUTO Switch

The BRAKE/MANUAL/AUTO switch determines the weft feeder status and operation mode: when it is in the position BRAKE (down) the weft feeder stops. In the position MANUAL (centre) the weft feeder works exactly in the same way of the old Savitec 100W boards. In the position AUTO (up) the weft feeder sets automatically the correct speed to run.

See the paragraph "How To Set the speed" to learn the AUTO and MANUAL programs specifications.

3. The SPEED potentiometer

The SPEED potentiometer works differently in the AUTO and MANUAL modes; in the AUTO mode, it works as max speed and acceleration clamp: max speed and max acceleration time when in full CW position, min speed and min acceleration time when in full CCW position. In the MANUAL mode, it works as speed set, as in the original 100W. See the paragraph "How To Set the speed" to learn the SPEED potentiometer use.

4. The S/Z rotation switch

The S/Z rotation switch set the rotation sense of the weft feeder. Up position correspond to Z rotation, down position correspond to S rotation. Looking at the front panel of the weft feeder, Z rotation means the motor rotating CCW.

IMPORTANT: If you change the rotation while the feeder is running, the feeder will change rotation only the next time you stop and restart it using the BRAKE/MANUAL/AUTO switch.

5. The SENSITIVITY trimmer

The SENSITIVITY trimmer sets the sensitivity of the optical yarn sensor. You can increase the optical yarn sensor sensitivity rotating the trimmer CW, and decrease the optical yarn sensor sensitivity rotating the trimmer CCW. See the paragraph "The sensor sensitivity" to learn the correct setting procedure.

6. The BRAKE TIME trimmer

The BRAKE TIME trimmer can be used to set the weft feeder brake time (from the max speed) in the MANUAL mode: the range is from 800ms (full CW) to 8sec. (full CCW). In the AUTO mode, the BRAKE TIME trimmer is not used: if you plan to use the AUTO mode, please set the BRAKE trimmer to the max value (minimum brake time, full CW).

7. The INV/NORM sensor switch (optional)

The INV/NORM sensor switch sets the way the optical sensor works: in the NORM position the sensor is ON when it flashes on a reflecting part. In the INV position the sensor is ON when it flashes on a black part. When the INV/NORM switch is absent, the sensor works as NORM.

8. How to set up the speed and the sensor

PRM-W1 has three "feeder status", determined by the BRAKE/MANUAL/AUTO switch: BRAKE mode, MANUAL mode, AUTO mode. Using the SENSITIVITY trimmer you can adjust the optical yarn sensor sensitivity.

8.1. The BRAKE mode

In the BRAKE mode (switch in the down position) the weft feeder decelerates to stop, keep the motor braking for 5 seconds after it stopped, and then frees the motor.

8.2. The MANUAL mode

In the MANUAL mode (switch in the central position) the weft feeder works exactly the same of the old Savitec 100W: it runs at the speed set by the SPEED potentiometer. To adjust the speed do as follows: set the BRAKE trimmer in the MAX position (minimum brake time, full CW); with the weaving machine stopped, load the feeder with the yarn, and set the SPEED potentiometer in a middle speed position; then start the weaving machine and, if necessary, simultaneously turn the speed potentiometer clockwise (speed up) until the yarn on the feeder starts re-filling the reserve; wait until the yarn reaches the optical sensor, then adjust the speed down so that feeder brakes are minimum.

At this point you may want to change the brake time in order to reduce yarn and feeder stress, and you can do that using the BRAKE trimmer. But it's a better idea to switch instead in the AUTO mode: the feeder will adjust **automatically** speed and brake time.

8.3. The AUTO mode

In the AUTO mode (switch in the up position) the weft feeder automatically sets the correct speed to run, and also the correct acceleration/deceleration to use.

You can use the SPEED potentiometer to set a "clamp" to the max possible speed (and acceleration time). If you don't mind having a little stress on the yarn, simply set the SPEED potentiometer in the max speed position (full clockwise) and put the PRM-W1 in the AUTO mode: the feeder will automatically adjust the correct speed to run.

If you want to have very good speed and acceleration/deceleration setting in order to have less yarn stressing, do as follows: put the feeder in the MANUAL position, and set the correct speed using the potentiometer while the weaving machine is running (just as you are used to do with old 100W, and in the PRM-W1 MANUAL mode). Then switch the feeder in the AUTO position: the feeder will automatically adjust the optimal acceleration/deceleration time and running speed. Obviously you DON'T have to repeat this operation each time the feeder starts: but only the first time. You have to repeat this operation only if you change the weaving machine speed (but in AUTO mode, PRM-W1 can adjust automatically the speed also on great weaving machine changes).

PRM-W1 in the AUTO position can also works in "**pattern**" mode (*mixed colors*), when the weaving machine gets the yarn one pick from a feeder, and the next pick from another, or something like this. Just set the SPEED potentiometer in the position of the max speed you plan it will work (if you don't know exactly, put it in the max speed position), and then put the weft feeder in the AUTO mode: it will automatically adjust the speed also on great "weaving speed" changes (i.e. doubling or halving).

NOTE: in the AUTO mode, PRM-W1 features also the **LOAD** function and the **LOSTYARN** error alarm. The LOAD function fills the feeder before starting: the feeder runs at slow speed until the yarn reaches the optical sensor.

The LOST YARN ALARM stops the feeder when the optical sensor is unreachd for more than 30 sec. (while running).

In the AUTO mode, the feeder sinks less current and has less thermal delta.

8.4. The sensor sensitivity

This is the procedure for setting the optical yarn sensor sensitivity: **put the feeder in the BRAKE mode** (switch in the down position). Be sure to have the feeder empty (no yarn). Adjust the sensitivity trimmer in the point where the LED light switches from RED to GREEN. That's all. When you then put the feeder in the MANUAL or AUTO mode, it will automatically set the correct sensor histeresis.

IMPORTANT: be sure to set the sensor sensitivity ONLY when the feeder is in the BRAKE mode (switch in the down position). If you set the sensitivity when the feeder is in MANUAL or AUTO mode, the setting will be NOT correct (wrong sensor histeresis).

9. PRM-W1 main specifications

- Max weaving speed: 1300m/min. (automatic in AUTO mode)
- Max acceleration time: 800ms (automatic in AUTO mode)
- Max brake time: 800ms (automatic in AUTO mode)
- Min brake time: 8 sec. (automatic in AUTO mode)
- Weaving machine length: up to 6m or more (depending on speed)
- Speed adjusting time: about 5/10 sec. in AUTO mode
- Mixed colors: up to 8 colors in AUTO mode (depending on weaving machine length and speed)

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