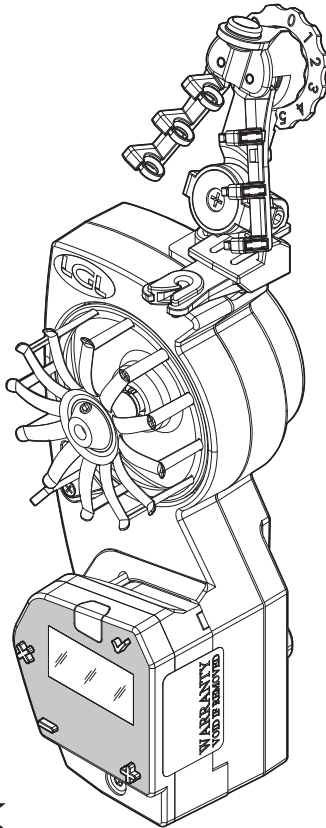




# SPIN<sup>2</sup>



MANUALE DI ISTRUZIONE  
INSTRUCTION MANUAL  
MANUEL D'UTILISATION  
BEDIENUNGSANLEITUNG  
MANUAL DE INSTRUCCION  
EL KİTABI  
使用手冊  
取扱説明書



ALIMENTATORE DI FILO A SPIRE SEPARATE  
YARN ACCUMULATOR WITH SEPARATE COILS  
DISPOSITIF D'ALIMENTATION DE FIL À BOBINES SÉPARÉES  
SCHUSSFADENGEBER MIT GETRENNTEN WINDUNGEN  
ALIMENTADOR DE HILO DE ESPIRAL SEPARADOS  
İPLİK ARASI MESAFELİ İPLİK BESLEYİCİSİ  
分离线圈导纱器  
セパレート型コイル式 ヤーンアキュムレータ

VALID FROM SERIAL  
n° KPLG 10/0001  
(Updated to version 5.39)



Scope of supply: Design, manufacture and after sales service of yarn and weft feeders, measuring winders, stands, creels and oil systems for textile machinery.

TRADUZIONI DELLE ISTRUZIONI ORIGINALI.  
TRANSLATION OF THE ORIGINAL INSTRUCTIONS.  
TRADUCTIONS DES INSTRUCTIONS D'ORIGINE.  
ÜBERSETZUNG DER ORIGINALANLEITUNGEN.  
TRADUCCIÓN DE LAS INSTRUCCIONES ORIGINALES.  
ORJINAL TALİMATLARIN TERCÜMESİ.  
原始使用说明的翻译。  
オリジナル命令を翻訳。

L.G.L. Electronics is flattered by your choice  
and thanks you for the preference granted

# SPIN<sup>2</sup>

## Yarn accumulator

### INSTRUCTION MANUAL

ISSUED BY:

Service Manager

Data: 01/04/2022



APPROVED BY:

Technical  
Manager

Data: 01/04/2022



# WARNINGS



- 1) Switch off the power supply box and the yarn accumulator before starting any part connection, maintenance or replacement.



- 2) During standard machine operation, the yarn accumulator may suddenly start up without prior warning.

*CAUTION:* the orange lights do not signal that the yarn accumulator is ON, but that the accumulator has gone into an alarm mode. Therefore, during standard operation they should be OFF.

- 3) Before yarn accumulator start-up, inspect it physically for damage (moving parts).
- 4) Strictly avoid touching any moving part during accumulator operation



- 5) Due to the high accuracy and sensitivity of the tension sensor, mobile or cordless phones might interfere with it. Operation of the device and the sensor is not affected. In any case, to avoid interference, we recommend that you keep a minimum distance of 3 metres.
- 6) Only use the original L.G.L. Electronics spare parts and accessories.
- 7) Any repairs to the accumulator's electronic parts must be performed by appropriately qualified personnel, regularly authorised by L.G.L. Electronics accordingly.
- 8) Yarn accumulators that are moved from warehouse storage into a warmer weaving mill environment may develop condensation; please wait until they are completely dry before connecting them up. Failure to do so may damage the electronic components.

# WARNINGS

## **TIPS TO KEEP THE YARN ACCUMULATOR IN GOOD WORKING ORDER AND EXTEND ITS SERVICE LIFE.**

*For you to achieve and maintain a satisfactory performance of the yarn accumulator over the years, we suggest you should follow some simple steps:*

- 1. Yarn accumulators that are moved from warehouse storage into a warmer weaving mill environment may develop condensation; please wait until they are completely dry before connecting them up. Failure to do so may damage the electronic components.*
- 2. Water and moisture are harmful to the yarn accumulator's electronics. Keeping the yarn accumulator operating for long periods of time in very humid environments (humidity greater than 80%) or using wires impregnated with water may quickly result in damages to electronic cards. Moreover, never clean the yarn accumulator with water or similar liquids.*
- 3. Machines working in very dusty environments require greater maintenance. A clean workplace clean can prevent residual dust or dirt from negatively affecting machine performance by stressing its moving parts. The latter are protected, anyway dust accumulation might result in hindered movement and, hence, early wear.*
- 4. We recommend that you store yarn accumulators that are not used for long periods of time in the appropriate polystyrene boxes, which guarantee optimum storage conditions.*
- 5. When the yarn accumulator is being threaded, used the appropriate yarn taker. Do not use other tools, especially metal ones.*

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# INDEX

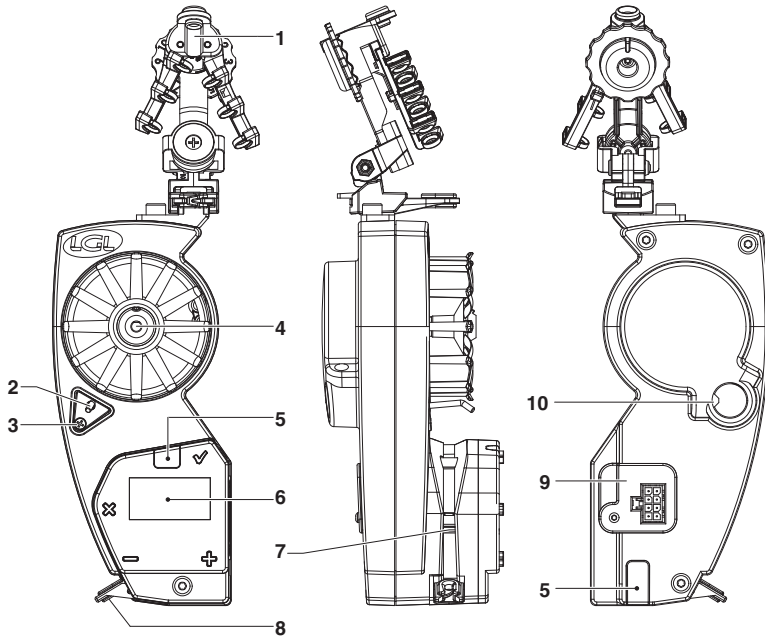
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# 1 - GENERAL FEATURES

## 1.1 MAIN PARTS - CONTROL AND ADJUSTMENT POINTS

### Main parts:

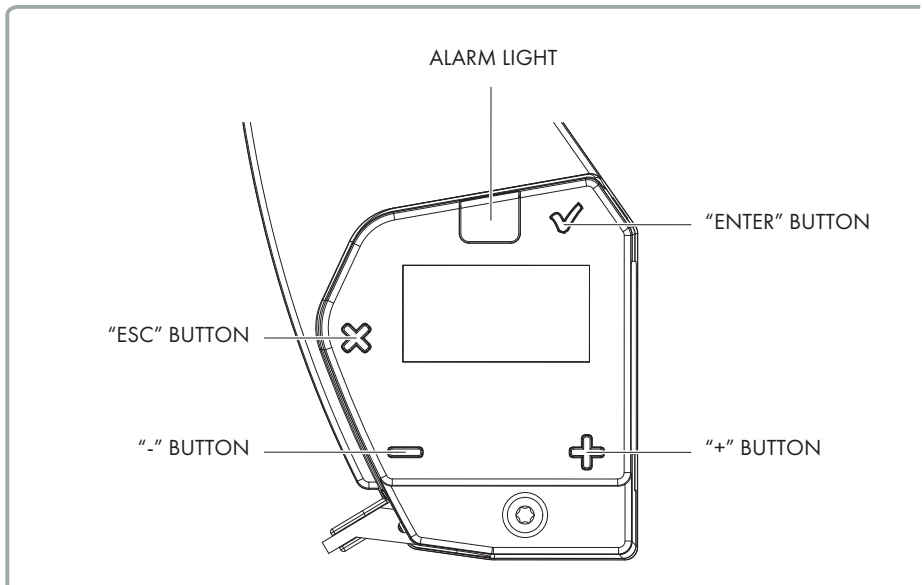
- 1 • TENSIONER
- 2 • SEPARATING PIN
- 3 • SEPARATION CONTROL SCREW
- 4 • YARN FEEDING WHEEL
- 5 • ALARM LIGHTS
- 6 • DISPLAY UNIT
- 7 • LOAD CELL
- 8 • YARN GUIDE CERAMIC
- 9 • CONNECTOR
- 10 • FIXING SCREW





# 1 - GENERAL FEATURES

## 1.2 CONTROL BUTTONS



### “✓” Enter button

The Enter button is used to access the reference tension programming function and the sub-menus and confirm an entry.

The purpose of the button depends on the menu you are in.

Moreover, this button enables you to:

- reinstate the device when it is in the yarn winding (or threading) state “WAIT:YarnWinding”;
- turn on the device when it stands in the “SPIN 2 OFF state”;
- put the device in the self-resetting yarn winding/threading state “WAIT:YarnWinding” (see par. 3.1). Keep this button pressed for about 1 second.

### “✘” Escape Button

The Escape button is used to cancel an alarm (if the alarm displayed can be cancelled), exit submenus and quit a value editing page.

The purpose of this button depends on the menu you are in. Moreover, this button allows you to:

- reinstate the device when it is in the yarn threading state “WAIT:YarnWinding”;
- switch off the device by holding this button pressed for about 5 seconds (complete switch-off “SPIN 2 OFF”);
- put the device in the non-self-resetting yarn threading state “WAIT:YarnWinding” (see par. 3.1). To this purpose, hold this button pressed for about 1 second.

# 1 - GENERAL FEATURES

## “+” Button

This button is used to scroll menus and submenus upwards. Moreover, it is used to increase values in data entry/edit sessions.

If it is held pressed while a datum is being edited in the programming mode, the value will go up quickly.

This button is also used to reinstate the device when it is in the yarn threading state “WAIT:YarnWinding”.

## “-” Button

This button is used to scroll menus and submenus downwards. Moreover, it is used to decrease values in data entry/edit sessions.

If it is held pressed while a datum is being edited in the programming mode, the value will go down quickly.

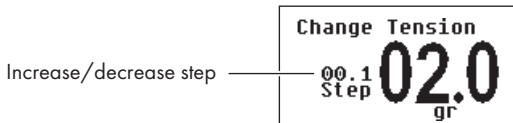
This button is also used to reinstate the device when it is in the yarn threading state “WAIT:YarnWinding”.

## “+” & “-” pressed simultaneously

While entering/editing parameters which may have a very large range of values, the increase/decrease step can be changed by simultaneously pressing the buttons “+” and “-”.

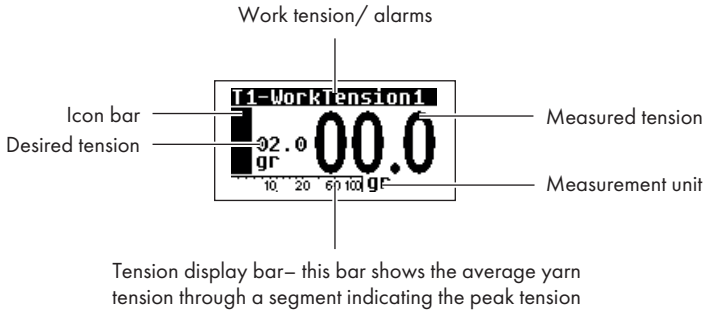
**Note: this function is only enabled in the parameter entry/edit mode.**

**See figure below:**



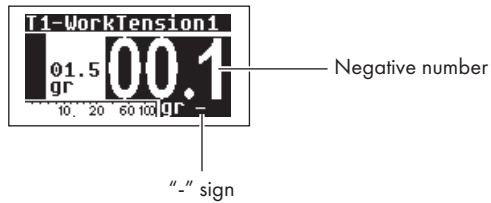
# 1 - GENERAL FEATURES

## 1.3 DISPLAY UNIT

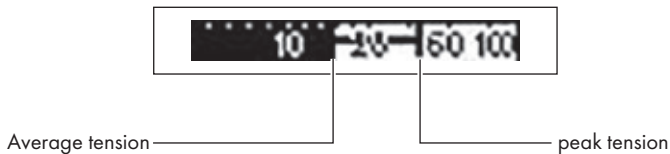


### - Negative number display

Negative numbers are displayed with the "-" sign on a black background.

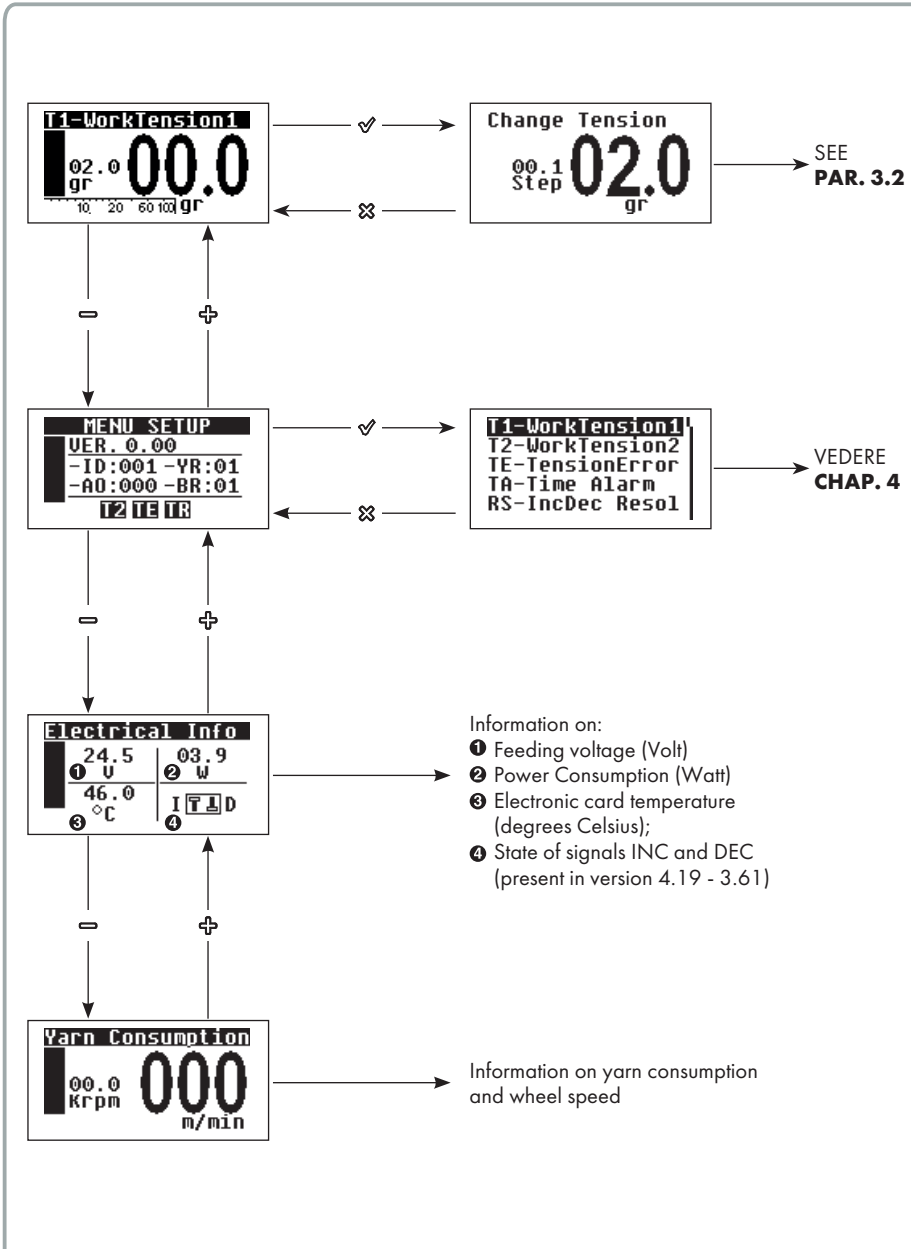


### - Tension bar



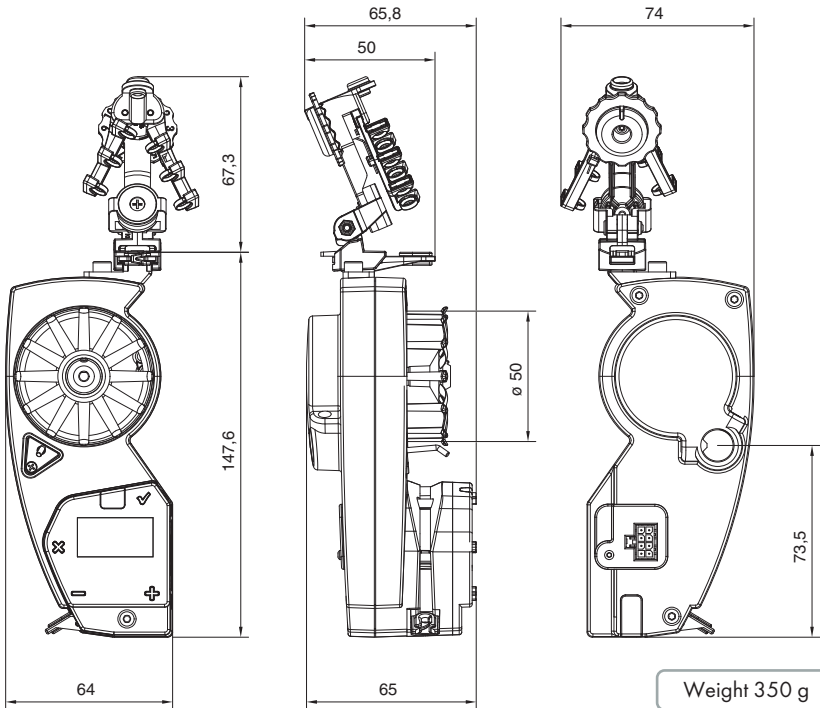
# 1 - GENERAL FEATURES

## 1.4 MAIN MENU MAP



# 1 - GENERAL FEATURES

## 1.5 OVERALL DIMENSIONS



# 1 - GENERAL FEATURES

## 1.6 INTENDED USE – TECHNICAL AND OPERATIONAL FEATURES

SPIN 2 is a yarn accumulator featuring separate coils suitable for all types of knitting machines or textile machines requiring constant tension yarn feed-in.

### **Operational Features:**

- Quick reaction to machine speed changes without causing tension peaks on the yarn
- Quick reaction to set tension changes.
- Yarn tension adjustment from 0.5g to 100g.
- Maximum torque available at low speeds, too
- Special concern for reduction of energy consumption
- Yarn absorption measurement
- Easy installation and use
- RS485 and CAN BUS serial communication option
- Connections: via flat cable or traditional cable
- Ceramic tension sensor: guarantees accuracy, precision and quick response

### **Technical Specifications:**

- Power supply voltage data:  $V = \text{From } 24\text{VDC} \pm 10\% \text{ to } 60\text{VDC} \pm 10\% \text{ (min } 21,6 \text{ VDC - max } 66 \text{ VDC)}$
- Average power in normal operation: 5W-15W (much relying on the type of work process)
- Peak power: 70W
- Automatic speed adjustment up to a maximum value of 1400 m/min.
- Coil separation feature from 0 to 2mm.
- A-weighted sound pressure level, at maximum speed, < than 70dB (A)
- Operation and storage conditions: Room temperature: +10 to +40 °C
- Max. humidity: 80%

## 2 - INSTALLATION

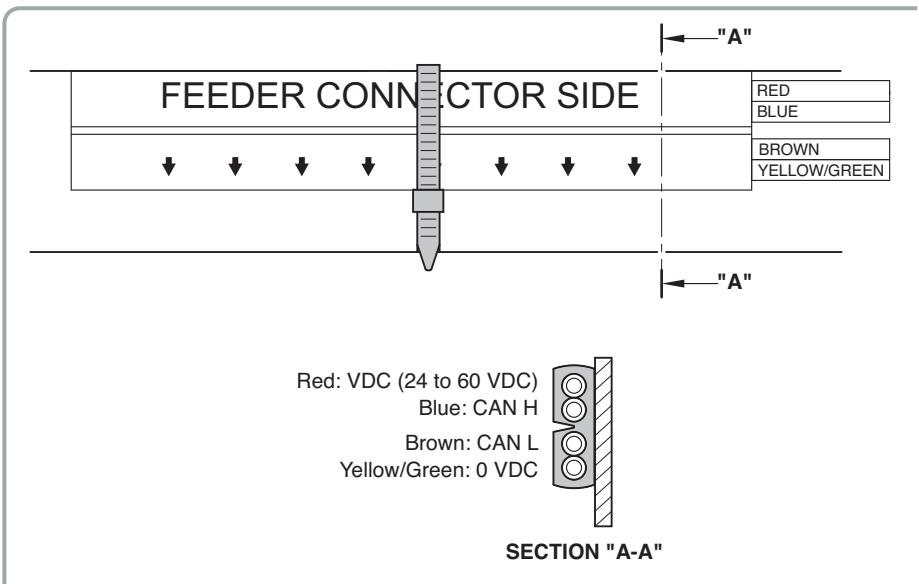
### 2.1 YARN ACCUMULATOR INSTALLATION

**N.B.:** Yarn accumulators that are moved from warehouse storage into a warmer weaving mill environment may develop condensation; please wait until they are completely dry before connecting them up. Failure to do so may damage the electronic components.

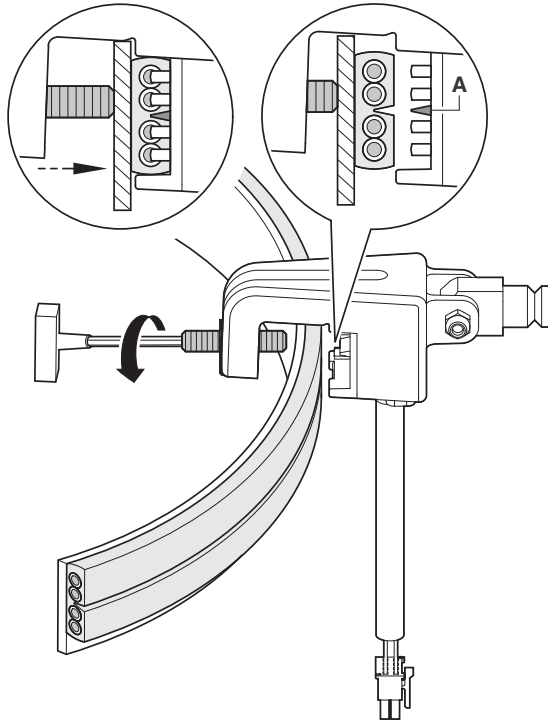
For installation of the yarn accumulator onto the machine, proceed as follows:

#### VERSION WITH 4-WIRE FLAT CABLE

1. Place the flat cable onto the outer edge of the support ring and fix it by means of straps. The text "FEEDER CONNECTOR SIDE" on the cable must be read on the correct reading end, and not reversed; the arrows must be turned downwards.



## 2 - INSTALLATION



Keep flat cable with top portion flush to ring profile.

N.B.: The support ring shall be sized as follows:

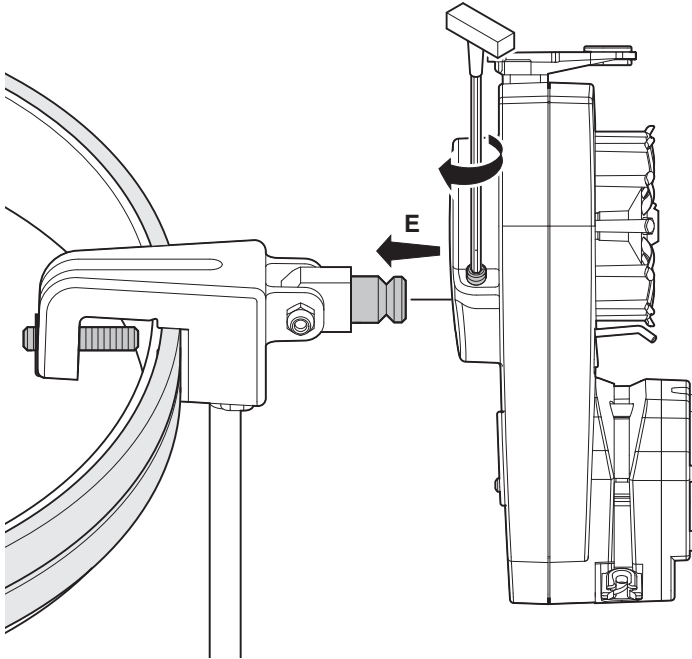
- Height not less than 25mm
- Max thickness 10 mm

2. Place the clamp in the desired position; close the clamp grab screw until the strip is punctured, taking care to have the clamp connector guide (**A**) match the seat on the plate.

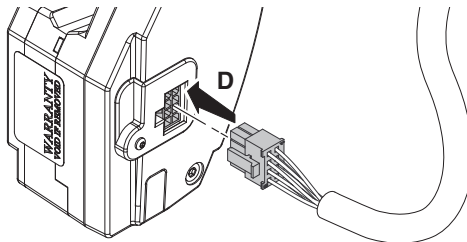


## 2 - INSTALLATION

3. Fix the accumulator to the clamp pin with the related screw (**E**).



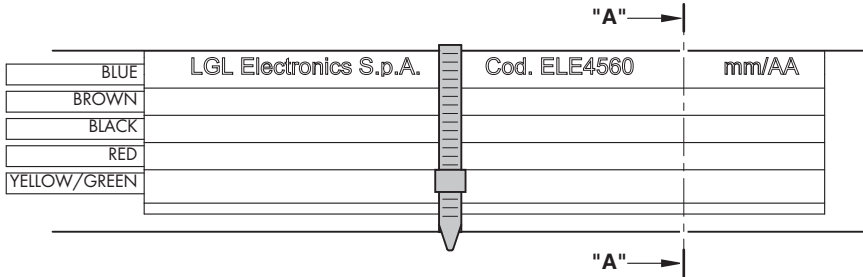
4. Connect the cable connector to the related connector found on the accumulator (**D**).



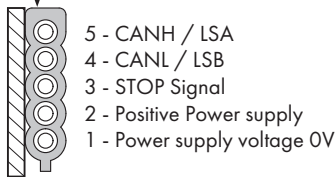
## 2 - INSTALLATION

### VERSION WITH 5-WIRE FLAT CABLE

1. Place the flat cable onto the support ring and fix it by means of straps. The text "LGL Electronics" on the cable must be on the right reading side; the flat cable lip shall be turned downwards.



Keep flat cable with top portion facing ring profile



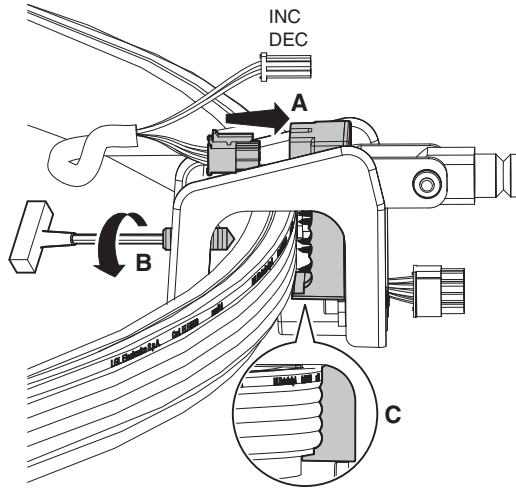
**SECTION "A-A"**

**N.B.: The support ring shall be sized as follows:**

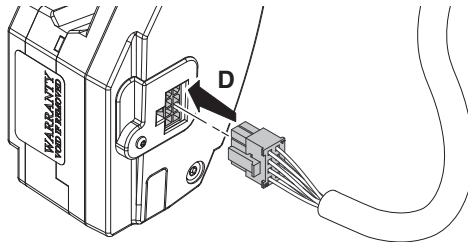
- height not less than 25mm
- max. thickness 10 mm

## 2 - INSTALLATION

2. Connect the cable connector to clamp connector (**A**).
3. Place the clamp in the desired position; close the clamp grab screw until the strip is punctured (**B**), taking care to have the connector profile match that of the plate (**C**).

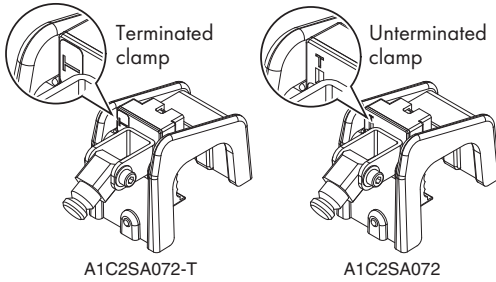


4. Connect the (A1N1SA792-0200) cable connector to the related connector found on the accumulator (**D**).

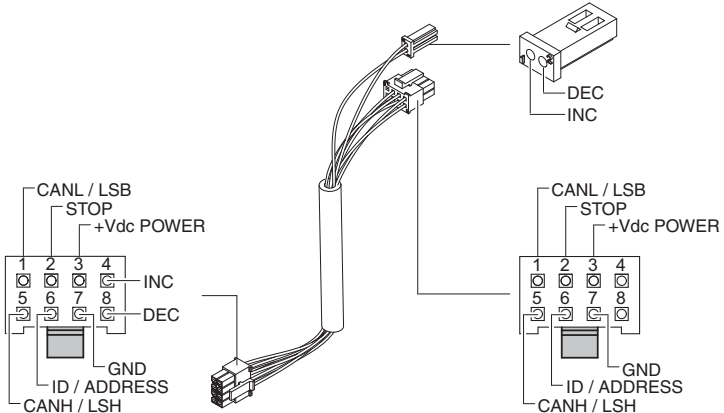
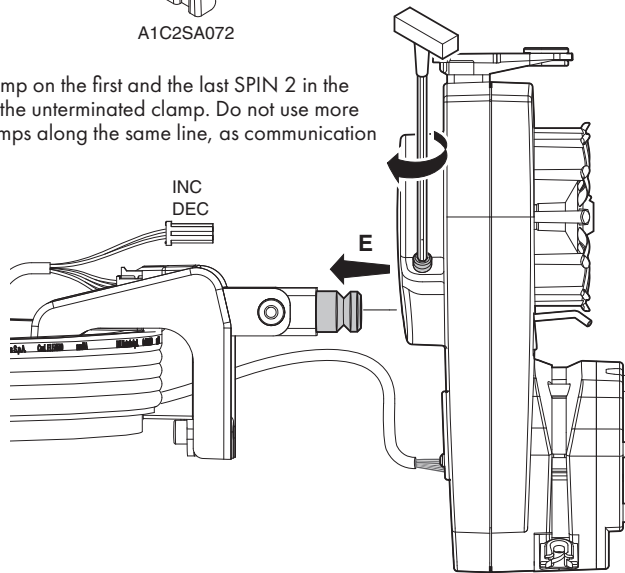


## 2 - INSTALLATION

5. Fix the accumulator to the clamp pin with the related screw (**E**).



Place the terminated clamp on the first and the last SPIN 2 in the row. On the others, use the unterminated clamp. Do not use more than two terminated clamps along the same line, as communication problems might result.



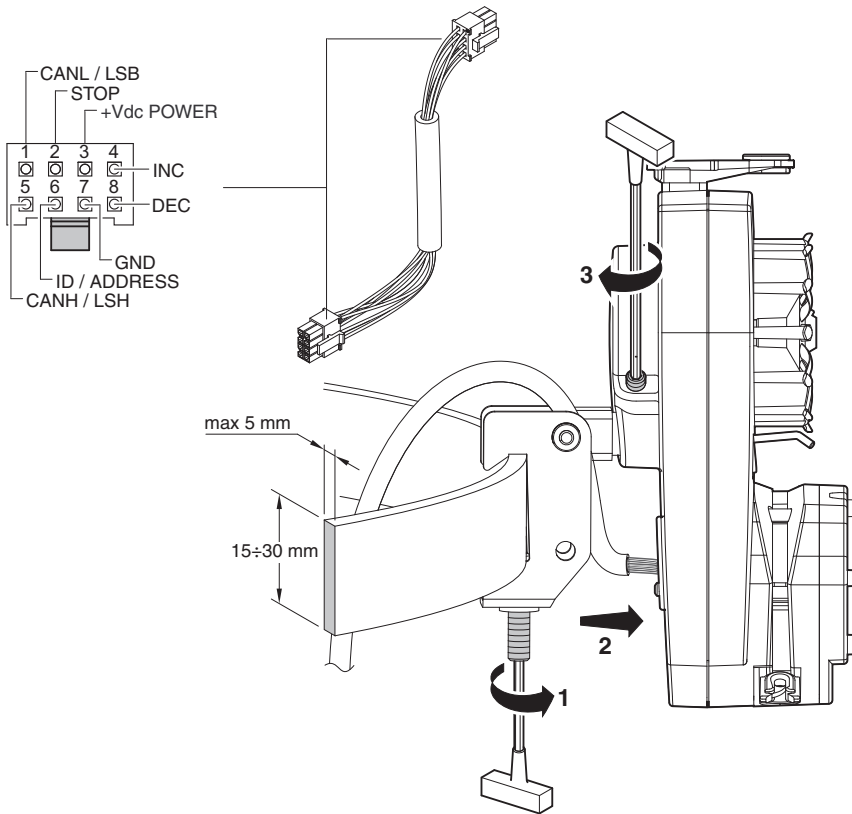
## 2 - INSTALLATION

### SINGLE-CABLE VERSION

1. Fix the clamp (A1C2SA060) with the related screw in the desired position on the support ring.
2. Connect the single-cable (A1N1SA791) into the accumulator.
3. Fix the accumulator to the clamp.

**N.B.:** The support ring shall be sized as follows:

- height ranging between 15 and 30 mm
- max. thickness 5 mm

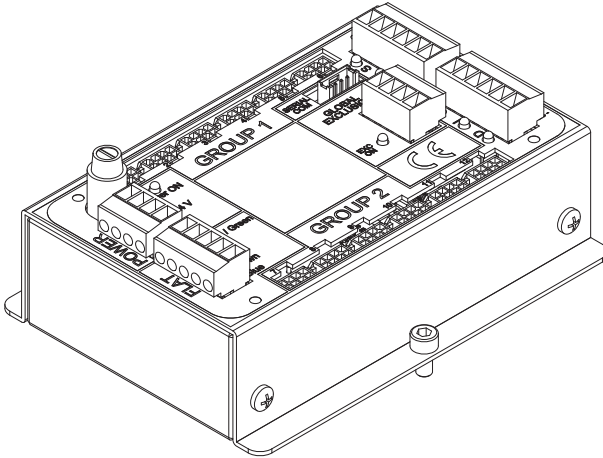


# 2 - INSTALLATION

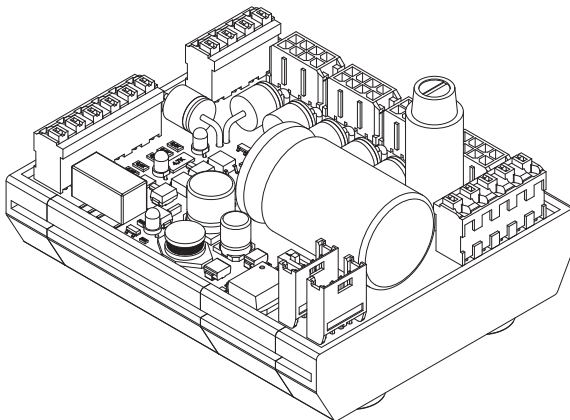
## 2.2 POWER SUPPLY BOX

(Available for machines that are not originally equipped with yarn accumulators).

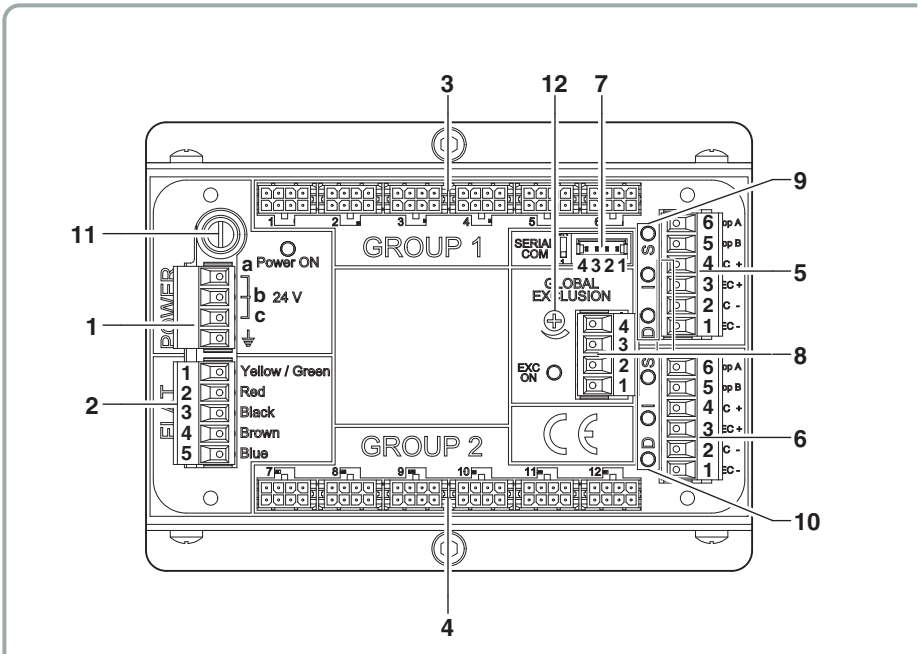
4, 8 or 12-position, power supply box with double INC-DEC signal.



4-position power supply board with 1 INC-DEC signal.



## 2 - INSTALLATION



### 1. POWER (power supply connector)

There are 3 different ways to feed voltage to LGL box:

- 18Vac to 28Vac **single phase alternating voltage**.

Connect the two (single-phase) lines between two phases whatsoever (a, b or c) of the POWER connector.

- 18Vac to 28Vac **three-phase alternating voltage**.

Connect the three (three-phase) lines into 3 (a, b and c) phases of the POWER connector.

N.B: Three-phase AC voltage from 18Vac to 28Vac, the star centre of the three-phase secondary winding **MUST NOT BE** grounded.

- 23Vdc (\*) to 40 Vdc **direct voltage**

Connect the two (DC power supply) lines between 2 phases whatsoever (a, b or c) of the POWER connector.

Connect the earth-fault protection cable into the clamp marked with the electrical earth symbol.

**(\*) Note: The minimum power supply value of the box is 23Vdc, 1V higher than that of the devices to compensate for the voltage drop on external diodes.**

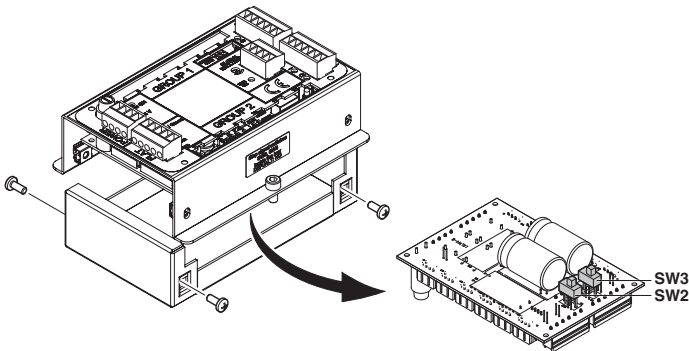
**Note: Connectors 2 and 8 and screw 12 are not available on all box models.**

## 2 - INSTALLATION

- 2A.** FLAT: 4-wire flat cable: connector for flat wire (Not available on all versions)
- 1 - Yellow/Green –0V (GND) power supply.
  - 2 - Red – power supply (22Vdc to 40Vdc) for flat cable connected devices.
  - 3 - Black – NOT IN USE
  - 4 - Brown – CANL / LSB serial communication.
  - 5 - Blue – CANH / LSA serial communication.
- 2B.** FLAT: 5-wire flat cable: connector for flat wire (Not available on all versions)
- 1 - Yellow/Green –0V (GND) power supply.
  - 2 - Red – power supply (22Vdc to 40Vdc) for flat cable connected devices.
  - 3 - Black – STOP SIGNAL
  - 4 - Brown – CANL / LSB serial communication.
  - 5 - Blue – CANH / LSA serial communication.
- 3 & 4.** Connectors (group 1 & group 2) for single cable. Available for up to 12 accumulators.  
The position will automatically assign the address to the device (1 to 12).
- 5.** Stop and INC & DEC signals referred to accumulators connected to group 1 connectors.
- 6.** Stop and INC & DEC signals referred to accumulators connected to group 2 connectors.

### Notes for INC and DEC signals:

- **Power supply for INC and DEC signals** • from 5Vdc to 40 Vdc  
• from 12Vac to 28Vac
- **Stop signals: STOP A = N.O. STOP B = COM. Dry contacts.**  
**N.O. / N.C. programmable via Dip Switches SW2 – SW3 located under the board. To access the Dip Switches you need to de-energize the box, unscrew the 4 screws that fasten the base and the lid and separate them.**





## 2 - INSTALLATION

- 7. SERIAL COM:** Serial port with dip switches for insertion of 100ohm termination.
- 1 - CANH / LSA serial communication
  - 2 - CANL / LSB serial communication
  - 3 - 0V (GND).
  - 4 - Power supply voltage (22V to 40V) available for serial port (if necessary).

**8. GLOBAL EXCLUSION:**

1. ESC-
2. ESC+
3. ANALOG+
4. ANALOG-

ESC+ e ESC- :	from 5VDC to 40VDC
	from 12VAC to 28VAC
ANALOG+ e ANALOG- :	from 0 to 10VDC

This function aims to reset the alarms coming from the feeders when the machine stops. This function is similar to that of signals INC DEC, when they switch the feeder from T1 with alarms enabled to T2 with alarms disabled when the machine stops.

We have two options of operation, to achieve the same result:

1. ESC+ and ESC- (PIN 1 and 2) connected to the lamp: when the machine stops, it switches on the signal lamp. This lamp applies a voltage between ESC+ and ESC- thus activating the exclusion.

In this condition, the machine does not consider any warning signals possibly coming from the feeders.

2. ANALOG+ and ANALOG- (PIN 3 and 4) connected to the machine inverter: in this case a threshold shall be set using the trimmer 12.

Procedure: the operator has to turn the trimmer fully clockwise so as to set the minimum threshold. After that, with a feeder in alarm state, he starts the machine at a speed value below which the feeder alarm must not be triggered. He finally turns the trimmer clockwise until the feeder in alarm state stops the machine. That is the sought threshold value.

**9 & 10. Leds (group 1 and group 2) for INC DEC and STOP signals.**

- Led "D" = DEC signal. Led on when DEC enabled.
- Led "I" = INC signal. Led on when INC enabled.
- Led "S" = STOP signal. Led on when STOP enabled.

- 11.** Led Power ON and Fuse 15A Fast.

- 12.** Exclusion setting trimmer Exclusion (not available on all versions).

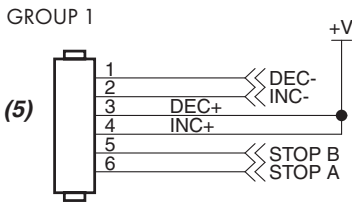
## 2 - INSTALLATION

**INC and DEC signals:** signals coming from the machine to increase or decrease the working voltage or shift from one working voltage to another (admitted voltage values for the high logic level: 11V to 40V).

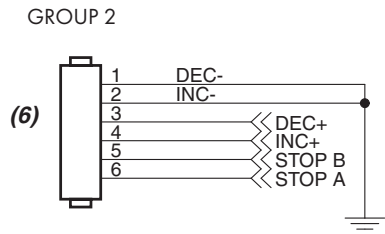
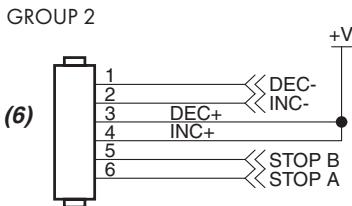
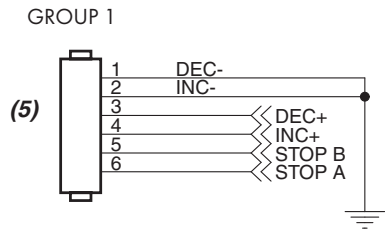
**Note: INC and DEC pulse times shall least exceed 10ms (see par. 4.2.5 "RS-IncDec Resol").**

### Possible connections for INC and DEC

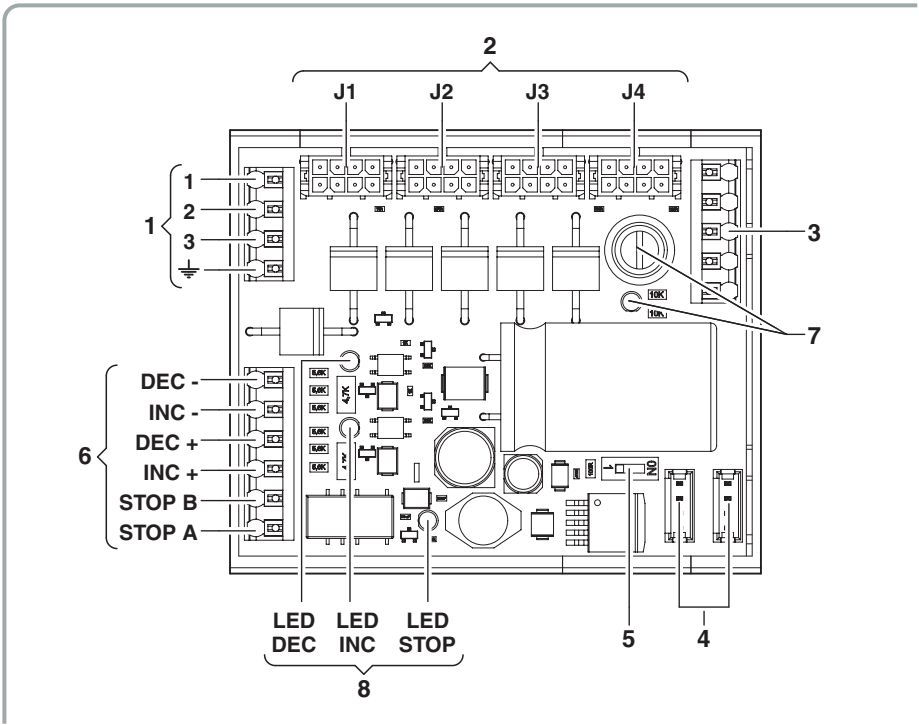
#### POSITIVE COMMON WIRE



#### NEGATIVE COMMON WIRE



## 2 - INSTALLATION



### 1. CN1:

There are 3 different ways to feed voltage to the LGL box:

#### - 18Vac to 28Vac. **Single-phase alternating voltage**

Connect the two (single-phase) lines between two phases whatsoever (1, 2 or 3) of the CN1 connector.

#### 18Vac to 28Vac **three-phase alternating voltage.**

Connect the three (three-phase) lines into the 3 phases (1, 2 and 3) of connector CN1.

#### - **23Vdc (\*) to 40Vdc Direct voltage.**

Connect the 2 (dc power supply) lines between 2 phases whatsoever (a, b or c) of the POWER connector.

Connect the earth-fault protection cable into the clamp marked with the electrical earth symbol.

**(\*) Note: The minimum power supply voltage of the box is 23Vdc, 1V higher than that of the devices to compensate for the voltage drop on external diodes.**

## 2 - INSTALLATION

2. Connectors for single cable. Available for up to 4 accumulators.  
The position will automatically assign the address to the device.  
J1 = ID 1, J2 = ID 2... J4 = ID 4.
3. CN2: Extension Power Box
  - 1 - 0V (GND).
  - 2 - Power supply (22V to 40V) for expansion board.
  - 3 - "Stop" signal.
  - 4 - "INC" signal.
  - 5 - "DEC" signal.
4. CN4 and CN5: Serial ports (parallel-connected)
  - 1 - CANH / LSA serial communication.
  - 2 - CANL / LSB serial communication.
  - 3 - 0V (GND).
  - 4 - Supply voltage (22V to 40V) available to serial port (if necessary).
5. SW1: dip switch for insertion of 100 ohm termination.
6. Stop and INC & DEC signals.
  - Supply voltage for INC & DEC signals from 11V to 40V.
  - Stop signal: STOP A = N.O. STOP B = COM. Clean contacts.  
N.O. & N.C. can be programmed via software on the accumulator (see parameter "Advanced Options" par. 4.2.9).
7. DL1 & F1: Led Power ON and Fuse 15A Fast.
8. DL2 = Led INC, DL3 = Led DEC, DL4 = Led STOP. Leds on when the related signal is enabled.

**INC & DEC signals:** signals coming from the machine to increase or decrease the working voltage or shift from one working voltage to another (admitted voltage values for the high logic level: 11V to 40V).

Possible connections for INC & DEC: to "Positive Common" to "Negative Common" (as per box with double INC & DEC signal).

The polarity of signals INC & DEC can be programmed on the accumulator (see par. 4.2.9 "AO-Adv.Options" (advanced options)).

**Note: INC and DEC pulse times shall least exceed 10ms (see par. 4.2.5 "RS-IncDec Resol").**

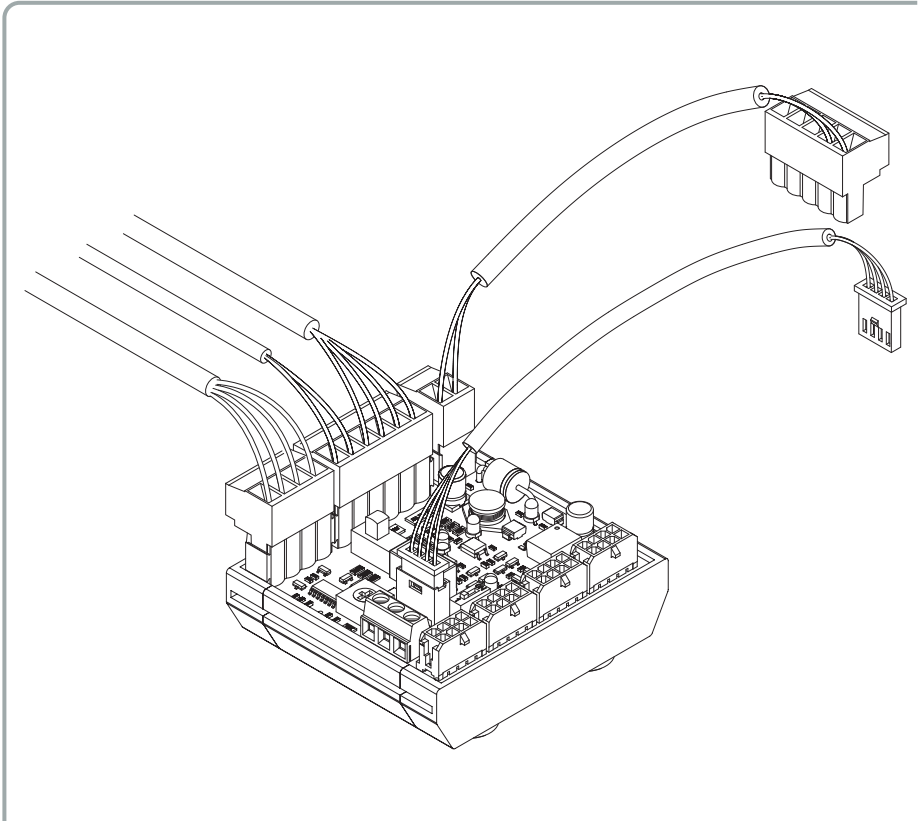
## 2 - INSTALLATION

### 2.3 MODULE TO ADD INC DEC SIGNALS (A3N2SA287)

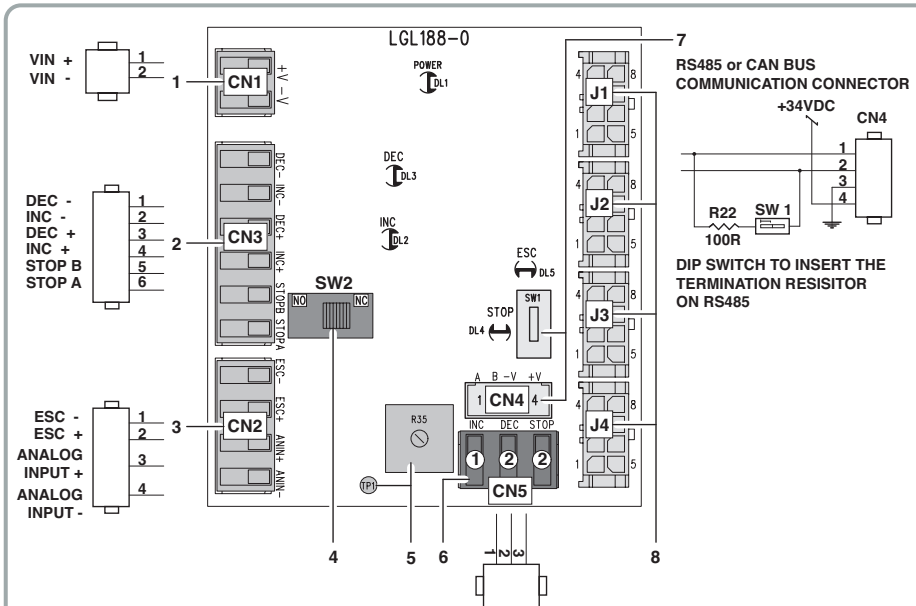
Module to add INC DEC signals in addition to those that are already present in the standard power box.

Each module provides 1 INC DEC signal and 1 EXCLUSION.

4 feeders can be connected for each module.



## 2 - INSTALLATION



**1. POWER CONNECTOR**  
 ADMITTED POWER SUPPLY VOLTAGE RANGE:  
 - from 23Vdc to 40Vdc.

**2. KNITTING MACHINE INC DEC STOP CONNECTOR**  
 INC DEC ACTIVATION VOLTAGE:  
 - from 5Vdc to 40Vdc.  
 - from 12Vac to 28Vac.

**3. EXCLUSION CONNECTOR**  
 EXCLUSION ACTIVATION VOLTAGE:  
 Digital Input (on pin 1 and 2)  
 - from 5Vdc to 40Vdc.  
 - from 12Vac to 28Vac.  
 Analogue input (on pin 3 and 4):  
 - from 0V to 10V.

**4. NO NC STOP Switch**

**5. EXCLUSION SETTING**  
 VARIABLE THRESHOLD:  
 - from 0V to 6,1V (With 34V on VBus)

**6. EXTRA INC DEC STOP SPIN 2 SIDE:** If you wish to add other SPIN 2 to the same signals in addition to the 4 already connected ones, you can add other modules and connect to each other and connect the clamps CN5 of these modules to one another. In this manner, the INC DEC signal that comes from the machine to CN3 of the first module can be made available to the other modules so as to allow other SPIN 2 to take advantage of the same signal.

**7. RS485 or CAN BUS COMMUNICATION CONNECTOR**  
 DIP SWITCH FOR INSERTION OF TERMINATION RESISTANCE ON RS485

**8. SPIN 2 CONNECTORS**

# 3 - START-UP AND THREADING

## 3.1 OFFSET

Once installed on the machine, connected to the power supply box and fed with current, the accumulator appears to be ON.

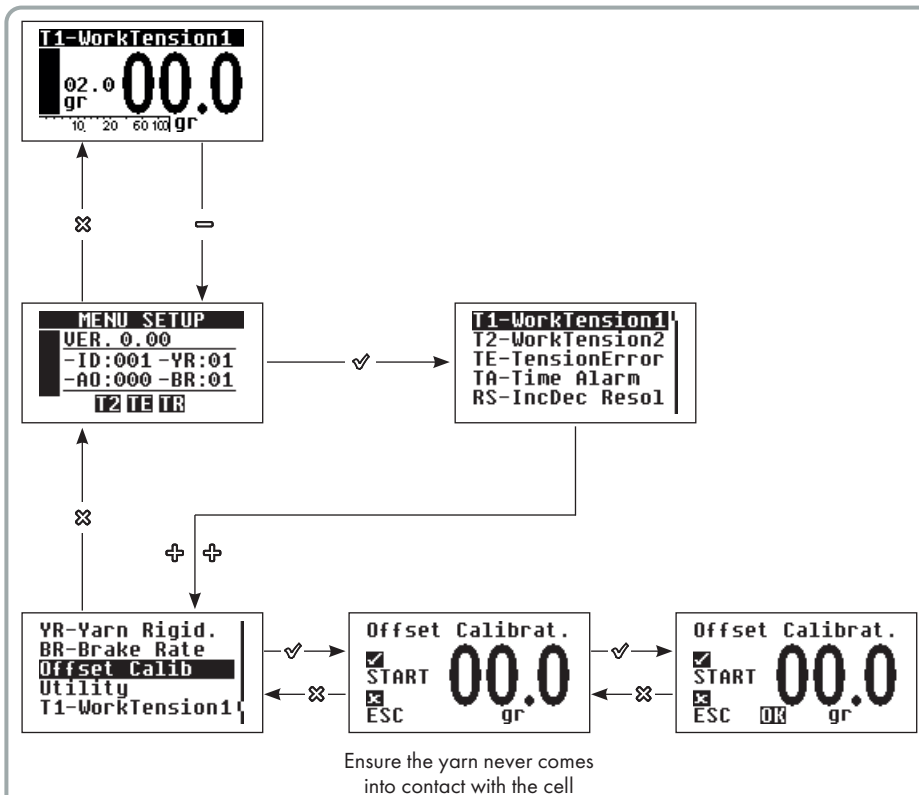


**WARNING:** Before performing the **OFFSET** calibration, ensure the accumulator is at a steady temperature. We suggest you go through the cell reset procedure 15 minutes after power on.



**WARNING:** during the **OFFSET** calibration, the yarn shall never touch the load cell. If yarn is found on the accumulator, hold the X button pressed until the display unit shows the message "WAIT: Yarn Winding". At this point, you can remove the yarn.

Calibrate the load cell 'OFFSET' as detailed below:



## 3 - START-UP AND THREADING

In cases when the offset calibration procedure is not successful, the led will blink and the message "ERR" will be displayed instead of "OK".

In this case, ensure the yarn does not come into contact with the cell and that there is no residual dirt left around the cell ceramic, then try and repeat the offset procedure. If the offset calibration is not successful after many attempts, have the device serviced by LGL Customer Service.

N.b.: For a detailed description of the "Offset menu, please read par. 4.2.12.

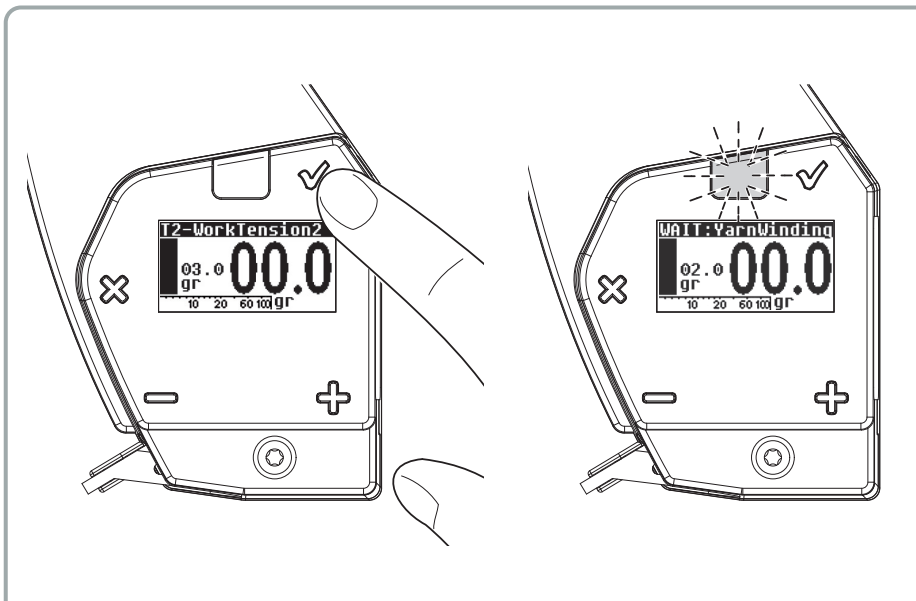
### 3.2 YARN THREADING



**WARNING: Before threading the accumulator, ensure the latter is at a steady temperature. We suggest threading 15 minutes after power-on.**

Thread the accumulator as follows:

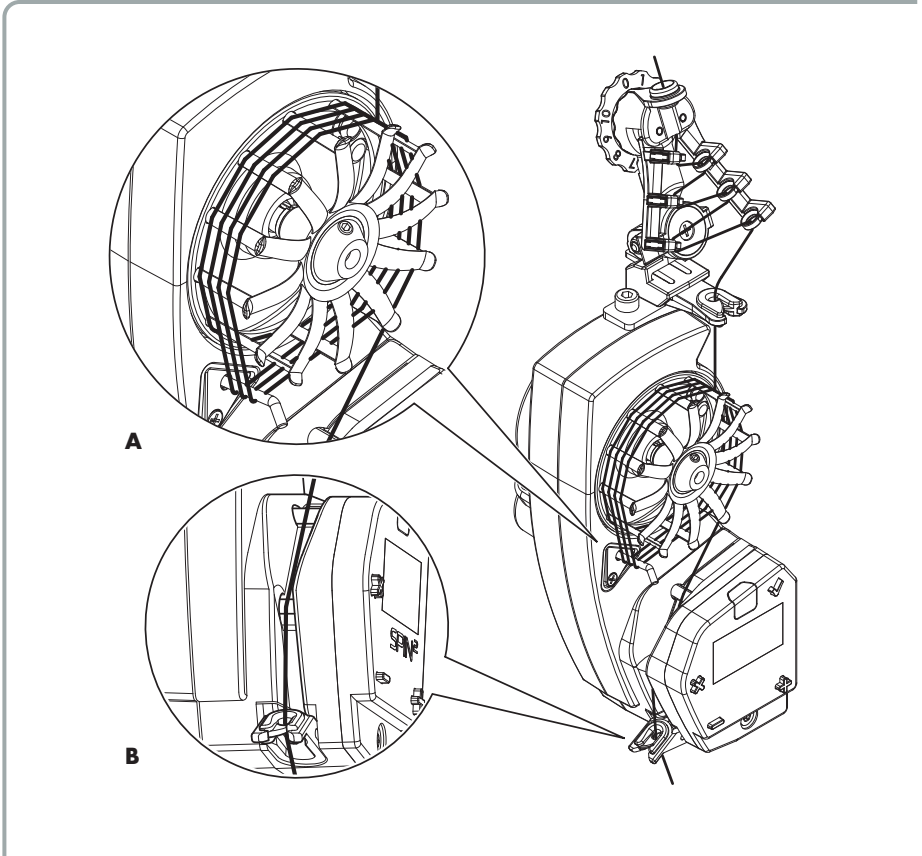
- Press the "X" or "√" button for 1 second (depending on the type of reset you wish to use). The red light will go on on the accumulator and the message "WAIT:YarnWinding" will appear on the display unit.





### 3 - START-UP AND THREADING

- Wind the wire around the feeding wheel as shown in the figures, taking care that the first coil is run below the separation pin, whereas for the following coils the yarn shall run on top of it **(A)**.
- Apply the yarn to the yarn guide bush so that the yarn runs above the load cell. At this point, in cases when the self-restore threading option is enabled, operation will be automatically restored, otherwise press any button to restore the device to operation **(B)**.



The number of coils to be wound around the feeding wheel varies as a function of the yarn type. The following values are provided as an indication:

- plain Lycra: 1-2 coils
- coated Lycra, cotton, nylon and polyester: 3-5 coils.

# 3 - START-UP AND THREADING

N.B.: The "YarnWinding" procedure sets the device to the following status:

- The motor is inhibited. Thus, yarn winding around the wheel is made simpler;
- A stop signal is sent to the machine. This tells the machine the device is not ready to run;
- The orange led goes on;
- The message: "WAIT:YarnWinding" is displayed

There are two different modes to run the "YarnWinding" function:

- a) the device needs to be manually restored (this function can be enabled by pressing the "X" button for a second);
- b) the device automatically restores operation (this function can be enabled by pressing the "√" button for a second);

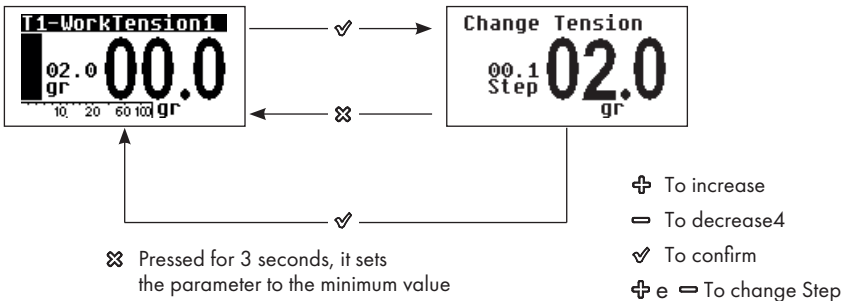
These two modes are different in that the former only envisages manual reset by pressing either button, whereas the latter (self-restore) also resets the device by letting the yarn run on the tension sensor.

It is good rule to only use the manual reset option when you need to work close to the tension sensor on the device. Indeed, this option prevents the motor from restarting following an unintentional contact with the "cell".

The self-restore feature, which simplifies the threading, is useful when you need to thread several devices (typically, upon item changes).

## 3.3 QUICK START-UP

Programming desired tension:

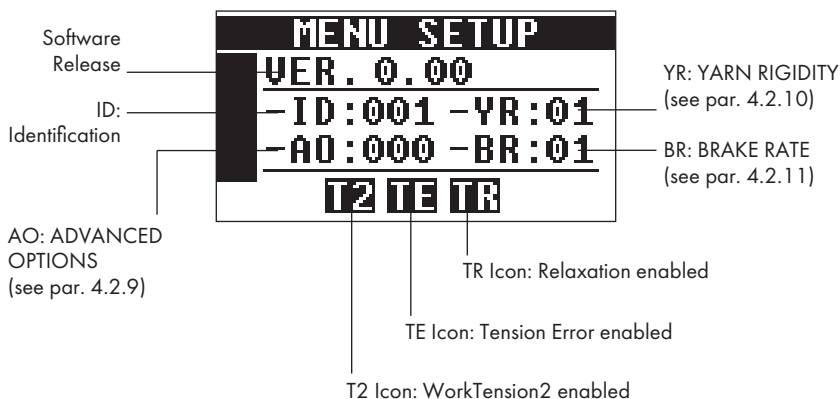


Please bear in mind that if the device is working with T1, the modified reference will be that of "WorkTension1", whereas if it is working with T2, the modified reference will be that of "WorkTension2".

Once the tension has been set, the machine can be started.

# 4 - SETTING THE OPERATING PARAMETERS

## 4.1 MENU SETUP



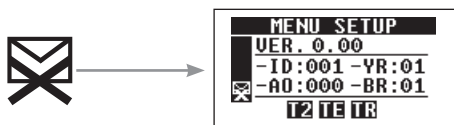
The SETUP menu sums up the settings of the accumulator's main parameters.

- Ver. xx.xx = Software Release.
- AO = Advanced Options.
- YR = Yarn Rigidity.
- BR = Brake Rate.
- ID = SPIN 2 identification address. It is used by the SPIN 2 to establish a serial communication with the external world. This address is generally read by the SPIN 2 through a special signal coming from the LGL box or the flat cable clamp. If the SPIN 2 does not find an acceptable address value (1 to 254), it will set the default value ID = 0, will display the dedicated icon and will inhibit the communication.

In this condition, a valid address must be manually set through the "Device ID setting" menu (see par. 4.2.13.1) to enable the communication.

Remember that, once the ID has been manually assigned, you need to switch the device off and on again to validate the enabling of the serial communication.

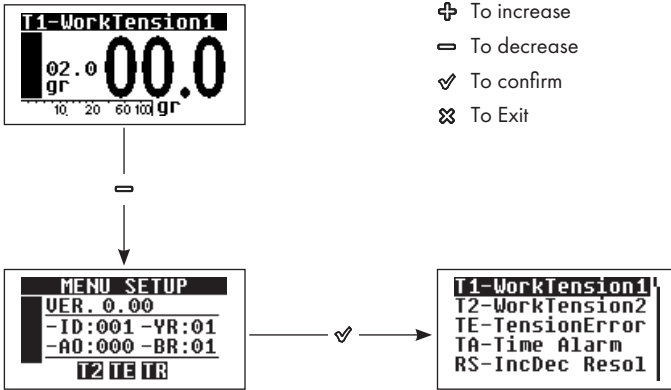
Inhibited Serial Icon:



# 4 - SETTING THE OPERATING PARAMETERS

## Parameter Editing

- + To increase
- To decrease
- ✓ To confirm
- ✕ To Exit



By pressing the "✓" button in the "MENU SETUP" page you enter the parameter editing mode.  
**In this condition, the Led will go on and the machine will Halt.**

## 4.2 PARAMETERS

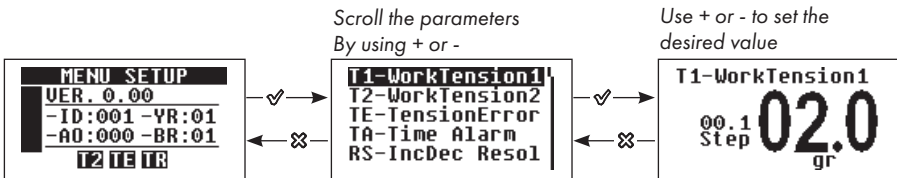
Here follows a progressive list of the main parameters required to programme the accumulator.

### 4.2.1 "T1-WORKTENSION1"

It is the yarn reference tension the SPIN 2 uses when both inputs named "INC" and "DEC" are selected (ON).

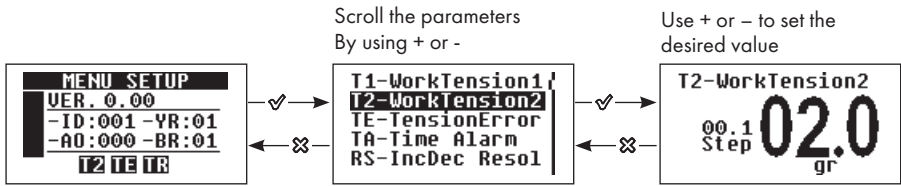
The value can be set from 0.5 gr to 50 gr. By default, this value is set to 1.5 gr.

By simultaneously pressing the buttons "+" and "-" the increase Step value is set. The increase value will alternatively change from 0.1 to 1.0. By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.



## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.2 "T2-WORKTENSION2"



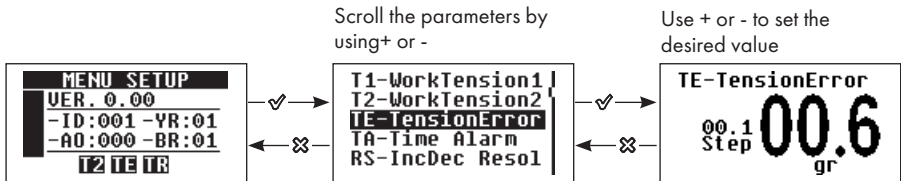
It is the yarn reference tension the SPIN 2 uses when the inputs named "INC" and "DEC" are not selected (OFF).

If the parameter is not set to "OFF", the related icon (T2) in the "MENU SETUP" page will be enabled.

The value can be set to "OFF" or from 0.5 gr to 50 gr. By default the value is set to "OFF".

By simultaneously pressing the "+" and "-" buttons the increase Step value is set. The increase value will alternatively change from 0.1 to 1.0. By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.3 "TE-TENSIONERROR"



It is the maximum yarn tension variation allowed during SPIN 2 operations.

As to the set value. If the yarn tension exceeds the selected reference tension + or - the TE tension, then the "Tension Error" alarm will be actuated. If the measured tensions fall **below 0.4 gr the alarm** is triggered in any case, as this condition is sensed as a yarn breakage.

The TE alarm is enabled by setting a value other than "OFF" to parameter "TA-Time Alarm", in this case, the dedicated icon (TE) will light up in the "SETUP MENU" page.

On the contrary, if parameter "TA-Time Alarm" is set to "OFF", the icon will not show up in the "SETUP MENU" and the Tension Error alarm will **NEVER** be actuated.

Typically, when parameter "AO-Advanced Options" is set to the alarm default value, TE is only actuated when you work with T1, not with T2. However, by enabling/inhibiting the related options in "AO-Advanced Options", you can change its operation (actuation and alarm reset modes).

## 4 - SETTING THE OPERATING PARAMETERS

Examples:

- if the reference tension is set to 4 gr and TE is set to 0.5 gr, the alarm will be actuated, after the "TA-Time Alarm" delay, with tension values greater than 4.6 gr or smaller than 3.4 gr.
- If the reference tension is set to 1 gr and TE is set to 2 gr, the alarm will be actuated, after the "TA-Time Alarm" delay, with tension values greater than 3.1 gr or smaller than 0.4 gr.

The value can be set from 0.1 gr up to 100 gr.

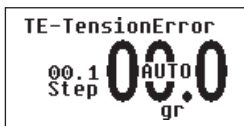
By default, this value is set to 1 gr.

By simultaneously pressing the "+" and "-" buttons the increase Step value is set. The increase value will alternatively change from 0.1 to 1.0.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

**AUTO mode:** starting from version **5.39**, the possibility of setting the "TE-TensionError" function also as a percentage of a fixed value equalling to 80% of the reference value has been introduced.

To obtain the operation expressed as a percentage, set the parameter to 0.

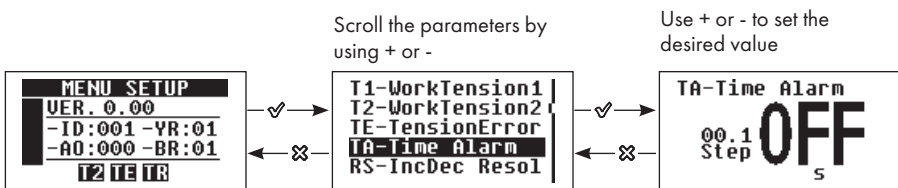


EXAMPLE:

With a reference tension of 5g, 80% is 4g, therefore the thresholds will be set to:

- High threshold = 5 + 4 = 9g
- Low threshold = 5 - 4 = 1g

### 4.2.4 "TA-TIME ALARM"



This is the minimum time during which the yarn tension must exceed the limits set by "TE" (see previous paragraph) in order to actuate the "Error Tension" alarm.

If the yarn tension exceeds the admitted limit values (set tension + or - TE value) for a time shorter than the TA setting, the "Error Tension" alarm will **NOT** be actuated.

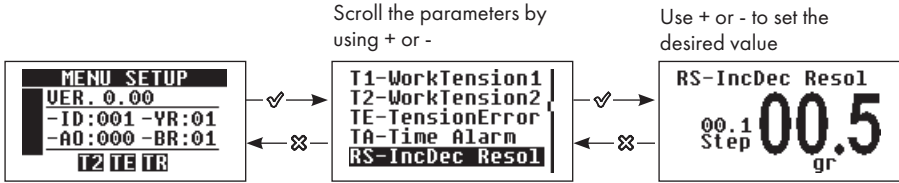
The default setting of this value is "**OFF**".

## 4 - SETTING THE OPERATING PARAMETERS

By simultaneously pressing the "+" and "-" buttons the increase Step value is set. The increase value will alternatively change from 0.1 to 1.0.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.5 "RS-INCDEC RESOL"



This is the tension value by which the reference tension is increased / decreased every time the "INC" / "DEC" signal is ON.

**Note: The INC and DEC pulse time shall be at least greater than 10ms.**

Typically, when parameter "AO-Advanced Options" is set to the default value, the accumulated increases/decreases are zeroed upon passing from T1 to T2. However, by enabling/inhibiting the related option in "AO-Advanced Options", this feature (increase/decrease zeroing mode) can be changed. The accumulated increases/decreases are always zeroed upon powering off both the device Hardware and Software (see chap. 5). By simultaneously pressing the "+" and "-" buttons the increase Step value is set.

The increase value will alternatively change from 0.1 to 1.0.

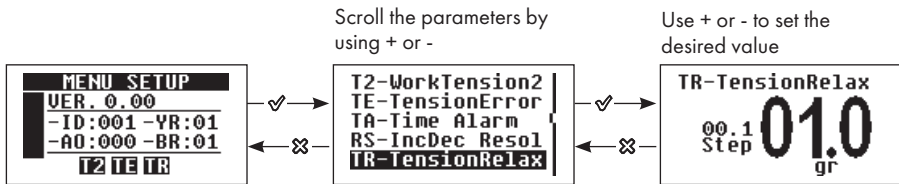
This value can be set from 0.1 gr up to 25 gr.

The default setting of this value is 0.1 gr.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

# 4 - SETTING THE OPERATING PARAMETERS

## 4.2.6 "TR-TENSIONRELAX "



### a) Tension Relax

"TR-TensionRelax" or the Tension Relax function is the reference tension, typically smaller than the work tension, that the device uses when yarn absorption falls below a given threshold. This threshold is set in the "SR-Speed Relax" setting screen.

### b) Wheel Turn Relax

This parameter is actuated by setting "-F1" or "-F2" in "SR-Speed Relax".

If this function is enabled, its set value will be the number of winding turns the wheel will perform when the machine stops absorbing yarn. This action will relax yarn tension at the end of the work cycle

The measurement unit displayed in this page will change from "gr" to "turns" as a function of the set yarn relax mode.

The TR function is enabled by setting parameter "SR-Speed Relax" to a value other than "OFF". In this case, even the related icon (TR) will light up in the "SETUP MENU" page.

Typically, when parameter "AO-Advanced Options" is set to the default value, the relax function is enabled in both T1 and T2 work modes. However, by enabling/inhibiting the related functions in "AO-Advanced Options", its operation (enabling modes for T1 and T2) can be changed.

This value can be set from 0.5 gr up to 50 gr. Or, else, from 0.5 to 50 turns.

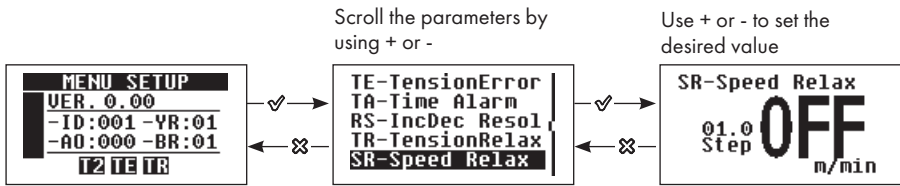
The default setting of this value is 1,5 gr.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.



## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.7 SR-SPEED RELAX



“SR-Speed Relax” parameter stands for the yarn consumption threshold (expressed in m/min) below which the “Tension Relaxation” function is actuated at the value set and entered in parameter “TR-TensionRelax”.

If no speed limit is set in the “SR-Speed Relax” parameter screen (which means it is **OFF**), all relax features are inhibited.

This value can be set as follows:

- “**OFF**” to inhibit whatever relax feature.
- “**-F1**” to enable “Wheel Turn Relax” at 10 m/min in speed.
- “**-F2**” to enable “Wheel Turn Relax” at 30 m/min in speed.
- Values ranging from 3 to 999 m/min to actuate “Tension Relax” at a speed smaller than the set one.

The default setting of this value is “OFF”.

By simultaneously pressing the “+” and “-” buttons the increase Step value is set. The increase value will alternatively change from 0.1 to 1.0. By holding pressed the “X” button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.8 “LC- LENGTH COUNT”



“LC- Length Count” counts the amount of yarn that has been consumed by the feeder. A value in metres is set which corresponds to the yarn length at the end of which the device has to stop (indicating a machine STOP).

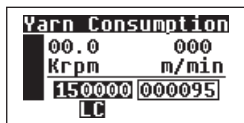
As soon as this value is set, the feeder will start measuring the amount of yarn it consumes. When the pre-set value is reached, the SPIN 2 unit will stop the machine with a count-end alarm “E:LC End” (the orange light will blink).

## 4 - SETTING THE OPERATING PARAMETERS

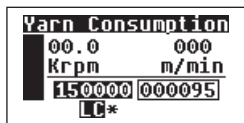
### Yarn Consumption

In the "yarn consumption" page, you can see:

1. The counter reference value
2. The current count value
3. If the function is enabled (LC icon visible at the bottom)

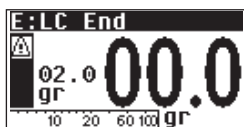


Function enabled with alarm signal when the count is over



Function enabled with cutter, yarn cutting when the count is over

### LC End



This alarm can be reset by pressing X in the main page. When the alarm is reset, the counter is reset, too.

By simultaneously pressing the keys + and -, the increase Step value is set. The latter may vary from 1 to 100 to 10000.

By holding the X key pressed for 3 seconds, the counter will be reset and the text OFF will be displayed.

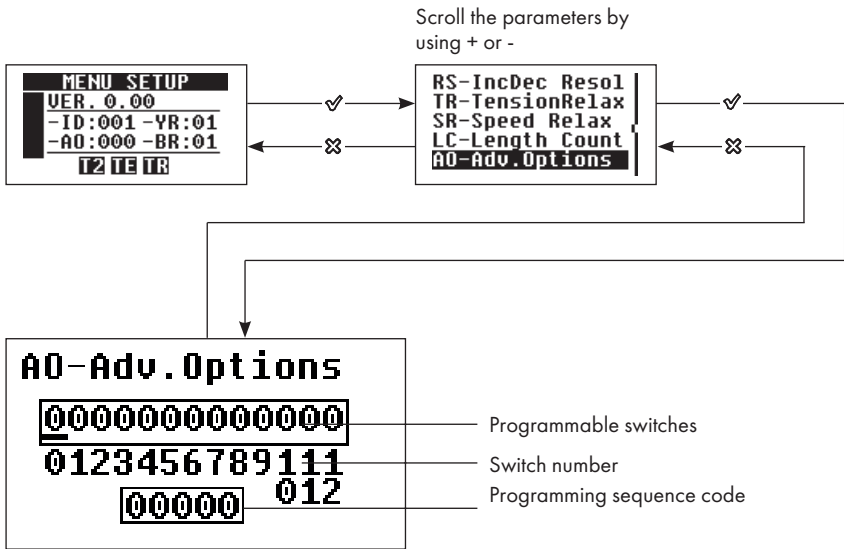
Note 1: to reset the set meter parameter, enter "MENU SETUP" → "LC-Length Count" and turn off the function. By pressing the key X for 3 seconds. The value is reset to zero and the text OFF will be displayed.

Note 2: Starting from version 5.20, in order to reset the meter counter in cases when the user wants to restart from zero, you can access the "Yarn Consumption" page and simultaneously press the keys "X", "-", and "√".

Note 3: It is possible to reset to zero the counter of dispensed meters also serially, either by disabling and re-enabling the function, or via the special value "9" sent to the "Command" parameter.

# 4 - SETTING THE OPERATING PARAMETERS

## 4.2.9 "AO-ADV.OPTIONS" (ADVANCED OPTIONS)



This parameter provides 8 programmable switches (0-1).

Commands:

- ⊕ = To move the cursor among the switches.
- ✓ To toggle the switch state (0 to 1 or 1 to 0).
- ⊗ To confirm the selection displayed and go back to the previous page.

Quick mode to load default options:

Hold pressed the "X" button for about 3 seconds to zeroes all options (default value).

**N.B: When the devices are managed from the Pocket unit or from the KYC unit, the value of "AO-Adv.Options" shall be written in hexadecimal characters.**

**E.g.: If I want to set DS1, I need to write 128 in the programming sequence code (the corresponding hexadecimal number).**

## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.9.1 SWITCH FUNCTIONS

AO-0 - INC/DEC SIGNAL POLARITY	0=NO	1=NC	From version 5.00
AO-1 - STOP SIGNAL POLARITY	0=NO	1=NC	From version 5.00
AO-2 - INC/DEC GRADUATION RESET	0=T1 → T2	1= DEDICATED PROCEDURE	From version 5.00
AO-3 - "TE-Tension Error" ALARM POSITION	0=ENABLED ONLY ON T1	1=ENABLED ON T1 & T2	From version 5.00
AO-4 - "TE-Tension Error" ALARM RESET	0=AUTO	1=MANUAL	From version 5.00
AO-5 - LED BLINKING RESET (Led blinking due to "TE-Tension Error alarm")	0=T2 → T1	1=T1 → T2	From version 5.00
AO-6 - STOP SIGNAL RESET (stop signal due to "TE-Tension Error" alarm)	0=T1 → T2	1=MAI	From version 5.00
AO-7 - (BIT 1) AO-8 - (BIT 0)	FUNCTION POSITION "TR-Tension Relax"	0-0 = ENABLED ON T1 AND T2 0-1 = ENABLED ON T1 1-0 = ENABLED ON T2 1-1 = ENABLED BY DEDICATED PROCEDURE	From version 5.00
AO-9 - I <sup>2</sup> t	0 = WARNING	1 = ALARM	From version 5.12
AO-10 - CUTTER OPTION	0 = NOT ENABLED	1 = ENABLED	From version 5.18
AO-11 - "YARN WINDING" STATUS managed by INC signal	0 = NO	1 = INC OFF → ON ENABLED INC ON → OFF ENABLED	From version 5.21
AO-12 - MECHANICAL STOP SENSOR IF DEC SIGNAL, OPTICALSTOP SENSOR ON INC SIGNAL	0 = NOT ENABLED	1 = ENABLED	From version 5.32

**Note: Position 0 is the default one for all options.**

## 4 - SETTING THE OPERATING PARAMETERS

### SWITCH 0: INC/DEC SIGNAL POLARITY

0 = NO 1 = NC

If set to 1, the INC/DEC signal interpretation logic is reversed.

AO-0 - INC/DEC POLARITY= 0

INC	DEC	
1	1	= T1
0	0	= T2

AO-0 - INC/DEC POLARITY = 1

INC	DEC	
1	1	= T2
0	0	= T1

### SWITCH 1: STOP SIGNAL POLARITY

0 = NO 1 = NC

If set to 1, the STOP signal signalling logic is reversed.

AO-1 – STOP POLARITY = 0

STOP	
1 =	STOP ENABLED
0 =	STOP INHIB

AO-1 - POLARITÀ STOP = 1

STOP	
1 =	STOP INHIBITED
0 =	STOP ENA

# 4 - SETTING THE OPERATING PARAMETERS

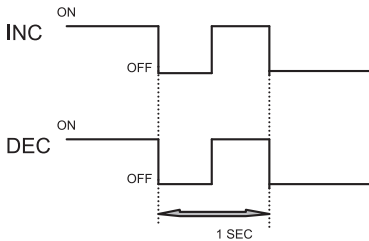
## SWITCH 2: INC/DEC GRADUATION RESET

**0 = T1 → T2**  
**1 = SEE PROCEDURE**

INC & DEC graduation reset mode.

AO-2 - RESET GRADUATION INC/DEC = 0	Graduations are reset while moving from T1 to T2. <b>N.b.: If T2 is "OFF" the reset takes place at the same time when the INC/DEC signals switch from ON to OFF. Or from OFF to ON if the "AO-0 - INC/DEC SIGNAL POLARITY" option is set to 1.</b>
AO-2 - RESET GRADUATION INC/DEC = 1	Graduations are only reset via the special timed sequence. The sequence consists in setting both the INC and DEC signals to OFF, then to ON and finally back to OFF, within a time not greater than 1 second. <b>N.b.: please bear in mind that if the "AO-0 - INC/DEC SIGNAL POLARITY" option is set to 1, the sequence logic is revers</b>

PROCEDURE:



## SWITCH 3: "TE-Tension Error" ALARM POSITION

**0 = ENABLED ON T1 ONLY**  
**1 = ENABLED ON T1 AND T2**

It defines the work position (defined by the INC/DEC signal state) where the Tension Error alarm is enabled, namely where it is ready to operate in cases when Tension exceeds the limit range.

**N.b.:**

- This option does not set the position where the alarm is released, it only sets the position where it gets ready to operate.
- Please consider that the T1 position as to the INC/DEC signals depends on how the option "AO-0 - INC/DEC SIGNAL POLARITY" is set.

AO-3 - "TE" ALARM POSITION = 0T2.	T1 The Tension Error is only enabled in T1, not in T2.
AO-3 - "TE" ALARM POSITION = 1	T1 & T2 The Tension Error is enabled in both T1 and T2.

## 4 - SETTING THE OPERATING PARAMETERS

### SWITCH 4: "TE-Tension Error" ALARM RESET

**0 = AUTO**  
**1 = MANUAL**

It defines whether the Tension Error alarm must be automatically released when the tension falls back into the range set for the "TE-Tension Error" parameter, or has to be manually released via the ESC button or upon indication of the dedicated command on the INC & DEC inputs.

AO-4 - "TE" ALARM RESET = 0	AUTO It automatically leaves the "Tension Error" alarm state When tension falls back into the range.
AO-4 - "TE" ALARM RESET = 1	MANUAL It only leaves the "Tension Error" alarm state by pressing the ESC button on the display unit or via the indication from the reset command on the INC & DEC signals. <b>N.b.: the reset command on the INC/DEC signals depends on the way the AO-5 and AO-6 options are set.</b>

## 4 - SETTING THE OPERATING PARAMETERS

### SWITCH 5: LED BLINKING RESET (Led Blinking due to "TE-Tension Error" alarm)

**0 = T2 → T1**  
**1 = T1 → T2**

It defines the reset mode of the "TE-Tension Error" alarm display (blinking Leds) related to the INC/DEC signals.

#### **N.b.:**

- **Please bear in mind that the T1 position as to the INC/DEC signals depends on how the "AO-0 - INC/DEC SIGNAL POLARITY" option is set.**
- **Remember that the reset is controlled by the INC/DEC signal changeover. Hence it will be performed in any case, even if the T2 parameter is set to OFF.**

AO-5 - LED BLINKING RESET (Led blinking due to a "TE" alarm) = 0	T2 → T1 Changeover from T2 to T1.
AO-5 - LED BLINKING RESET (Led blinking due to a "TE" alarm) = 1	T1 → T2 Changeover from T1 to T2.

#### **Examples:**

##### **LED BLINKING RESET (Led blinking due to a "TE" alarm) = 0**

If the device is in T1 and goes into alarm, the alarm condition display will only be reset by switching the device to T2 and then back to T1 through the INC/DEC signals.

##### **LED BLINKING RESET (Led blinking due to a "TE" alarm) = 1**

If the device is in T1 and goes into alarm, the alarm condition display will only be reset by switching the device to T2 through the INC/DEC signals.

**N.B.: please read the indications provided below for switch 6.**



## 4 - SETTING THE OPERATING PARAMETERS

### SWITCH 6: STOP SIGNAL RESET (Stop signal due to a "TE-Tension Error" alarm)

**0 = T1 → T2**  
**1 = NEVER**

It defines how to reset a "STOP" due to a "TE-Tension Error" alarm occurrence through the INC/DEC signals.

#### **N.B.:**

- Please bear in mind that the T1 position as to the INC/DEC signals depends on how the "AO-0 - INC/DEC SIGNAL POLARITY" option is set
- Remember that the reset is controlled by the INC/DEC signal changeover. Hence it will be performed in any case, even if the T2 parameter is set to OFF.

AO-6 - STOP SIGNAL RESET (Stop signal due to a "TE" alarm)	T1 → T2 Changeover from T1 to T2.
AO-6 - STOP SIGNAL RESET (Stop signal due to a "TE" alarm)	NEVER In this case, the STOP signal reset does not depend on the state of the INC/DEC signals. It will remain ON when the device is in alarm. Hence, the STOP signal is released when the alarm is reset, e.g. when the operator resets it through the ESC button or when the measured tensions fall back into the set range.

#### **Examples:**

##### **STOP SIGNAL RESET**

##### **(stop signal due to a "TE" alarm)**

If the device is in T1 and goes into alarm, the STOP signal is reset by switching the device to T2.

##### **STOP SIGNAL RESET**

##### **(stop signal due to a "TE" alarm)**

If the device is in T1 and goes into alarm, the STOP signal does not depend on the state of the INC/DEC signals. Hence, the reset is only performed when the alarm is reset.

**N.B.:** if AO-6=1, AO-5 becomes void.

**When AO-6=1, the Led will always blink in the presence of an alarm. It will only stop when the alarm has been reset.**

# 4 - SETTING THE OPERATING PARAMETERS

## SWITCHES 7 & 8: POSITION OF THE "TR-Tension Relax" FUNCTION

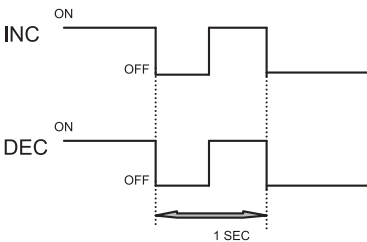
It defines the work position (dictated by the state of the INC/DEC signals) that has the relax function enabled, i.e. ready to be actuated.

**N.B.:**

- **This option does not set the operating condition FOR the function, but only the time when it is ready to be actuated.**
- **Remember that the position of T1 and T2 as to the INC/DEC signals depends on the way the "AO-0 - INC/DEC SIGNAL POLARITY" option is set.**

AO-7 and 8 - POSITION OF FUNCTION "TR-Tension Relax" = 0-0	ENABLED IN T1 AND T2 The relaxation function is enabled in both work positions T1 and T2.
AO-7 and 8 - POSITION OF FUNCTION "TR-Tension Relax" = 0-1	ENABLED IN T1 The relaxation function is only enabled in T1, not in T2.
AO-7 and 8 - POSITION OF FUNCTION "TR-Tension Relax" = 1-0	ENABLED IN T2 The relaxation function is only enabled in T2, not in T1.
AO-7 and 8 - POSITION OF FUNCTION "TR-Tension Relax" = 1-1	ENABLED VIA A DEDICATED PROCEDURE The relaxation function is only enabled in following the actuation of the dedicated timed PROCEDURE. The sequence consists in setting both the INC and DEC signals to OFF, then to ON and finally back to OFF, within a time not greater than 1 second. <b>N.b.: Please bear in mind that if the "AO-0-INC/DEC SIGNAL POLARITY" option is set to 1, the sequence logic is reversed.</b>

PROCEDURE:



# 4 - SETTING THE OPERATING PARAMETERS

## Examples:

### **AO-7 and 8 = 0 - 0 ENABLED IN T1 AND T2**

The relaxation function is always enabled, independent of the state of the INC/DEC signals.

### **AO-7 and 8 = 0 - 1 ENABLED IN T1**

The relaxation function is only enabled in T1.

### **AO-7 and 8 = 1 - 0 ENABLED IN T2**

The relaxation function is only enabled in T2.

### **AO-7 and 8 = 1 - 1 ENABLED VIA A DEDICATED PROCEDURE**

The relaxation function operates in different ways as a function of the yarn relaxation type:

- Tension Relax

The relaxation function is only enabled following receipt of the dedicated timed procedure.

After that, it is only run when the yarn feeding speed falls below the threshold set in "SR-Speed Relax", and the device switches to T2.

The function is inhibited when the yarn feeding speed is reinstated or the device switches to T1.

- Wheel Turn Relax (special functions F1 and F2 in parameter "SR- Speed Relax").

The relax function is only enabled following receipt of the dedicated timed procedure.

After that, it is run in T1 and T2, only when the yarn feeding speed falls to 0.

The function is inhibited when the device receives increases or decreases.

## **SWITCH 9 (from version 5.12): I<sup>2t</sup> ALARM**

**It defines the feeder status when an I<sup>2t</sup> alarm goes off.**

AO – 9 = 0 I <sup>2t</sup> alarm	Warning: the feeder continues to operate. The orange lights will flash fast three times.
AO – 9 = 1 I <sup>2t</sup> alarm	Alarm: the feeder stops the machine. The orange lights will flash once per second. To reset the alarm you need to turn off the feeder (chap. 5) and remove the cause that triggered it.

## 4 - SETTING THE OPERATING PARAMETERS

### SWITCH 10 (from version 5.18): CUTTER OPTION

To be used in combination with a cutter, that is a yarn-cutting device. This option is linked to parameter "LC - LENGHT COUNT" (par. 4.2.8).

AO - 10 = 0	Cutter option not enabled.
AO - 10 = 1	Cutter option enabled: when the feeder reaches the amount of tarn pre-set in parameter "LC - LENGHT COUNT", it sends a signal to the cutter to cut the yarn.

### SWITCH 11 (from version 5.21): STATUS "YARN WINDING" MANAGED VIA INC SIGNAL

AO - 11 = 0	Option not enabled.
AO - 11 = 1	"YARN WINDING" status managed via INC signal INC OFF → ON the feeder enters the "YARN WINDING" status INC ON → OFF the feeder exits the "YARN WINDING" status

### SWITCH 12 (from version 5.32): INPUT STOP SENSOR

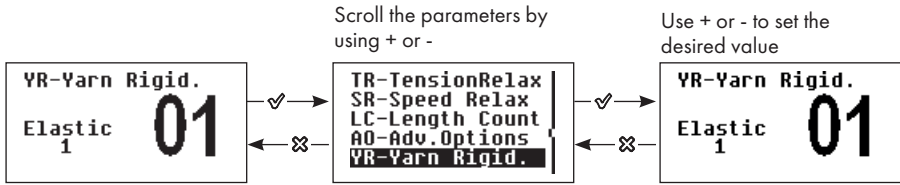
This option provides for the installation of a mechanical sensor that stops the machine in the event of a yarn break at the feeder input.

This sensor is managed via the DEC signal of the feeder.

AO - 12 = 0	Input sensor not enabled. DEC signal normally managed.
AO - 12 = 1	Input sensor enabled. The DEC signal turns into the STOP signal.

# 4 - SETTING THE OPERATING PARAMETERS

## 4.2.10 "YARN RIGID." (YARN RIGIDITY)



In this menu, you can set the yarn tension as a function of rigidity of the yarn being used.

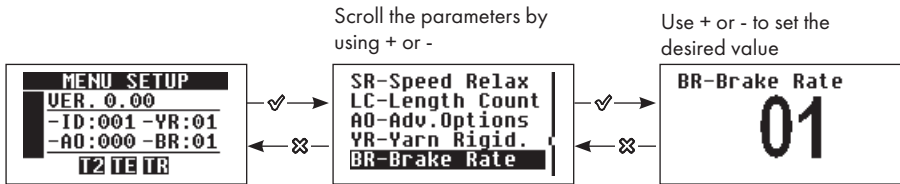
For elastic yarns, a low "YR" value must be set, whereas for rigid yarns a high "YR" value is required.

Coated elastic yarn	1
Plain elastomer	2
Rigid yarn	<b>3 to 5</b> as a function of yarn rigidity

This value can be set from 1 to 5. The default setting is 1.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

## 4.2.11 "BRAKE RATE"



In this menu the Braking Rate can be selected. From minimum (BR=0) to maximum (BR=3).

**Note: BR=3 for stronger braking when tension falls below 0.3 g.**

The default setting is 1.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.12 "OFFSET CALIB" (CELL OFFSET CALIBRATION)

**N.b.:** for the Cell Offset Calibration procedure, see also par. 3.1.



#### **WARNING!!!**

**Prior to threading, ensure that the accumulator is temperature-stabilised with its surroundings.**

**We suggest you wind the wire 15 minutes after power-on, provided that the Offset Calibration has been performed.**

This menu is used to perform the zero (or Offset) calibration of the measuring cell.

Depending on the position the SPIN 2 has on the machine, the ZERO point of the measuring cell may vary due to the actual weight of the cell. To reset the cell weight, the zero calibration needs to be performed. The zero calibration process is performed by positioning the SPIN 2 in the desired required work position, by removing the yarn or any other body possibly coming into contact with the measuring cell and then pressing the " $\sqrt{\quad}$ " button to actuate the automatic zero calibration (or calibration offset) procedure.

**N.B.:** The Offset procedure can be simultaneously carried out on all of the devices if they are linked to the "LGL Pocket" or the "LGL Connect" in a serial connection, by setting the "Command" parameter to "1".



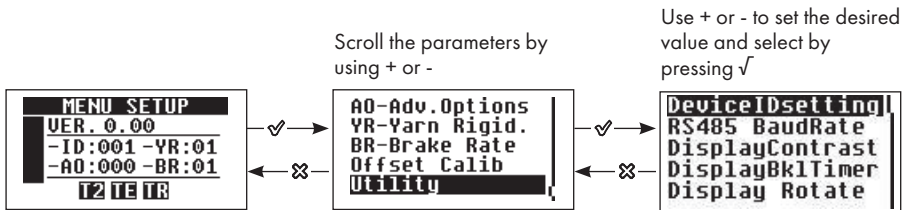
#### **WARNING!!!**

**Prior to performing the zero calibration, ensure that the SPIN 2 is temperature-stabilised with its surroundings. If necessary, check temperature again and repeat the zero calibration procedure 15 minutes after power-on, if it has just been removed from its packing.**

In cases when the device remains switched off for a long time (a few days) and during that time the room temperature has undergone major changes (changes greater than  $8/10^{\circ}\text{C}$ ), it is good rule to switch on the device, let it reach the required temperature for at least 20 minutes and then perform the offset calibration procedure before starting the work cycle.

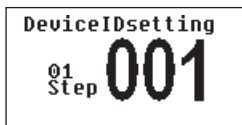
## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.13 "UTILITY"



In the "Utility" submenu, a number of settings can be made in connection with device management, as described in the following paragraphs.

#### 4.2.13.1 "DEVICEIDSETTING"



ID = SPIN 2 identification address. It is needed by the SPIN 2 for serial communication with the outside world.

This value can be set from 1 to 254.

This address is automatically set by the SPIN 2 if connected to the LGL box or to the flat cable terminal clamp with included numbers. In this case, the ID cannot be manually edited via the "Device ID setting". Hence, it will remain set to "OFF".

In installations where the ID data is not set from the outside (on the system), the above-mentioned menu can be accessed and the desired address can be assigned by means of the " $\oplus$ " and " $\ominus$ " buttons.

Please note that if no external address is provided and neither has it been assigned manually, the communication will be inhibited and the related warning message will appear on the display unit accordingly (see par. 4.1 dealing with the "SETUP MENU" page).

The default value, when no external address is provided, is "OFF".

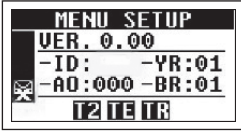
**Remember that, once the device ID has been manually assigned, you need to switch the unit OFF and then back ON to validate the actuation of the serial communication.**

By simultaneously pressing the "+" and "-" buttons the increase Step value is set. The increase value will alternatively change from 01 to 10.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

# 4 - SETTING THE OPERATING PARAMETERS

No ID



External ID



Internal ID



## ASSISTED AUTOMATIC ADDRESSING (FIRMWARE RELEASE 5.10)

“Scan ID” and LGL3A “Automatic Addressing Assisted” functions, for ID assignment to the devices.



Starting from version 5.10, 2 new functions have been added to the “DeviceID Settings” menu to allow ID assignment to the devices. To access these new functions you need to press the “-” key after reaching the “OFF” value.

**NOTE: These Special Functions require that no MASTER device be connected along the line. Then disconnect any Gateway, Connect, KYC etc. possibly connected.**

“-F1” = Scan ID





## 4 - SETTING THE OPERATING PARAMETERS

The device scans all IDs from 1 to 254 for the first unused ID. When an available ID is found, the number displayed in the small box will be negative.

- √ hold pressed for 3 sec to START the scanning;
- - access the "-F2" function; + go back to the "OFF" value;
- √ X 1 click to leave the current menu;

When a free ID has been found

- √ hold pressed for 3 sec to store the found ID;
- X hold pressed for 3 sec to look for another available ID;

### "-F2" = LGL3A "Automatic Addressing Assisted"

The device commands the procedure to assign the ID to all devices connected along the communication line. The procedure is based on the use of 3 "Broadcast" commands sent along the serial line: **START, CONTINUE and STOP** commands.

The START and STOP commands are sent from the "-F2" page of the device chosen as MASTER.

The CONTINUE commands are sent by all the other "SLAVES" devices when the ID is confirmed.

It is good practice to manage the assisted automatic addressing procedure from the device you wish to number as last in the series.

In the small box you may choose the ID assignment starting number.



- + - to set the addressing starting value or go back to the previous page (-F1).

**Note: - increases + decreases the value in the box.**

- √ hold pressed to repeatedly send the START command every 50/100 ms.
- X hold pressed to repeatedly send the STOP command every 50/100 ms. Use this command to cancel the ID assignment procedure and remove all the devices that had previously received a START command from the "Confirm Dev. ID" page.

When the START command is sent by the device chosen as "MASTER", all the other "SLAVES" devices will start flashing the LED and jump into the special "Confirm Dev. ID" page, where the first number of the sequence will be proposed.

When the proposed ID is confirmed on the SLAVES devices, each one will send a CONTINUE command along the line.

The CONTINUE command also contains the subsequent ID value to be assigned to the other devices. Continue with this operation until the MASTER device is reached, then proceed with its manual numbering.

## 4 - SETTING THE OPERATING PARAMETERS

"Confirm Dev. ID" page on "Slave" devices.



- $\sqrt{\quad}$  click to CONFIRM the proposed ID.
- X click to LEAVE the LGL3A function.
- + - to modify the proposed value. Note: Use this function to correct the ID value in cases when the device has not been able to receive the CONTINUE command sent upon confirmation of a previous "SLAVE".

### 4.2.13.2 SERCOM SETTINGS

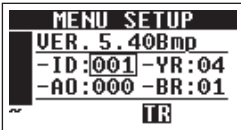
01: RS485 communication protocol 38400 speed

02: RS485 communication protocol 9600 speed

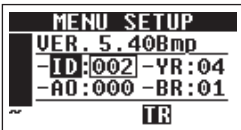
03: CAN BUS communication protocol

04. STOP ON SER (from version 5.10): if the feeder does not receive CAN messages within the first 90 seconds after start-up, communication will be discontinued and the BUS will be used to send a simple STOP signal to the feeder.

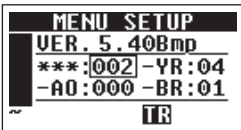
RS485 ("ID" displayed in normal mode)



Can Bus ("ID" displayed in negative mode)



STOPonSER ("\*\*\*" 3 stars)



## 4 - SETTING THE OPERATING PARAMETERS

### 4.2.13.3 "DISPLAY CONTRAST"

DisplayContrast  
**20**  
Step

The display contrast can be adjusted as a function of the existing lighting conditions. This parameter can vary from a minimum value of 15 to a maximum value of 45; The adjustment is made by using the keys + and -. The set parameter is entered upon pressing the key  $\sqrt{\quad}$ .

### 4.2.13.4 "DISPLAYBKLTIMER"

DisplayBkltimer  
**OFF**  
01 Step  
s

The display backlighting feature can either be ON continuously (which is not recommended due to the backlighting lamp wearing out over time) or set to only light up when buttons are pressed.

The time required by the backlighting lamp to light up after a button is pressed can be set in seconds:

- from 0 ("OFF") = always ON
- to a maximum of 900 seconds (15 minutes).

Once the set light-up time has elapsed, the light will go out. The default setting is 60 seconds. By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.13.5 "DISPLAY ROTATE"

Display Rotate  
**OFF**

Display view rotation.

## 4 - SETTING THE OPERATING PARAMETERS

In cases when the textile application requires the yarn to move bottom-up and the SPIN 2 to be fitted with the outlet mounted upwards, the use of the menus can be made simpler by turning the view on display by 180°.

OFF = Normal view

1 = View rotated by 180°

The default value is **"OFF"**.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.13.6 "LANGUAGE"



Setting of the language of messages appearing on display.

0 = English

1 = Chinese

The default setting is 0 = English.

By holding pressed the "X" button for 3 seconds, the minimum value that the parameter can take is set.

### 4.2.13.7 "PWRLIM LEV" (FROM VERSION 5.09)



Power Limit Level: it is the parameter used to limit the feeder performance when the device is not powered by the LGL box or by a suitable power supply.

The settable values range from 0 to 4, from version 5.12 the settable values range from 0 to 6.

0 = 8A

1 = 7A

2 = 6A

3 = 5A

4 = 4A

## 4 - SETTING THE OPERATING PARAMETERS

5 = 3A

6 = 2A

When the limitation is enabled, the limitation icon represented by the "=" symbol is displayed in the "MENU SETUP" page at bottom left.

### 4.2.13.8 "CELL WARMINGUP" (FROM VERSION 5.28)

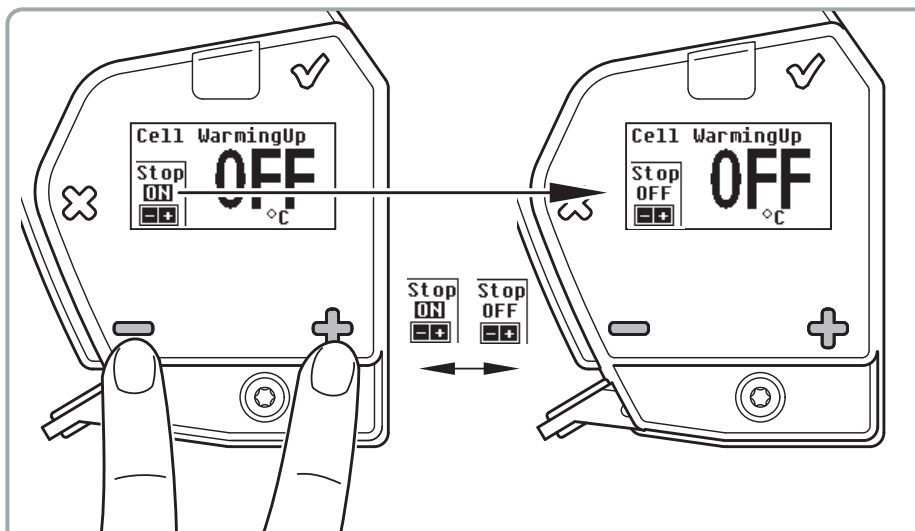
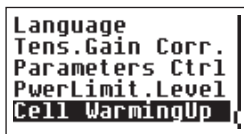
When the function is enabled, the device keeps the motor inhibited upon start-up until the temperature inside the device reaches the threshold set by the user.

The function is enabled by setting a °C value ranging between 18°C and 60°C.

The function can be enabled in two modes:

1. Alarm Mode (Stop Option = ON). In this case, while the device keeps the motor inhibited waiting for the set temperature to be reached, the machine also receives the STOP signal.
2. Warning Mode (Stop Option = OFF). In this mode, while the device keeps the motor inhibited waiting for the set temperature to be reached, the STOP signal is not sent to the machine.

From the "Cell WarmingUp" menu, use the "+" or "-" key to increase or decrease the temperature value. Simultaneously press the "+" and "-" keys to enable /disable the machine STOP signalling function.



## 4 - SETTING THE OPERATING PARAMETERS

### 4.3 DEVICE CONTROL VIA SERIAL COMMUNICATION

In some applications, control of device parameters is performed from the knitting machine. In this condition, the following blinking icon will show up in the icon side bar:



In this circumstance, some parameters can not be managed from the device keyboard. They can only be managed from the knitting machine control panel.

Here follows a list of the blocked parameters:

- "T1-WorkTension1";
- "T2-WorkTension2";
- "TE-TensionError";
- "TA-Time Alarm";
- "TR-TensionRelax";
- "SR-Speed Relax";
- "AO-Adv.Options";
- "YR-Yarn Rigid.";
- "BR-Brake Rate".

In cases when the "Serial Communication Control" feature is enabled, the related blocked parameter icon will be displayed on entering the blocked parameter editing page:



**Note: the SPIN 2 parameters can also be managed via the POCKET (A7N2S750) terminal unit and cable (A3N1SA1204), or via the KYC (Connect) device.**

The list of parameters that can be found on the Pocket/KYC is similar to that on the SPIN 2 display, except for:

1. Parameter "LC-Lenght count". The Pocket/KYC features 2 parameters to set the reference value: "LC-LnCn m" (reference value in metres) and "LC-LnCn Km" (reference value in Kms). If the spool is 36,300 metre long, you set "LC-LnCn Km" = 36 and "LC-LnCn m" = 300. Moreover there are 2 parameters for the real-time measurement of the consumed yarn: "LCMeas. m" and "LC-Meas. Km" to measure the metres and the Kms counted by the counter unit.
2. Parameter "TD-Des. Dgr": active tension. Via the Pocket device the operator can change the tension on the SPIN 2 by acting on this parameter. If T1 is active on the SPIN 2, by changing "TD-Des. Dgr" T1 changed, too. If T2 is active, by changing "TD-Des. Dgr", T2 also changes.
3. Parameter "SC-SerCont": this parameter allows the feeder to be controlled from display unit and from Pocket/KYC device or, alternatively, from Pocket/KYC device only.  
"SC-SerCont" = 0 Pocket/KYC device and Display Control  
"SC-SerCont" = 2 Control only from Pocket/KYC device. The SPIN 2 display is locked.

## 5 - DEVICE TURN-OFF

The SPIN 2 can be switched off either by cutting off the power supply and thereby powering the unit down, or holding the "X" button pressed for 5 seconds. Thus, the device can be "switched OFF" and left connected to the system.

### 5.1 HARDWARE TURN-OFF

The SPIN 2 is turned OFF when it is cut off from the power mains.

The device acknowledges the turn-off request, turns off the motor and stores the basic operating parameters into its permanent flash memory.

Moreover, all alarms are reset.

### 5.2 SOFTWARE TURN-OFF



The turn-off action allows the device to remain installed, but inhibited (as if cut off from the power mains) in cases when the treatment to be performed does not require the SPIN 2 unit to operate and check yarn tension.

The SPIN 2 unit can be manually "turned off" by holding pressed the "X" button for about 5 seconds.

The manual turn-off state will also perform the following operations:

- the motor will be switched off;
- the text "SPIN 2 OFF" will appear on the display unit;
- the basic operating parameters will be stored in the permanent flash memory;
- all the alarms will be reset;
- any accumulated yarn increases/decreases will be set to zero;
- the serial communication will be inhibited;
- the machine Stop signal (if any) will be inhibited.

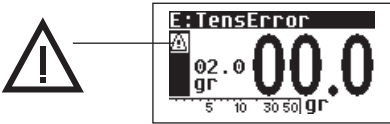
The device's OFF status remains stored into the system and will persist even if the SPIN 2 is physically switched OFF and ON again.

Press the Enter "√" button to exit the inhibit state.

**N.b.: In the event of a "Power Down" alarm, you will not be able to manually switch off the device.**

## 6 - MESSAGES AND ALARMS

The actuation of a message or an alarm is shown on the top line of the display unit, along with the general warning icon blinking on the top in the icon side bar.



### 6.1 MESSAGES

Messages generally are meant to informing the operator on special states reached by the device.

"Messages" are different from "alarms" in that the orange (front and rear) lights do not blink and the SPIN 2 continues operating normally.

The orange lights will flash fast three times.

#### 6.1.1 "I2T"

Indication of limitation for motor "I2T" (I square T).

It occurs when the average current absorption is too high and the device limits the current supply to the motor. Work is still possible, but performance will be reduced until the absorption regains the safety range.

See also parameter "Advanced options" switch 9 in chapter 4.

#### 6.1.2 "DECUNDERFLOW"

This message shows up when, after a number of decrease commands, the minimum reference tension threshold is reached.

It will automatically disappear when the accumulated "increases" and "decreases" of the set tension are zeroed. This will also occur when the device is turned off either in the Hardware and in the Software mode.

#### 6.1.3 "INCOVERFLOW"

It shows up when the minimum reference tension threshold is reached, following a number of increase commands.

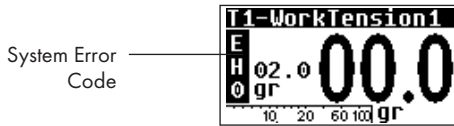
It will automatically disappear when the accumulated "increases" and "decreases" of the set tension are zeroed. This will also occur when the device is turned off either in the Hardware and in the Software mode.



# 6 - MESSAGES AND ALARMS

## 6.1.4 SYSTEM ERROR DISPLAY

An “E” followed by an error code appears in the icon area on the display unit as in the example provided below:



These system errors are useful to LGL technicians. In cases when such Error Codes appear on the display unit, please contact LGL Customer Service. The alarm LED does not blink and the SPIN 2 unit continues running.

Please consider that, in these cases, the general warning icon (a triangle with an exclamation mark) will not appear on the screen.

## 6.1.5 SPECIAL ICONS

Please contact LGL Customer Service in cases when the following icons appear in the icon side bar.



## 6.2 ALARMS

Alarm states are always signalled by the SPIN 2 unit by causing the orange Leds to blink and by sending a stop signal to the machine.

### 6.2.1 WEAVING ALARMS

These alarms can be reset by pressing the “X” button or directly from the machine (via INC/DEC interface or serial communication).

With these alarms ON, the SPIN 2 unit continues supplying yarn for about 5 metres and then switches off the motor.

- **“OverFeed”**: Yarn Overfeed Error. It is actuated when the SPIN 2 unit reads on the cell a yarn tension that exceeds the desired value but cannot adjust the yarn tension, though turning at the maximum speed. Ensure the yarn does not slip on the feeding wheel. Possibly add one or two coils.

## 6 - MESSAGES AND ALARMS

- **“TensError”**: Tension Error. It is actuated when the measured tension exceeds the limit values set in the “TE-TensionError” parameter, and only if the “TA-Time Alarm” parameter is other than “OFF” (See par. 4.2.3 and par. 4.2.4). (vedere par. 4.2.3 e par. 4.2.4). Moreover, the conditions that actuate this alarm also depend on the settings of the “AO-Adv.Options” parameter (see par. 4.2.9).

### 6.2.2 CELL ALARMS

When these alarms are actuated, the SPIN 2 will immediately power OFF the motor. They can only be reset by switching off the device (see chap. 5).

If the cause that actuated the alarm has not been removed upon turning on the unit again, the alarm will be actuated again. In this case, send the accumulator to an LGL customer service point.

- **“I Max”**: Maximum overcurrent error detected within the motor.
- **“Motor Lock”**: Motor lock error. This message is displayed when the accumulator cannot move the yarn feeding wheel although a strong current is fed into the motor. Ensure the yarn is not jammed is not caught between the spool and the accumulator input.
- **“I Calib”**: Motor current offset calibration error.
- **“Hall Sens”**: Motor Hall sensor reading error.
- **“Fuse”**: Fuse activation error. The internal fuse is electrically open or blown.If this is the case, please send the unit to an LGL Customer Service point.
- **“V Low”**: Low voltage error. The SPIN 2 power supply voltage is LOWER than the minimum voltage allowed. Check supply voltages.
- **“V High”**: High Voltage Error. The SPIN 2 power supply voltage is HIGHER than the maximum voltage allowed. Check supply voltages.
- **“Temp High”**: Motor temperature/overheating error.
- **“Motor Cal”**: Motor calibration error.

### 6.2.3 CELL ALARMS

When these alarms are actuated, the SPIN 2 will immediately power OFF the motor. They can only be reset by switching off the device (see chap. 5).

If the cause that actuated the alarm has not been removed upon turning on the unit again, the alarm will be actuated again. In this case, send the accumulator to an LGL customer service point.

- **“OFS Cell”**: Cell Offset calibration error. Check the Offset (see procedure in par. 3.1)
- **“GDN Cell”**: Cell gain calibration error.
- **“VRef Cell”**: Cell reference threshold error.
- **“Ack Cell”**: Cell acknowledgement error.
- **“ReadAvCell”**: Cell signal average calculation error.

## 6 - MESSAGES AND ALARMS

### 6.2.4 POWER DOWN ALARM

The **\*POWER DOWN\*** alarm is actuated when the device power supply falls below a threshold value which does not guarantee flawless system operation any longer.

In this state, the SPIN 2 will immediately switch off the motor and store the operating parameters in the permanent flash memory.

In this case, it is good rule to cut off the power supply to the device and check that power supply voltage falls within the admitted values.

***N.B.: In the event of a Power Down occurrence, the device cannot be switched off in manual mode. To reset the device, first disconnect it from the power supply, then immediately reconnect it.***

### 6.2.5 DISPLAY ALARMS

These alarms are actuated by internal software errors. Please notify LGL immediately if any of the following alarms is actuated.

When these alarms are actuated, the SPIN 2 unit immediately switches off the motor. They can only be reset by turning off the device (see chap. 5).

If the cause that actuated the alarm has not been removed upon turning on the unit again, the alarm will be actuated again.

- **“Display Data”**.
- **“Display Ctl”**.
- **“Display Text”**.
- **“Display Inv”**.

### 6.2.6 SELF-DIAGNOSTIC FUNCTION OF SERIAL COMMUNICATION LINE

The Self-diagnostic function can signal 3 types of warning:

1. **“SerCom CB Ack”**. Only in CanBus is it available on PCB LGL182-2, too. It is signalled when, during the communication, no other Can Bus Node is found. It can be reset by turning the device OFF and back ON again.
2. **“SerCom CB Trm”**. Only in CanBus is it available on PCB LGL182-2, too. It is signalled when, during the communication, a total lack of Termination is found. It is possible to reset it by turning the device OFF and back ON again.
3. **“SerCom HV”**. Available both in CanBus and RS485, but only on PCB LGL182-4, since a dedicated Hardware signal is required. It is signalled when the communication line has too high tension values. This signalling cannot be reset.

During the signalling of these warnings, the device can continue to operate, but the led will flash fast in continuous mode, and the related message will be displayed.

# 7 - CONVERSION TABLE

## 7.1 YARN CONVERSION TABLE IN THE VARIOUS COUNT SYSTEMS

Nm	Ne	tex	den	D <sub>tex</sub>	Ne <sub>L</sub>	Nm	Ne	tex	den	D <sub>tex</sub>	Ne <sub>L</sub>
16.930	<b>10</b>	<b>60</b>	<b>530</b>	590	<b>28</b>	48.380	28,57	<b>21</b>	186	206	<b>80</b>
<b>18.000</b>	10,63	56	<b>500</b>	550	29,76	<b>50.000</b>	29,53	<b>20</b>	<b>180</b>	200	82,68
18.140	10,71	56	496	551	<b>30</b>	50.800	<b>30</b>	<b>20</b>	177	197	84
19.350	11,43	52	465	516	<b>32</b>	54.190	<b>32</b>	<b>18</b>	166	184	89,6
<b>20.000</b>	11,81	<b>50</b>	<b>450</b>	<b>500</b>	33,07	54.430	32,14	<b>18</b>	165	183	<b>90</b>
20.320	<b>12</b>	<b>50</b>	443	492	33,6	<b>60.000</b>	35,43	17	<b>150</b>	<b>167</b>	99,21
21.170	12,50	48	425	472	<b>35</b>	60.960	<b>36</b>	<b>16</b>	147	165	100,8
22.500	13,29	44	<b>400</b>	440	37,2	64.350	38	<b>16</b>	140	156	106,4
23.710	<b>14</b>	<b>42</b>	380	420	39,2	67.730	<b>40</b>	<b>15</b>	132	147	112
24.190	14,29	42	372	413	<b>40</b>	<b>70.000</b>	41,34	14	129	143	115,7
25.710	15,19	38	<b>350</b>	390	42,52	74.510	<b>44</b>	<b>13</b>	121	134	123,2
27.090	<b>16</b>	<b>36</b>	332	369	44,8	75.000	44,29	<b>13</b>	<b>120</b>	<b>133</b>	124
27.210	16,07	<b>36</b>	331	367	<b>45</b>	<b>80.000</b>	47,24	<b>12,5</b>	112	125	132,3
<b>30.000</b>	17,72	34	<b>300</b>	<b>335</b>	49,61	81.280	<b>48</b>	<b>12,5</b>	110	122	134,4
30.240	17,86	34	297	330	<b>50</b>	84.670	<b>50</b>	<b>12</b>	106	118	<b>140</b>
30.480	<b>18</b>	<b>32</b>	295	328	50,4	<b>90.000</b>	53,15	11	<b>100</b>	<b>110</b>	148,8
<b>32.000</b>	18,90	<b>32</b>	280	310	52,91	101.600	<b>60</b>	<b>10</b>	88	97	168
33.260	19,64	<b>30</b>	270	300	<b>55</b>	118.500	<b>70</b>	<b>8,4</b>	76	<b>84</b>	196
33.870	<b>20</b>	<b>30</b>	266	295	56	<b>120.000</b>	70,86	<b>8,4</b>	<b>75</b>	<b>84</b>	198,4
<b>34.000</b>	20,08	<b>30</b>	265	294	56,22	135.500	<b>80</b>	<b>7,2</b>	66	73	224
<b>36.000</b>	21,26	28	<b>250</b>	<b>280</b>	59,53	<b>150.000</b>	88,58	6,8	60	<b>67</b>	248
36.290	21,43	28	248	275	<b>60</b>	152.400	<b>90</b>	<b>6,4</b>	59	64	252
39.310	23,21	<b>25</b>	229	254	<b>65</b>	169.300	<b>100</b>	<b>6</b>	53	58	<b>280</b>
<b>40.000</b>	23,62	<b>25</b>	225	<b>250</b>	66,14	186.300	<b>110</b>	<b>5,2</b>	<b>48</b>	53	-
40.640	<b>24</b>	<b>25</b>	221	246	67,2	203.200	<b>120</b>	<b>5</b>	<b>44</b>	49	-
42.330	25	24	212	235	<b>70</b>	250.000	<b>148</b>	<b>4</b>	<b>36</b>	40	-
44.030	<b>26</b>	<b>23</b>	204	227	72,8	300.000	<b>178</b>	<b>3,4</b>	<b>30</b>	34	-
<b>45.000</b>	26,57	22	<b>200</b>	<b>220</b>	74,41	450.000	<b>266</b>	<b>2,2</b>	<b>20</b>	22	-
47.410	<b>28</b>	<b>21</b>	189	210	78,4	600.000	<b>355</b>	<b>1,7</b>	<b>15</b>	17	-
<b>48.000</b>	28,35	<b>21</b>	187	208	79,37	1.000.000	<b>591</b>	<b>1</b>	<b>9</b>	10	-

## 8 - SCRAPPING

If you decide to scrap the machine, you need to destroy/erase all machine identification plates and related documents.

If disposal is assigned to an external party, always resort to organizations duly authorized to recovery and/or disposal of the demolition materials.

If you perform the disposal on your own, you need to divide the material by type and instruct authorized organizations to dispose of them according to the various waste categories.

Separate metal parts, electric motor, rubber parts and parts from synthetic material to provide for their re-use. However, the disposal shall be performed in full compliance with the legal provisions in force at the time of disposal in the country where the machine is located. Such provisions cannot be predicted at the time when this booklet is being printed, but compliance with them lies within the competence of the last owner of the machine or any of his representatives.

**L.G.L. Electronics will not be held responsible** for damages to property or harm to people ensuing from the reuse of individual machine parts in functions or arrangements other than the original ones for which the machine was designed.

# L.G.L. ELECTRONICS S.p.a.

*Sede amministrativa, legale e stabilimento*  
*Via Foscolo 156, - 24024 Gandino (BG) - Italy*  
*Tel. (Int. + 39) 35 733408 Fax (Int. + 39) 35 733146*

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— ITALIANO —

## DICHIARAZIONE DI CONFORMITÀ CE

La macchina è un alimentatore di filo per macchine per maglieria.

Produttore: **L.G.L. Electronics**  
Modello: **SPIN 2**



La macchina è conforme ai requisiti essenziali delle direttive 2006/42/CE, 2014/35/UE, 2014/30/UE.

— ENGLISH —

## CE CONFORMITY DECLARATION

This machine is a yarn accumulator, suitable for knitting machines.

Manufacturer: **L.G.L. Electronics**  
Model: **SPIN 2**



The machine is in compliance with the main requirements of directives 2006/42/CE, 2014/35/UE, 2014/30/UE.

— FRANÇAISE —

## DECLARATION DE CONFORMITE CE

L'appareil est un délivreur de trame pour métiers à tricoter.

Producteur: **L.G.L. Electronics**  
Modele: **SPIN 2**



La machine est conforme aux conditions requises essentielles des directives 2006/42/CE, 2014/35/UE, 2014/30/UE.

— DEUTSCH —

## CE ÜBEREINSTIMMUNGS ANGABE

Die Maschine ist ein Vorspulgerät für Wirkmaschinen.

Hersteller: **L.G.L. Electronics**

Typ: **SPIN 2**



Die Maschine entspricht der wesentlichen Anforderungen der Richtlinien 2006/42/CE, 2014/35/UE, 2014/30/UE.

— ESPAÑOL —

## DECLARACIÓN DE CONFORMIDAD CE

La máquina es un alimentador de trama para máquinas de género de punto por urdimbre.

Productor: **L.G.L. Electronics**

Modelo: **SPIN 2**



La máquina está en conformidad con los requisitos esenciales de las directivas 2006/42/CE, 2014/35/UE y 2014/30/UE.

— PORTOGUES —

## DECLARAÇÃO DE CONFORMIDADE CE

A máquina è um alimentador de trama para máquinas de malha por urdimento.

Productor: **L.G.L. Electronics**

Modelo: **SPIN 2**



A máquina está em conformidade com os requisitos essenciais das directivas 2006/42/CE, 2014/35/UE, 2014/30/UE.

— NEDERLANDS —

## VERKLARING VAN CE OVEREENSTEMMING

Deze machine is een inslagvoorspoelmachine voor breimachines.

Merk: **L.G.L. Electronics**  
Type: **SPIN 2**



De machine voldoet aan de essentiële vereisten van de richtlijnen 2006/42/CE, 2014/35/UE, 2014/30/UE.

— ΕΛΛΗΝΙΚΑ —

## ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ CE

Το μηχάνημα είναι ένας τροφοδότης υφαδιού που δουλεύει με μηχανικούς αργαλειούς με λαβίδες ή σαίτες.

Μάρκα: **L.G.L. Electronics**  
Τύπος: **SPIN 2**



Η μηχανή πληρεί τις βασικές προϋποθέσεις που ορίζονται από τις οδηγίες 2006/42/CE, 2014/35/UE, 2014/30/UE.

— SVENSKA —

## CE OVERENSSTÄMMELSEDEKLARATION

Maskinen är en stickmaskin.

Märke: **L.G.L. Electronics**  
Typ: **SPIN 2**



Maskinen överensstämmer med de grundläggande kraven enligt EU-direktiven 2006/42/CE, 2014/35/UE och 2014/30/UE.



— SUOMEKSI —

## CE VASTAAVUUSTODISTUS

Kone on neulekone.

Merkki: **L.G.L. Electronics**

Tyyppi: **SPIN 2**



Kone on direktiivien 2006/42/CE, 2014/35/UE ja 2014/30/UE olennaisten vaatimusten mukainen.

— DANSK —

## CE OVERENSSTEMMELSERKLÄRING

Maskinen er en strikkemaskine.

Mærke: **L.G.L. Electronics**

Type: **SPIN 2**



Maskinen opfylder de grundlæggende krav i EU-direktiverne 2006/42/CE, 2014/35/UE og 2014/30/UE.

*Gandino, 01/04/2022*

*Il Direttore Generale: Ing. Zenoni Pietro*

A handwritten signature in black ink, appearing to read 'Pietro Zenoni', written in a cursive style.



**L.G.L. ELECTRONICS S.P.A**

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Tel. 0039 035 733408 – Fax 0039 035 733146 – Mail: lgl@lgl.it

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**DECLARATION OF CONFORMITY UKCA**

The machine is a weft accumulator.

Manufacturer: **L.G.L Electronics S.p.A** **UK**  
Model: **SPIN 2** **CA**

**L.G.L Electronics S.p.A** DECLARE

under its responsibility that the SPIN 2 are designed, manufactured and commercialized in compliance with the following UKCA Standards:

- The Electrical Equipment (Safety) Regulations 2016 – UK SI 2016 No. 1101
- Electromagnetic Compatibility Regulations 2016 – UK SI 2016 No. 1091
- Supply of Machinery (Safety) Regulations 2008 – UK SI 2008 No. 1597

Gandino (BG), 19/09/2022

**CEO: Pietro Zenoni**

A handwritten signature in black ink, appearing to read 'Pietro Zenoni', is written below the printed name.





L.G.L. Electronics S.p.A. reserve the right to alter in any moment one or more specifications of his machines for any technical or commercial reason without prior notice and without any obligation to supply these modifications to the machines, already installed.

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