Electronic Yarn
Consumption Meter

SCHMIDT
control instruments

Edition LM 04.3.E

LM Series

Model LMC
LMI
LMC-V
LMI-V

Instruction Manual

Valid as of: 01.12.2006 • Please keep the manual for future reference!

CE

SCHMIDT · ALL OVER THE TECHNICAL WORLD

Contents

1 Warranty and liability

In principle, the supply of the device is subject to our “General Conditions of Sale and Delivery.” These have been provided to the operating company on conclusion of the contract, at the latest.

Warranty:

- SCHMIDT Electronic Yarn Consumption Meter are warranted for 12 months.

Parts subject to wear, electronic components and measuring springs are not covered by the warranty. No warranty or liability will be accepted for bodily injury or property damage resulting from one or several of the following causes:

- Misuse or abuse of the device.
- Improper mounting, commissioning, operation and maintenance of the device (e.g. verification interval).
- Operation of the device if any safeguards are defective or if any safety and protection precautions are not properly installed or not operative.
- Failure to comply with the notices in the instruction manual regarding transport, storage, mounting, commissioning, operation, maintenance and setup of the device.
- Any unauthorized structural alteration of the device.
- Insufficient inspection of device components that are subject to wear.
- Opening the device or improper repair work.
- Disasters caused by the effects of foreign objects or by force majeure.

1.1 Notices within the instruction manual

The fundamental prerequisite for the safe handling of this device and its troublefree operation is the knowledge of the basic safety notices and safety instructions.

These instruction manual contains the most important notices for the safe operation of the device.

These instruction manual, in particular the safety notices, must be observed by any person who works with the device. In addition, the local valid rules and regulations for the prevention of accidents must be complied with.

The representations within the instruction manual are not true to scale.

The dimensions given are not binding.

General indications of direction, such as FRONT, REAR, RIGHT, LEFT apply when viewing the front of the device.

1.2 Responsibilities of the operating company

In compliance with the EC Directive 89/655/EEC, the operating company agrees to only permit persons to work with the device who:

- are familiar with the basic regulations on industrial safety and accident prevention and who have been trained in handling the device.
- have read and understood the chapter on safety and the warning notices in these instruction manual and have confirmed this with their signatures.
- are examined regularly on their safe and conscientious working method.

1.3 Responsibilities of the personnel

All persons who work with the device agree to perform the following duties before starting work:

- to observe the basic regulations on industrial safety and accident prevention.
- to read the chapter on safety and the warning notices in these instruction manual and to confirm with their signatures that they have understood them.

1.4 Informal safety measures

The instruction manual must always be kept on hand where the device is operated.
Apart from the instruction manual, the general and local valid regulations on accident prevention and environmental protection must be provided and complied with.

1.5 Training of the personnel

Only trained and instructed personnel is permitted to work with the device. The responsibilities of the personnel must be clearly defined for mounting, commissioning, operation, setup, maintenance and repair. Trainees may only work with the device under the supervision of an experienced personnel

1.6 Intended use

The device is intended exclusively to be used as a measuring yarn consumption.
Any other use or any use exceeding this intention will be regarded as misuse.
Under no circumstances shall Hans Schmidt & Co GmbH be held liable for damage resulting from misuse.
The intended use also includes:
- Complying with all notices included in the instruction manual and observing all inspection and maintenance works.

1.7 Dangers in handling the device

The device was designed according to the state of the art and the approved safety standards. Nevertheless, its use may cause serious or fatal injury to the user or third persons, and/or an impairment of the device or of other material assets.
The device may only be applied:
- For its intended use in a faultless condition with regard to the safety requirements.
- Malfunctions that could impair safety must be remedied immediately.
- Personal protective equipment must be used according to the EC Directive 89/686/EEC.

The device must not be operated in potential explosive areas and must not come into contact with aggressive substances.

1.8 Copyright

The copyright on these instruction manual remains with the company
Hans Schmidt & Co GmbH.
These instruction manual is intended for the operating company and its personnel only.
They contain instructions and notices that may only be reproduced on the prior written permission of
Hans Schmidt & Co GmbH
and under indication of the complete reference data.
Violations will be prosecuted.

1.9 Declaration of conformity, RoHs II and WEEE registration

In compliance with the EU Directives 2014/30/EU and 2011/65/EU

Hans Schmidt & Co GmbH is registered in compliance with the German Electrical and Electronic Equipment Act (ElektroG) under WEEE Reg. No. DE 48092317.

2 Available models

Model	Range	Operation Mode
LMC	999999 cm	manual
LMC-V	999999 cm	with sensor/manual
LMI	999999 inch	manual
LMI-V	999999 inch	with sensor/manual

2.1 Specifications

Measuring dange: LMC/LMC-V: 999999 cm LMI/LMI-V: 999999 inches
Resolution: LMC/LMC-V: 1 cm LMI/LMI-V: 1 inch
Accuracy: ± 1 % of reading ± 1 digit
Measuring principle: Pulse counting
Measuring time: Continuously
Preselection: Only LMC-V/LMI-V: adjustable for 1 - 99 revolutions
Display: LCD, 5 mm high
Auto power off: After 2 min of non-use
Temperature range: 10 - 45° C
Air humidity: 85 % RH, max.
Power supply: 2 Batteries 1.5 V, size A A A
e.g.: Duracell Procell Lithium for about 30 h continuous use
Housing material: Aluminium
Dimensions: Instrument: 160 x 55 x 51 mm (L x W x H)
Magnetic base: height approx. 190 mm, 40 mmØ
Weight: Instrument: approx. 200 g
Magnetic base: approx. 350 g
Complete with carrying case (gross): approx. 1300 g

2.2 Delivery includes

LMC/LMI
- Yarn consumption meter
- Magnetic base
- Instruction manual
- Transport package
- 2 batteries

LMC-V/LMI-V
- Yarn consumption meter
- Magnetic base
- Magnetic switch
- Magnet
- Instruction manual
- Transport package
- 2 batteries
- Screwdriver (2.5 mm)

Special accessories: see www.hans-schmidt.com

2.3 Unpacking

Unpack the yarn consumption meter and inspect it for any shipping damage.
Notices of defect must be announced immediately, at the latest within 7 days on receipt of the goods.

3 Initial setup and operating procedure

3.1 Notices before starting measurement

Have you read and understood the instruction manual, in particular chapter 1 “Warranty and liability” ?
You are not permitted to operate the device before doing so.

Before working with the device you must put on your personal protective clothing, if necessary. For example, eye protectors, gloves, etc.

The ID plate with the CE mark and the serial number, as well as the the SCHMIDT Quality Seal is provided on the surface of the instrument.

3.2 Operating elements

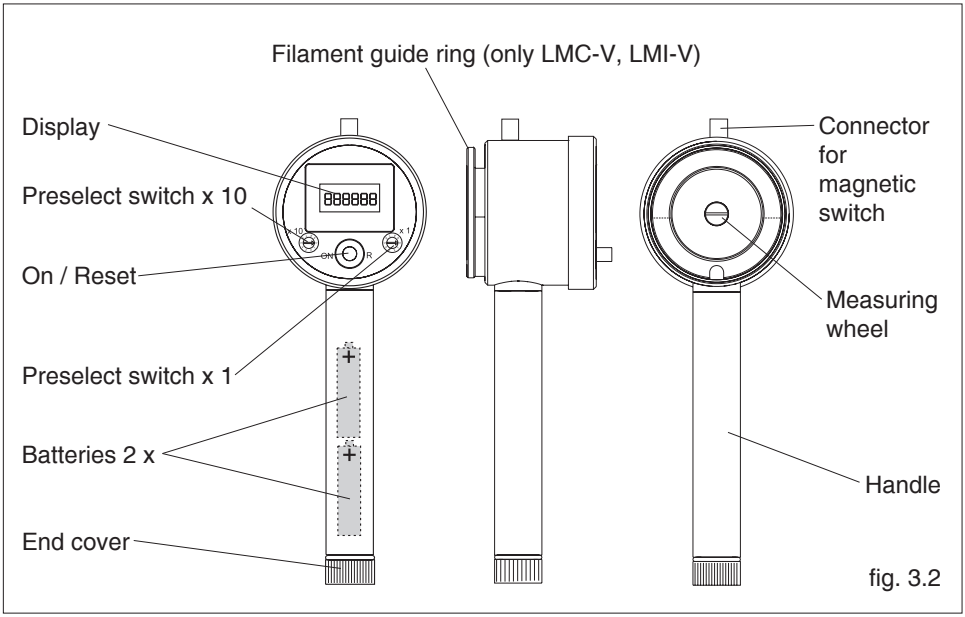

fig. 3.2

3.3 Inserting the batteries

Before first use of the instrument, the batteries need to be inserted.
If the display is no longer counting or goes while the instrument is on and the measuring wheel is rotating, the batteries need to be replaced.

To insert the batteries:

- Remove the end cover.
- Insert the batteries (2 x AAA 1.5 V) in the battery compartment inside the handle. Please ensure proper polarity.
- Screw the end cover **5** back into the handle.

Used batteries must be disposed of in compliance with local regulations.
If the instrument will not be used for a longer period of time, the batteries should be removed.

3.4 Measuring with LMC and LMI

3.4.1 Measuring with manual start/stop

The Electronic Yarn Consumption Meter accurately measures the yarn consumption of a single yarn feeding system at a running knitting machine with fixed or rotating cylinders. The instrument is stationary mounted between filament break monitor and filament guides using the supplied magnetic base (fig 3.4.1b).
To eliminate material slip, adjust the electronic yarn consumption meter in such a way that the angle of material contact with the measuring wheel is 120° minimum (fig. 3.4.1a). It is recommended to measure the yarn consumption for several machine cycles.

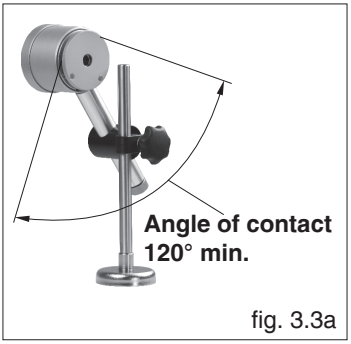

fig. 3.3a

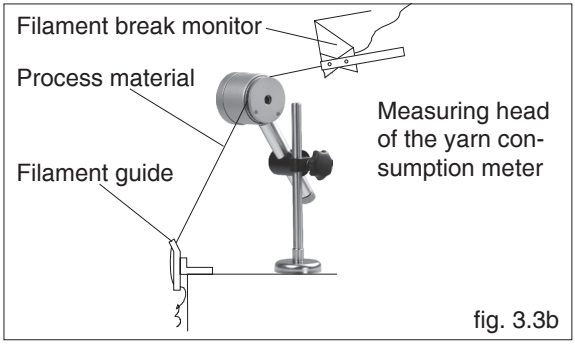

fig. 3.3b

Setup

- Place the magnetic base at the desired measuring point.
- Insert the handle of the electronic yarn consumption meter in the holder of the magnetic base.
- Insert the material to be measured in the groove of the filament guide ring on the rear side of the instrument.
  The filament guide ring can be turned by 360°.

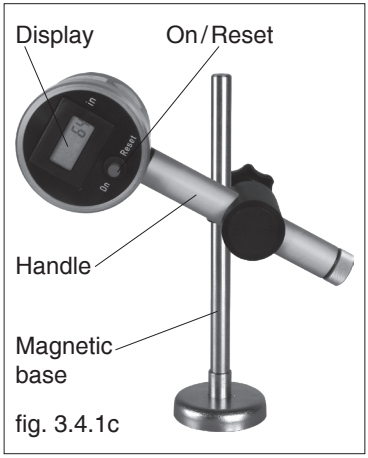

fig. 3.4.1c

Adjust the electronic yarn consumption meter in such a way that the angle of material contact with the measuring wheel is 120° minimum (fig. 3.4.1a) to eliminate material slip.

Measuring procedure

- On the LMC-V and LMC-I models, set the preselect switch to position 0, as shown in chapter 3.5.2
- Press the On/Reset switch to switch on the electronic yarn consumption meter.
- Switch on the knitting machine for the desired number of machine cycles.
  The instrument now continuously measures the yarn consumption.
- Switch off the knitting machine.
- The display now shows the measured length of yarn.
  If a new yarn consumption measurement is necessary, repeat the complete **measuring procedure.**

The electronic yarn consumption meter powers off automatically when the measuring wheel on the rear of the instrument has not been moving for about 2 minutes. The measured values are deleted.

3.5 Measuring with the LMC-V and LMI-V models

3.5.1 Measuring with manual start/stop

Chapter 3.3

3.5.2 Measuring with automatic start/stop signal

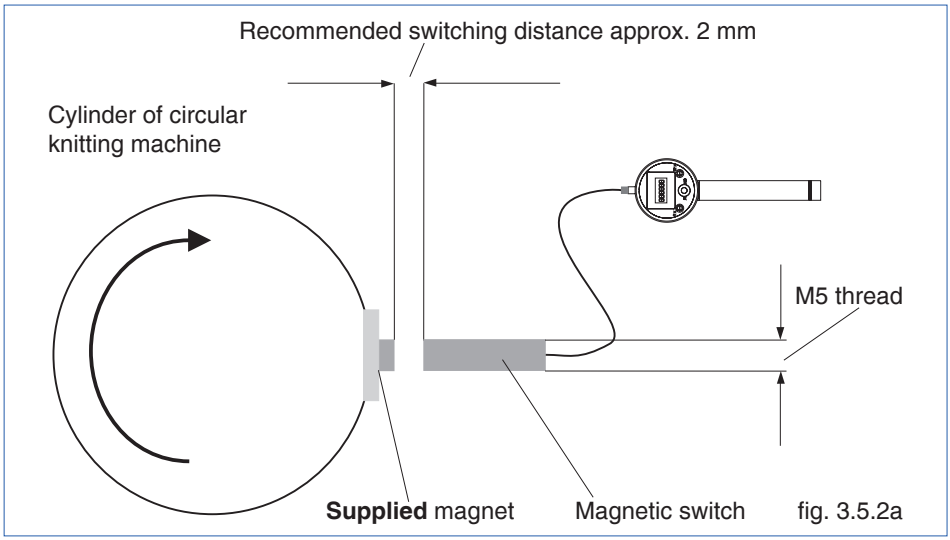

fig. 3.5.2a

The LMC-V and LMI-V models feature an adjustable counter for up to 99 cylinder revolutions of the knitting machine. The cylinder revolutions are monitored by a magnetic switch.
To use this feature, the supplied magnet must be mounted to the cylinder of the knitting machine by using an M5 flat head bolt. The supplied magnetic switch is fitted to the stationary part of the knitting machine so that it is at the same height as the supplied magnet (fig. 3.5.2b). The switching distance between the supplied magnet and magnetic switch should be set to about 2 mm with the adjusting nut and lock nut of the magnetic switch.

Mounting example:

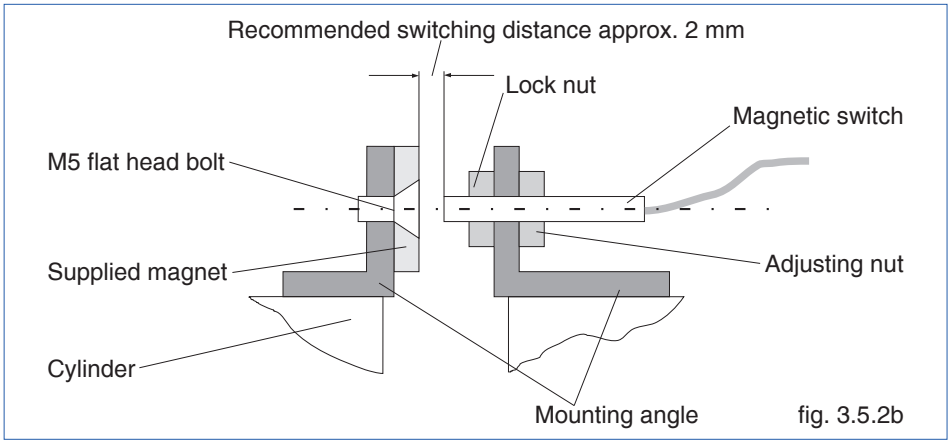

fig. 3.5.2b

3.5.2 Measuring with automatic start/stop signal (cont.)

To select the number of revolutions:

00 = manual start/stop

1 - 99 = automatic start/stop signal

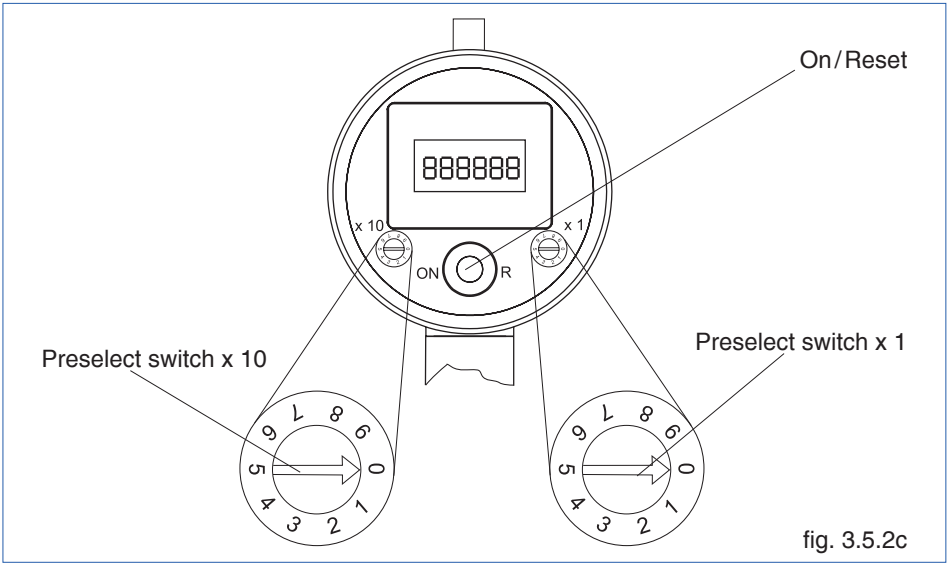

fig. 3.5.2c

The preselect switch allow selecting the desired number of cylinder revolutions for the measuring cycle. The number of revolutions can be set from 0 to 99.

Preselection Example:

Desired number of revolutions = 54

Set preselect switch x 10 to **position 5**.

Set preselect switch x 1 to **position 4**.

Use a fine screwdriver with a 2 mm blade to set the preselect switches. After every change of the setting of the preselect switches, the On / Reset switch must be pressed to activate the new setting.

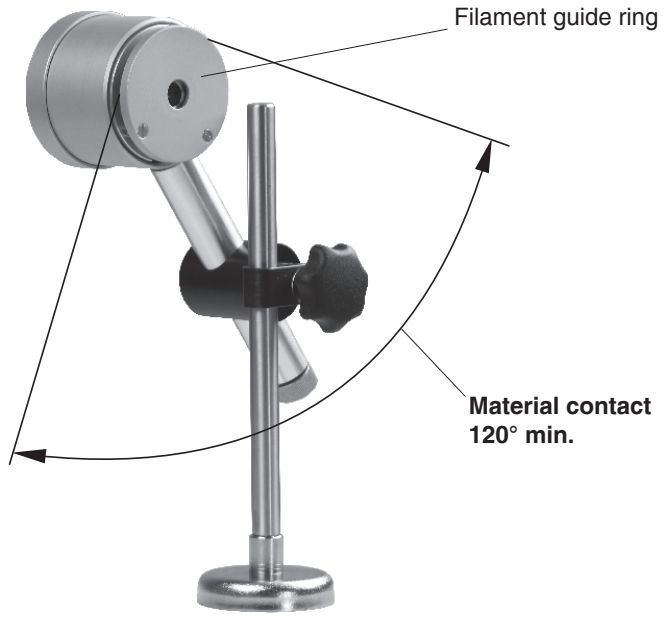

fig. 3.5.2d

1. Insert the material to be measured in the groove of the filament guide ring on the rear side of the instrument. The filament guide ring can be turned by 360°.
2. Adjust the electronic yarn consumption meter in such a way that the angle of material contact with the measuring wheel is 120° minimum (fig. 3.5.2d) to eliminate material slip.
3. Press the On/Reset switch.
4. As soon as the yarn consumption meter receives the first switching pulse from the magnetic switch, it starts counting the selected number of revolutions. Counting starts from 0.
   The yarn consumption is also evaluated and shown on the display after the first switching pulse of the magnetic switch.
5. When the number of revolutions set with the preselect switches has been reached, the instrument stops measuring.
   The display shows the measured yarn consumption.

If a new yarn consumption measurement is necessary, repeat the measuring process from step 3 to ensure that the instrument has been reset.

• The electronic yarn consumption meter powers off automatically when the measuring wheel on the rear of the instrument has not been moving for about 2 minutes. The measured values are deleted.

4 Service and maintenance

The instrument is easy to maintain. Depending on operating time and load, the instrument should be checked according to the locally valid regulations and conditions.

4.1 Verification intervals

The question of finding the right frequency of calibration accuracy verification depends on several different factors:

- ➔ Operating time and load of the SCHMIDT Electronic Yarn Consumption Meter
- ➔ Tolerance band defined by the customer
- ➔ Changes of the tolerance band compared to previous verifications of calibration

Therefore, the interval between verifications must be determined by the user`s Quality Assurance Department based on the user`s experience.
Assuming normal operating time and load as well as careful handling of the Electronic Yarn Consumption Meter, we recommend a verification interval of 1 year.

5 Cleaning

For cleaning the unit, do not use any

AGGRESSIVE SOLVENTS

such as trichloroethylene or similar chemicals.

NO WARRANTY OR LIABILITY

shall be accepted for damage resulting from improper cleaning.

6 Correspondence

Should you have any questions regarding the instrument or instruction manual, or their use, please indicate above all the following details which are given on the ID plate:

1) Model
2) Serial number

7 Repairs

Shipping instructions:

We kindly ask for return free of charge for us, if possible by airmail parcel. All occurring charges, if any (such as freight, customs clearance, duty etc.), will be billed to customer. For return from foreign countries, we ask you to include a proforma invoice with a low value for customs clearance only, e.g. 50 Euro, each and to advise the shipment in advance by fax or eMail.

To avoid unnecessary follow-up questions, and the resulting loss of time or possible misunderstandings, please return the instrument with a detailed fault description to our service department. Please indicate in your order whether you require an Inspection Certificate 3.1 according to DIN EN 10204.

Service address: **Hans Schmidt & Co GmbH**
Schichtstr. 16
D-84478 Waldkraiburg
Germany

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