

SEAM DETECTOR MONITOR SDM6000



INDUSTRIAL ELECTRONICS

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PRECAUTIONS!

There are no serviceable parts inside the **SDM6000** unit. Not to be opened by any unauthorized person. All repairs to the device must be carried out by the manufacturer or a qualified service engineer.

Improper handling may result in serious personal injury and considerable material damage. All connection and maintenance work must be carried out by qualified personnel.



RISK OF ELECTRIC SHOCK!

Use the correct voltage. The SDM6000 is designed for use with specific voltage only. Connection to a different voltage may cause fire, electric shock or other damage.

Always cut the power off before connecting or disconnecting the unit.

Do not touch the plug and the connectors with wet hands.

Disconnect the SDM6000 before cleaning it, to avoid the risk of electric shock.

Attempting to use a malfunctioning SDM6000 can be dangerous.

Do not block the ventilation slots on the cabinet of the SDM6000.

Keep liquids away from the SDM6000.

Spillage into the cabinet may result to fire, electric shock, or equipment damage. If a small object or liquid falls/spills into the SDM6000 cabinet, unplug the unit immediately. Have the unit checked by a qualified service engineer before using it again.

Set the SDM6000 in an appropriate location.

Do not install in a dusty, humid, or vibrating environment. Do not place it near heater, or air conditioner. Keep it away from air, steam, extremely high or low temperature or humidity.

Always follow the instructions given by the manufacturer and use the SDM6000 in accordance to its specifications.

I. MANUFACTURER'S WARRANTY, GENERAL TERMS AND CONDITIONS

Thank you for purchasing our product.

Our products have been manufactured with the latest technology, the highest quality components and have gone through rigorous quality control tests at the factory, before shipment. Make sure that the part number and type indicated in the identification label and pack correspond to the part number or type of your order. After receiving, inspect the unit to ensure that no damage have been caused during transportation.

GELEC and GELEC's authorized distributors warrant to the original purchaser that the product shall be free from defect in material and/or workmanship. The warranty period begins on the purchase date (proof of purchase by invoice or delivery note) and is valid for one (1) year.

In the event of malfunction during the warranty period attributable directly to faulty material and/or faulty construction and functional defects, GELEC and authorized distributors will, at their option, either repair or replace the faulty product with the same or similar model.

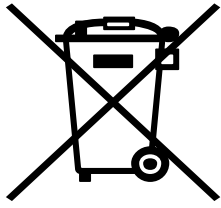
GELEC and authorized distributors shall have no obligation under this warranty, however, in the following cases:

- Any defect caused by freight damage, accident, disaster, faulty maintenance or improper handling.
- Any defect caused by modification, alteration, abuse, misuse or incorrect installation.
- Any defect of the product caused by improper repair by third party other than GELEC and GELEC's authorized distributors.
- Any incompatibility of the products with subsequent technical innovations or regulations.
- Any defect of the product caused by external equipment.
- Any defect of the product on which the original manufacturer's labeling has been altered or removed.
- Any damage on external/connected equipment, or by extension on every part of the whole application, caused by a possible improper device operation.

In case of complaint please contact our company or send the unit un-dismantled to your local dealer. Any necessary replacement parts and necessary repair work are totally covered free of charge.

All products are designed and produced by the manufacturer GELEC & Co. LP to be in compliance with the EU norms applying to them. GELEC is not responsible for direct or indirect damages or malfunction caused by improper use or installation of the SDM6000.

2. DISPOSAL OF OLD ELECTRICAL & ELECTRONIC EQUIPMENT



This symbol, found on your product, indicates that this should not be treated as household waste when you wish to dispose it.

It should be handed over to an applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product.

The recycling of materials will help to preserve natural resources.

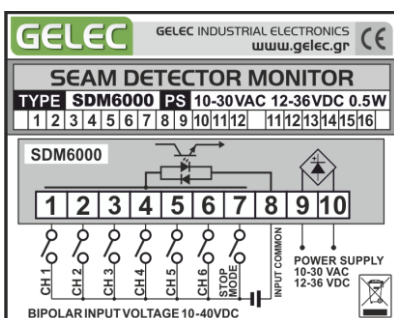
3. SEAM DETECTOR MONITOR SDM6000

This operator's manual explains the functions and operation of the SDM6000. It also gives some troubleshooting tips as well as general precautions to be taken when operating the unit. In order to ensure the best performance and effective use of the SDM6000, we recommend that you read the information in this manual carefully and follow the instructions contained.

This manual is a complete guide to the SDM6000 with information on unit maintenance, unit installation and instructions on how to operate it. Do not touch any part of the SDM6000 the manual does not cover. Keep the manual for immediate reference. It should help in solving any operational questions you may have.

No part of this manual may be quoted, reproduced, stored in a retrieval system, transmitted, transcribed or translated into any other language in any form or by any means, electronic, mechanical, or otherwise, without prior written permission of **“Gelec & Co. LP”**.

Although every effort has been made to ensure that this manual provides up to date information, please note that the contents in this manual and the unit specifications are subject to change without notice.



Do not forget to refer the exact type and version of your SDM6000 whenever you contact the manufacturer, asking for any further information. You can find this information on the identification label on the side the unit.

4. GENERAL DESCRIPTION

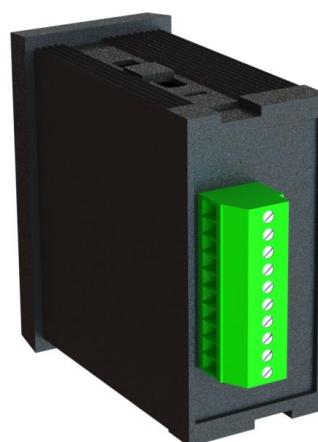
The Seam Detector Monitor SDM6000 is an electronic digital indication device. It is an optional accessory of the Gelec Seam Detection System and it is designed to support machines with up to six fabric channels.

The Seam Detection System is a complete seam detection solution for fabric dyeing machines. As it is able to detect fabric seams separately, at machines with more than one channel, it is important to know the channel where the fabric seam has been detected.

The SDM6000 covers this need as it provides the necessary information about seam passages, or by indicating the corresponding channel number where the seam is detected and machine stopped.



Front panel



Rear view

FEATURES

- ▶ Status indicator for Seam Detectors
- ▶ Multifunctional indication (seam passage, operating modes, seam stop)
- ▶ Power supply range 10-30VAC / 12-36VDC
- ▶ 6+1 bipolar Opto-Isolated inputs (Input voltage 10-40 VDC)
- ▶ 30mm super bright red 7-segment LED display
- ▶ IP64 front panel
- ▶ Self-extinguishing PPO black enclosure
- ▶ Panel mounting 68x33mm cut out

5. SDM6000 OVERVIEW

ENCLOSURE

The SDM6000 is a complete unit with built-in electronic board and electric connection terminals, with a black panel mounting enclosure according to DIN 43700, with plastic fastening elements on each side. It can be easily installed at the front of an electrical control panel having a sealing rubber gasket, with IP64 degree of protection.

DISPLAY

High brightness and contrast red LED 7-segment behind red filter, for the best optical result even under strong light, the SDM6000 informs constantly about the seam passages, operating modes with numerical and combined indications.

CONNECTION TERMINAL

The device is equipped with a 3,5mm pitch, plug-in connector. Please refer to the *ELECTRICAL SECTION* of this document for further details.

6. OPERATION

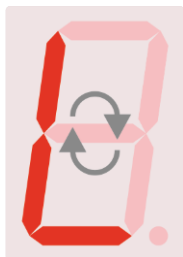
INDICATION MODE / STOP MODE

Each SDM6000 uses the signals of (up to) six Seam Detector Units with its inputs #1 - #6, while input #7 is used for the STOP MODE activation.

In *INDICATION MODE* the SDM6000 checks constantly its first six inputs (#1-#6) which are connected to each channel's SD Unit and indicates for a few seconds the number of the channel where a passage is detected. This mode is only for normal monitoring purposes during machine operation.

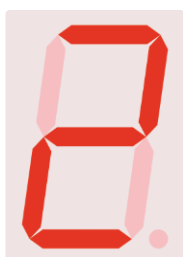
In *STOP MODE* the machine is designed to stop at the following seam passage. In this mode, input #7 must be also activated. When entered the STOP MODE, the SDM6000 will latch the number of the corresponding channel where the seam was detected and machine stopped.

CIRCLING SEGMENTS (INDICATION MODE)



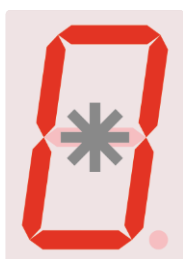
Three peripheral segments circle constantly during *INDICATION MODE*, being interrupted for a few seconds by the number of the channel where a seam was detected. After that the display returns back to circling indication.

SEAM PASSAGE IN INDICATION MODE



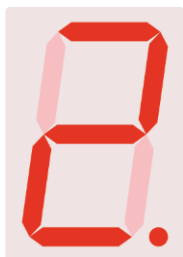
The number of the channel where a seam was detected appears for a few seconds, interrupting the circling indication. If two or more seams pass by in short time, their channel numbers will be displayed in order of passage, one after the other.

BLINKING ZERO (STOP MODE)



When the operator sets the machine in *STOP MODE* (e.g. for sampling or unloading), input #7 of the SDM6000 is enabled as well and the circling indication turns into a blinking zero until the following seam passage.

SEAM PASSAGE IN STOP MODE



When entered the *STOP MODE*, the first random seam passage will have as a result the machine stop. The SDM6000 will latch the corresponded channel number, while the dot at its right will start blinking. This means that the seam is located at the chamber that is displayed. The *STOP MODE* input should be disabled, in order the SDM6000 to return in *INDICATION MODE* and be ready for further operation.

7. ELECTRICAL SECTION

SDM6000 has a wide power supply range. Supply with either **10-30VAC** or **12-36VDC**.

Its maximum power consumption is approx. **0.5W** in total operation. The connection polarity (+/-) is not crucial, as there is an internal bridge rectifier.

The device is designed for use with specific voltage only. Connection to different voltage may cause fire, electric shock or other damage. There is not an electrical safety fuse in the internal power circuit.

OPTO ISOLATED INPUTS

SDM6000 has 7 bipolar opto-isolated inputs, six for channel inputs and one for function control (STOP MODE). The input voltage may vary from 10VDC to 40VDC and the input current from 5mA to 20mA according to input voltage.

CONNECTION TERMINALS

The device is equipped with a 3,5mm pitch, plug-in connector. Insert and screw only one wire in each terminal in order to be in compliance with VDE norms. Make sure to apply the recommended tightening torque.

The wire range should be 28-16AWG (UL) or 0.5-1.5mm² (IEC).

Terminals #1 - #2 - #3 - #4 - #5 - #6

Use these terminals to connect each channel's SD Unit.

Terminal #7

Use this terminal to connect the cable which drives the STOP MODE activation signal.

Terminal #8

Use this terminal to connect the Input Common.

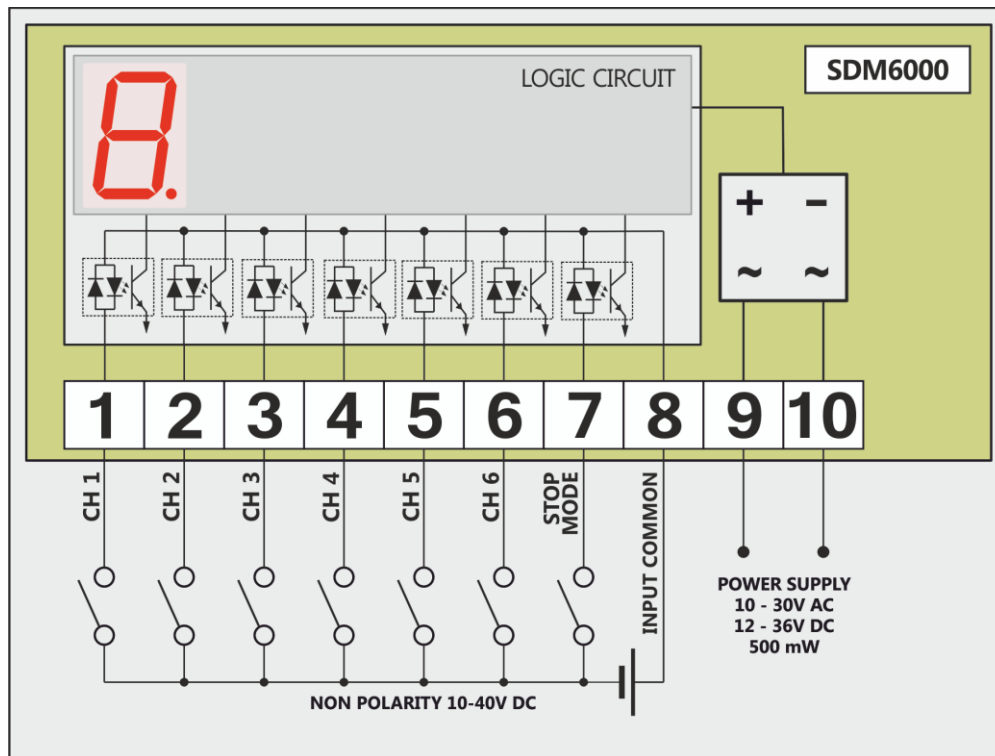
Terminals #9 - #10

Connect the power supply to terminals #9 and #10. Specific polarity (+/-) is not crucial.

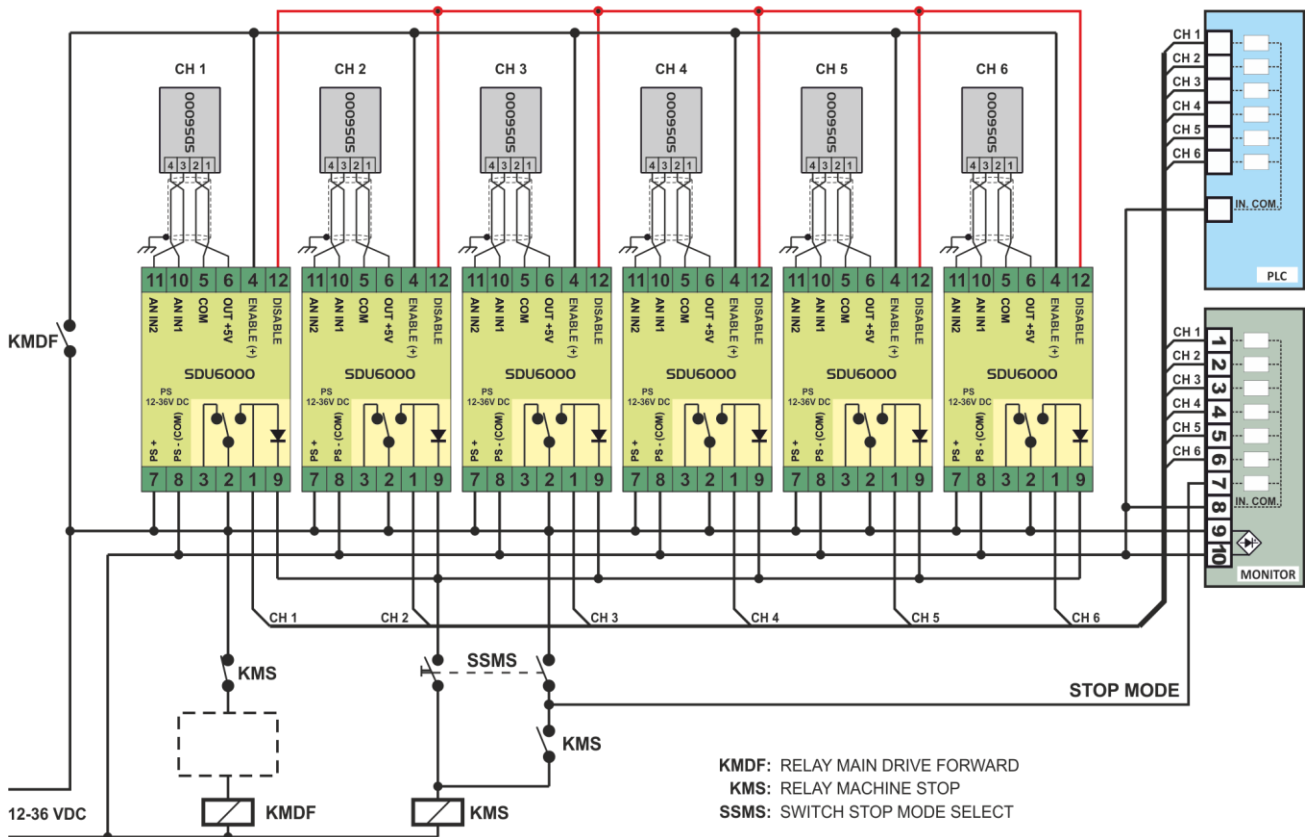
Refer to the following diagrams in order to have a proper connection between the SDM6000 and your associated equipment.

!! Always cut the power off before connecting or disconnecting the unit. !!

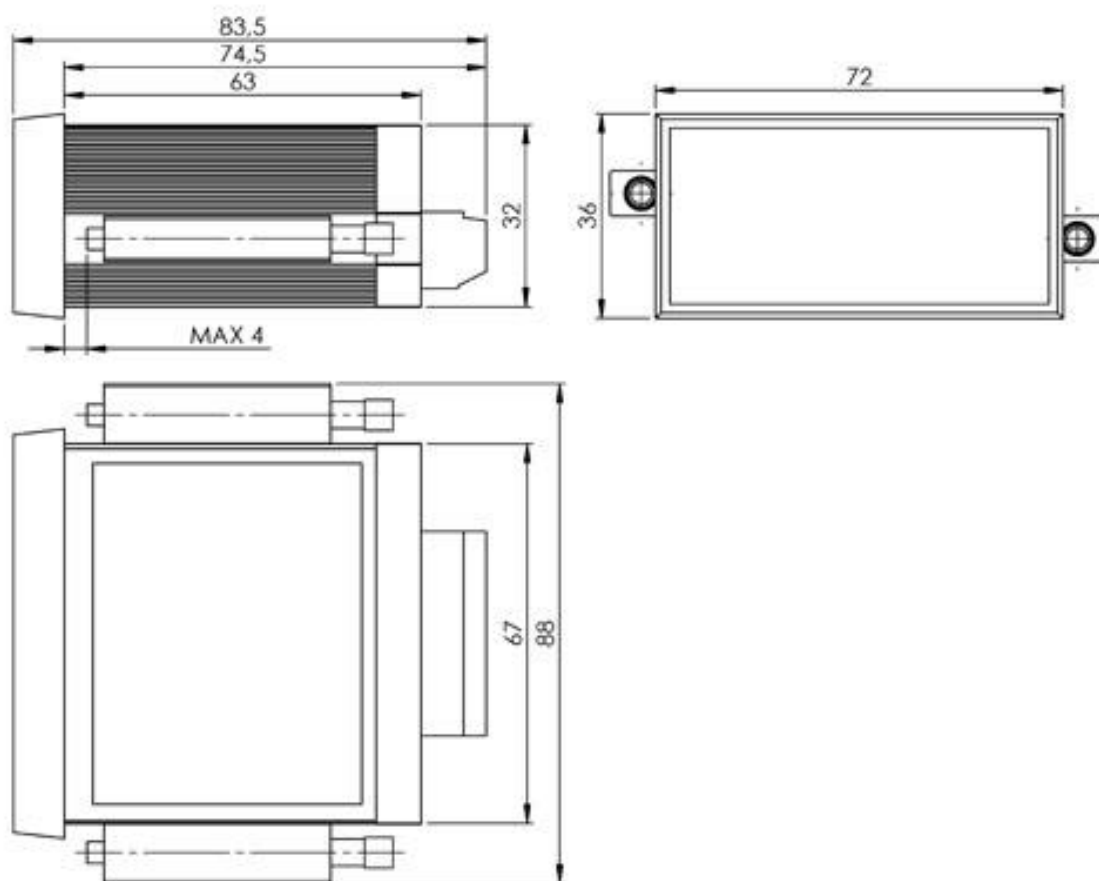
CONNECTION DIAGRAM FOR SDM6000



TYPICAL APPLICATION FOR MACHINE WITH SIX CHAMBERS (WITH SDS6000)



8. DIMENSIONS



9. TECHNICAL SPECIFICATIONS

GENERAL DATA	
Unit absolute dimensions (mm)	72 x 72 x 36
Housing area dimensions (mm)	83,5 x 88 x 36
Weight	80 gr
Enclosure	Self-extinguishing PPO, black (DIN 43700)
Mounting	Panel mounting
Degree of protection	IP64 front panel
Features	
Input type	7 Bipolar opto-isolated
Input voltage	10-40 VDC non polarity
Input current	5-20mA (acc. to input voltage)
Indication range	1...6 numerical
Display	30mm (1,2 in.) single-digit numeric display
Display color	Super bright red (660nm peak wavelength)
Unit operating conditions	
Ambient temperature under bias	-25°C ... 85°C
Storage temperature	-25°C ... 85°C
ELECTRICAL DATA	
Operating voltage (AC values at 50/60 Hz)	10-30 VAC / 12-36 VDC
Power consumption	0.5 W max
Connector characteristics	
Pitch	3,5 mm
Wire range	28-16AWG (UL) , 0.5-1.5mm ² (IEC)
Tightening torque	0.2Nm (1.7Lb-In.)
STANDARDS	
In conformance with the following standards:	CE

Specifications are subject to change without prior notice.



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