

LOCTITE®

Operating Manual
Bedienungsanleitung

Digital Dispense Controller

97101



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1.1 Emphasized Sections



Warning!

Refers to safety regulations and requires safety measures that protect the operator or other persons from injury or danger to life.



Caution!

Emphasizes what must be done or avoided so that the unit or other property is not damaged.



Notice

Gives recommendations for better handling or adjustment of the unit during operation as well as for service activities.

The numbers printed in bold in the text refer to the corresponding position numbers in the illustration on page 6-7.

- The point emphasizes an instruction step.

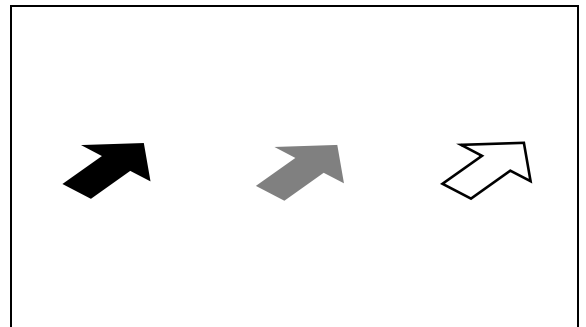
Instruction steps in the illustrations are indicated with arrows.

When several instruction steps are indicated in an illustration, the shading of the arrow has the following meaning:

Black arrow = 1st step

Grey arrow = 2nd step

White arrow = 3rd step



1.2 Items Supplied

- Digital Dispense Controller
- Foot Switch Type No. 97201
- Adapter 6 mm OD – ¼" NPT
- Terminating Plug
- Pneumatic Tube PUN-6x1
- Power cord
- Operating manual



As a result of technical development, the illustrations and descriptions in this instruction manual can deviate in detail from the actual unit delivered.

1.3 Field of Application (Intended Usage)

The Digital Dispense Controller is used in conjunction with a Loctite Dispense Valve and a Product Reservoir to make up a pressure / time dispensing system. Various dispense valves are available depending on the process requirements and different size reservoirs, with or without product level sensor, are also available depending on the product bottle size.

Unit Features and Benefits

Features

Independent Controller

Low Level Sensor Interface XS2

Start/Low Level Output XS1

Benefits

- Allows choice of product reservoir.
- Avoids adhesive spills on controller.
- Provides for flexibility for future upgrades.
- Provides a simple indicator input that is wired to a female connector, which will accept most low-level sensors.
- Communicates low level condition to a remote device such as plant PLC.

1.4 For Your Safety



For safe and successful operation of the unit, read these instructions completely. The manufacturer cannot be held responsible for damage or injury of any kind because of misuse or improper application or because of failure to observe safety instructions or warnings.

Be sure to retain this manual for future reference.

Request the technical data sheet and the safety data sheet for the LOCTITE® product used at www.loctite.com for US and Canada version of data sheets.



FOLLOW UNCONDITIONALLY THE INSTRUCTIONS OF THESE DATA SHEETS!



WARNING!

It is the responsibility of the user to ensure that all devices being driven by the Digital Dispense Controller are set-up in a safe manner.

The manufacturer is in no way responsible for injuries or damage to persons or property resulting from devices being driven by the Digital Dispense Controller.

For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.

Removing, bypassing or putting out of operation of the safety devices can result in radiation damage to persons and damage to the unit and is therefore prohibited!

When working with pressurized air, wear protective glasses!

Damage to the power cord or the housing can result in contact with live electrical parts. Check the power cord and the unit before each use. If the power cord or the unit is damaged, do not operate! Replace a damaged power cord with a new one.

The unit may be opened and repaired only by authorized service personal.

2.1 Theory of Operation

The Digital Dispense Controller is connected to an external pneumatic supply. It controls the air supply to a remote reservoir and the pneumatic opening of a dispense valve according to the selected dispensing time.

The start signal for dispensing is provided by an external foot switch.

An external sensor activates a low-level indicator. The low-level condition can also be communicated to a remote device.

The amount of product dispensed is controlled by three main factors:

- Amount of pressure in the reservoir
- Length of time the dispensing valve remains open
- Dispensing needle size

Additional Features

Two additional features are available:

EMPTY:

If the reservoir is empty, the contact of the level sensor opens. A beeping tone indicates the message and the symbol for an empty reservoir “U” is displayed.

READY:

If the dispensing cycle is finished and the reservoir is not empty, this contact closes.

Both signals are available as dry contacts at the XS 1 start interface for optional connection to a higher-ranking controller or a warning light.

The start of a dispensing cycle is not locked when EMPTY is indicated.



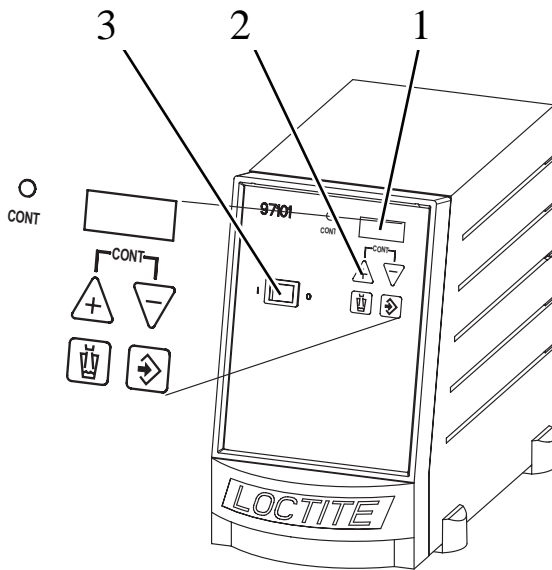
Caution!

Pay attention if cyanoacrylate is dispensed – Air in the feedline results in curing of the product!

When the user quits the EMPTY message and the beeping tone with the button ENTER the signal at the interface XS 1 is quit, too.

The READY signal will only be indicated when the reservoir is refilled and the sensor is activated.

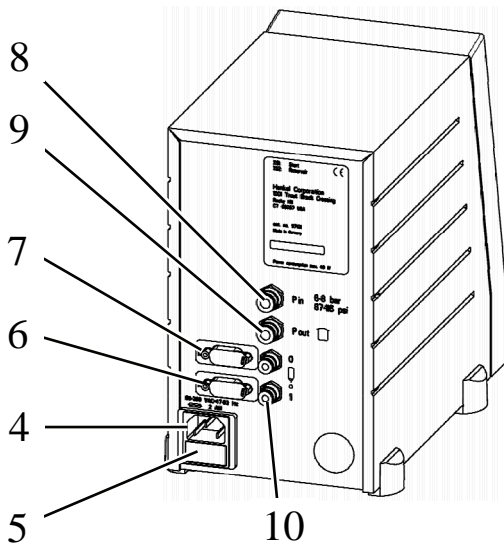
2.2 Interface and Connections



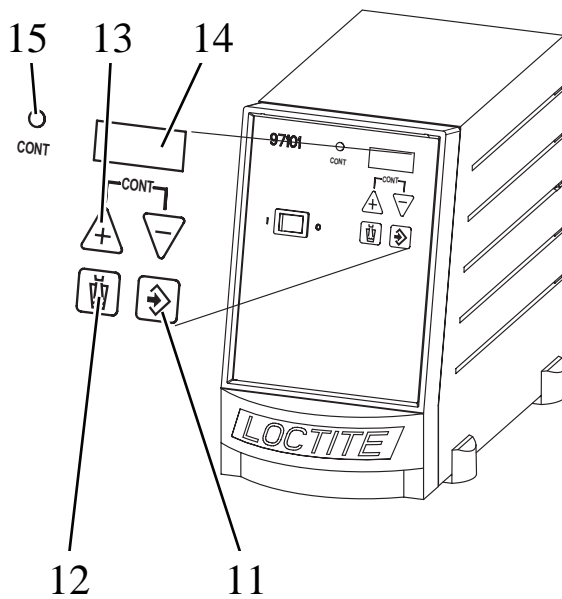
- 1 **Timer Display**
- 2 **Keyboard**
- 3 **Power Switch 1/0 (ON/OFF)**
- 4 **Power Supply Socket**
- 5 **Power Fuse, 2 A semi time-lag, glass type**










**WARNING!**

Removing, bypassing or putting out of operation of the safety devices can result in radiation damage to persons and damage to the unit and is therefore prohibited!



- 6 **Socket XS 1: Start**
The footswitch is connected here. It is also the output for the READY and EMPTY signals.
- 7 **Socket XS 2: Reservoir**
The reservoir is connected here. It is the input for a low level sensor. If no sensor is used, then connect the supplied terminating plug here.
- 8 **Pneumatic Supply P in**
Air supply input for tube 6 mm OD, calibrated. Use supplied adapter to 1/4" NPT if required.
- 9 **Pneumatic Supply P out**
This port supplies an unregulated air supply to a remote reservoir. Use an external pressure regulator if regulated air is required.
- 10 **Control Air Connection: Dispensing Valve**
Dispensing valve open 1.
Dispensing valve closed 0.
Close port 0 for single actuated valve.



- 11 Button** 
- Button for the storage of the new values set for the dispensing time [s].
- When the indication of the dispensing time [s] in the digital display blinks, the indicated dispensing time is stored by pressing button and the display stops blinking.
- 12 Button** 
- Button for filling the product feedline. In both modes the product is dispensed as long as button is pressed.
- In time-controlled mode, the dispensing time is not changed.
- 13 Buttons**  
- Buttons for changing the dispensing time for a dispensing sequence.
- When button  or  is pressed, the display of the dispensing time [s] in the digital display begins to blink. The dispensing time is adjustable from 0.01 to 99.9 s.
- Buttons for switching from time controlled mode to **continuous** mode.
- With the simultaneous pressing of the buttons for more than 0.5 seconds, an operating mode change takes place to the **Continuous** mode. In the display, “con” appears. The lighting of the LED “CONT.” indicates **Continuous** mode.
- During dispensing, the elapsed dispensing time is indicated in the digital display beginning each time with 0.00 s. The last dispensing time remains displayed until the next start.
- Switching back to time controlled mode **without storage** of the dispensing time by renewed pressing of button  or . The LED extinguishes. In the digital display, the dispensing time is blinking.
 - Switching back to time controlled mode **with storage** of the dispensing time by pressing button . The LED extinguishes. The indicated dispensing time is stored.
- 14 Digital Display**
- Three-figure Display of the dispense time [s].
- 15 LED “CONT“**
- The lighting of the red LED “CONT“ indicates Continuous mode.

3

Technical Data

3.1 Energy Requirements

3.1.1 Electrical

Power supply	Power supply 90 – 260 V AC; 47 – 63 Hz
Power consumption	Approx. 25 W
Power protection	Glass tube, fine wire fuse, 2 A semi time-lag
Internal control voltage	24 V DC

3.1.2 Pneumatics

Pneumatic supply	Min. 5 bar (70 PSI), max. 10 bar (145 PSI)
Quality	Filtered 10 µm, oil-free, non-condensing
If the required quality is not achieved, install a LOCTITE® filter regulator	Order Code no. see Section 8.1

3.2 Connections and Dimensions

Power connection	Cold appliance coupling IEC 320 acc. to VDE 0625
Dimensions	W x H x D: 350 x 335 x 230 mm (13.8 x 13.2 x 9.1 inch)
Pneumatic supply	Internal Dia. 4 mm; external Dia. 6 mm +0.05, -0.10 External Dia. ¼ in. is not suitable! Alternatively one fitting to 1/4" NPT is supplied.

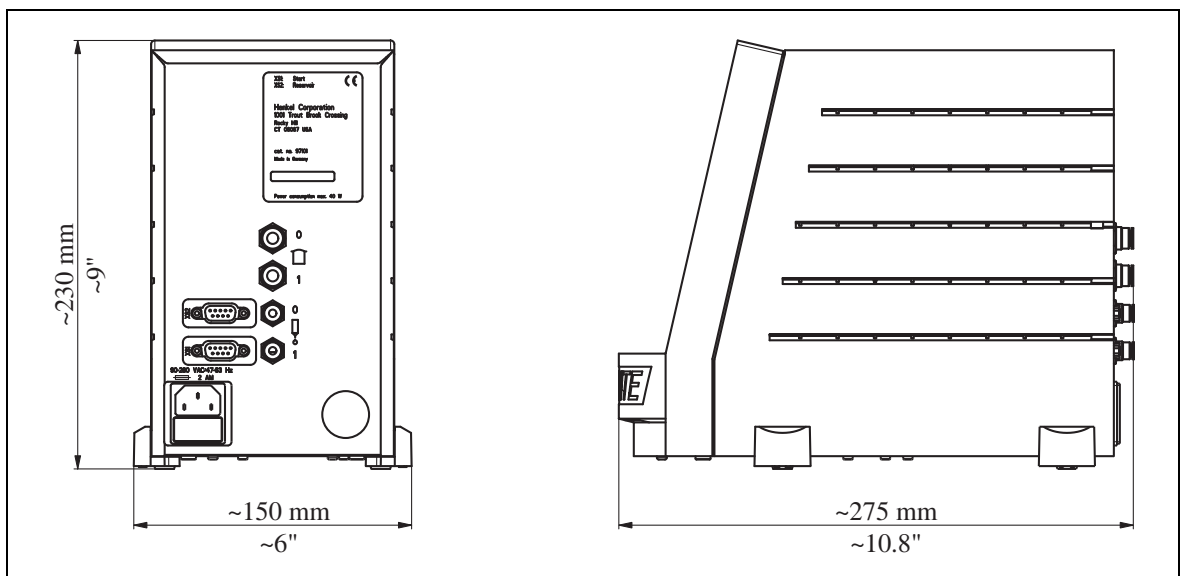
3.3 Other Data

Weight	Approx. 2.1 kg (4.6 lbs)
Operating Temperature	+10 °C to +40 °C (+50 °F to +104 °F)
Storage Temperature	-10 °C to +60 °C (+14 °F to +140 °F)
Continuous noise level	< 65 dB(A)

4.1 Environmental and Operating Conditions

- Keep the pressure hose as short as possible.
- Keep product feed lines as short as possible. The shorter the feedline the smaller the specific resistance and the lower the dispensing pressure can be. Avoid kinking.
- In any case, the pressure hose and product feedline should not be longer than 2 m.
- Do not use inflexible hoses and feed lines, so that unnecessary loads on the fittings will be avoided.
- Keep all fittings tight.
- No direct sunlight; no UV light.
- No condensing humidity.
- No splash water.

4.2 Space Requirements



4.3 Connecting the Unit

The numbers printed in bold in the text refer to the corresponding position numbers in the illustration on page 6-7.

- Use only the cable and hose sets supplied.
- Connect power cord to power supply socket **4**.
- Connect air pressure supply to pneumatic connection P in, **8**.
If necessary, use fitting to 1/4" NPT supplied with this unit.
- Connect footswitch to socket XS 1, **6**.
- Connect dispensing valve to pneumatic connection **10**.
Dispensing valve open 1.
Dispensing valve closed 0.
Close port 0 for single actuated valve.
- Connect remote reservoir to pneumatic connection P out, **9**.
Insert an external pressure regulator, if regulated air is required.
- Optional: Connect low level sensor to socket XS 2, **7**.
If no level sensor is used, then connect supplied terminating plug here.

5.1 Setting into Operation



CAUTION!

Observe the operating manuals of the dispense valve and remote reservoir used.

Switch the power switch **3** to position 1 (ON).

5.2 Adjusting the dispensed Quantity

5.2.1 Time Controlled Mode

This mode of operation is used for spot shaped wetting or drop dispensing.

- With buttons \triangle or ∇ set the dispensing time to 0.50 s. The indication of the dispensing time in the digital display begins blinking.
- With the pressure regulator of the remote reservoir set the dispensing pressure to 0.5 bar (approx. 7 PSI).

If the dispensed quantity is too small:

- Increase the dispensing pressure. After this check the dispensed quantity. Repeat this sequence until the desired dispensed quantity is roughly achieved.

When the desired dispensed quantity is roughly achieved:

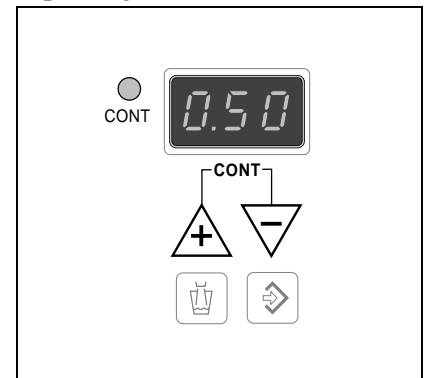
- Set the exact dispensed quantity by changing the dispensing time with button \triangle or ∇ .
- Press the footswitch to check the dispensed quantity.

Storing of the dispensed quantity setting for subsequent dispensing:

- Press button \square . The indication of the dispensing time in the digital display stops blinking.

If the desired dispensed quantity is not achieved:

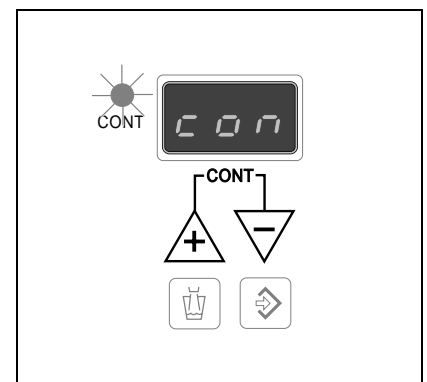
- With a larger (or smaller) dispensing needle, repeat the steps of this section.



5.2.2 Continuous Mode

This mode of operation is used for the application of beads.

- With the pressure regulator of the remote reservoir set the dispensing pressure to 0.5 bar (approx. 7 PSI).
- Press the buttons \triangle and ∇ simultaneously. The lighting of the LED "CONT." indicates Continuous mode. The display of the dispensing time in the digital display is set to **con.**
- Press the button \square (or the foot switch) to check if the product is ejected quickly enough from the dispensing needle.



When the dispensed quantity is achieved too slowly:

- Increase the dispensing pressure or repeat this sequence with a larger dispensing needle.
- Switching back to time controlled mode without storage of the dispensing time by renewed pressing of button \triangle or ∇ . The LED extinguishes. In the digital display, the dispensing time is blinking.
- Switching back to time controlled mode with storage of the dispensing time by pressing button \square . The LED extinguishes. The indicated dispensing time is stored.

5

Dispensing

5.3 Shutdown for Longer Periods of Non-use

- Disconnect the pneumatic supply from the controller.

5.4 Returning to Operation after Longer Periods of Non-use

- Reconnect the pneumatic supply to the controller.
- Check the installation according to Chapter 4.
- Return to operation according to Section 5.1.

6

Care and Maintenance

The unit requires no special care and maintenance.





CAUTION!

Observe the operating manuals of the dispense valve and remote reservoir used.

7

Troubleshooting

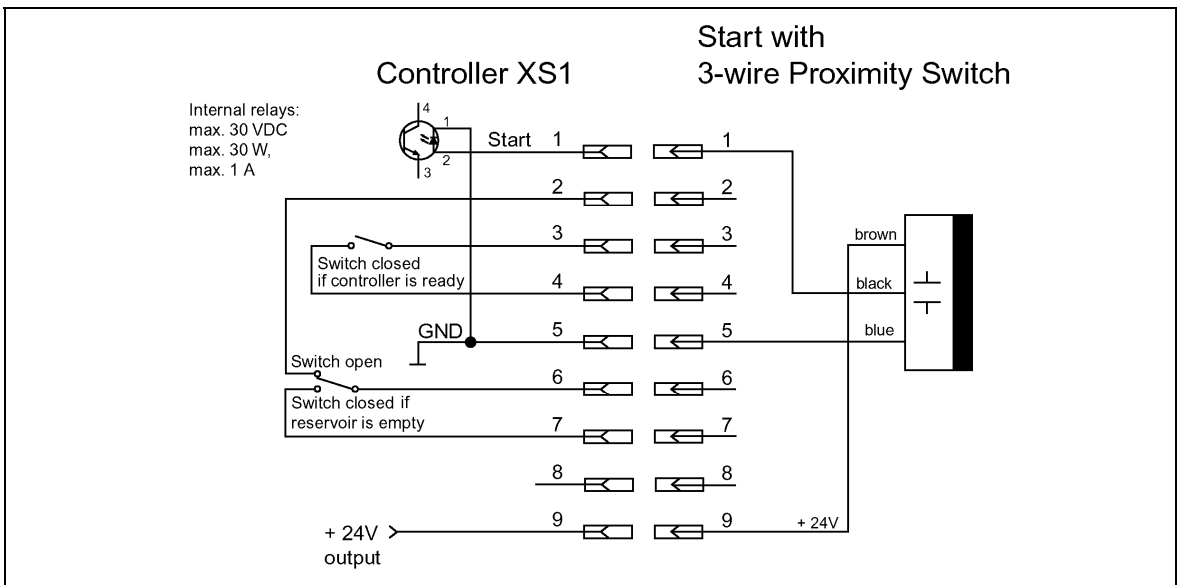
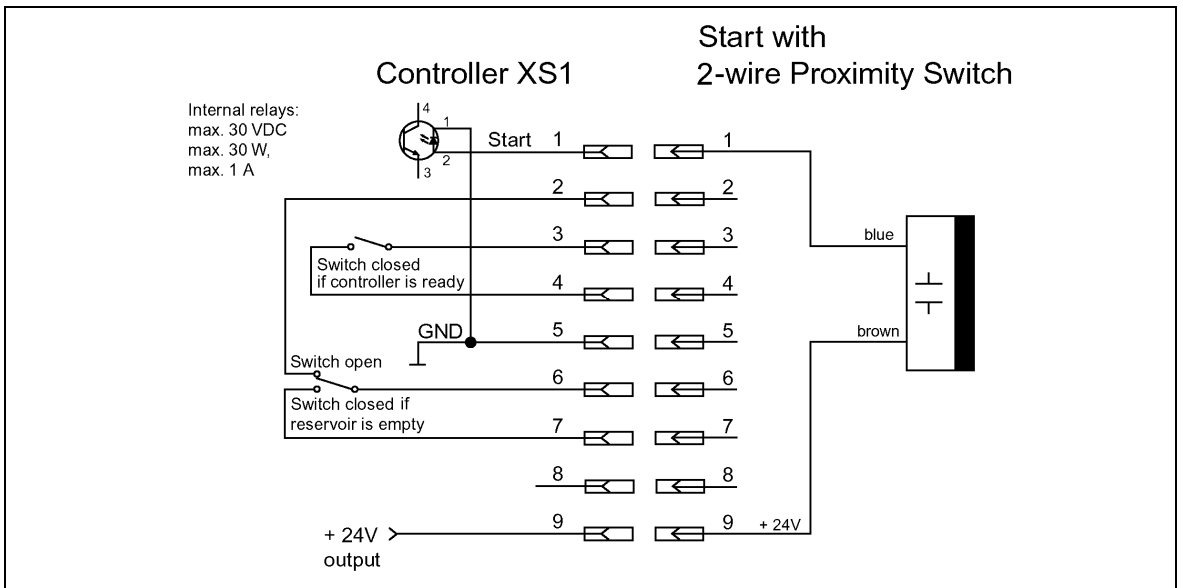
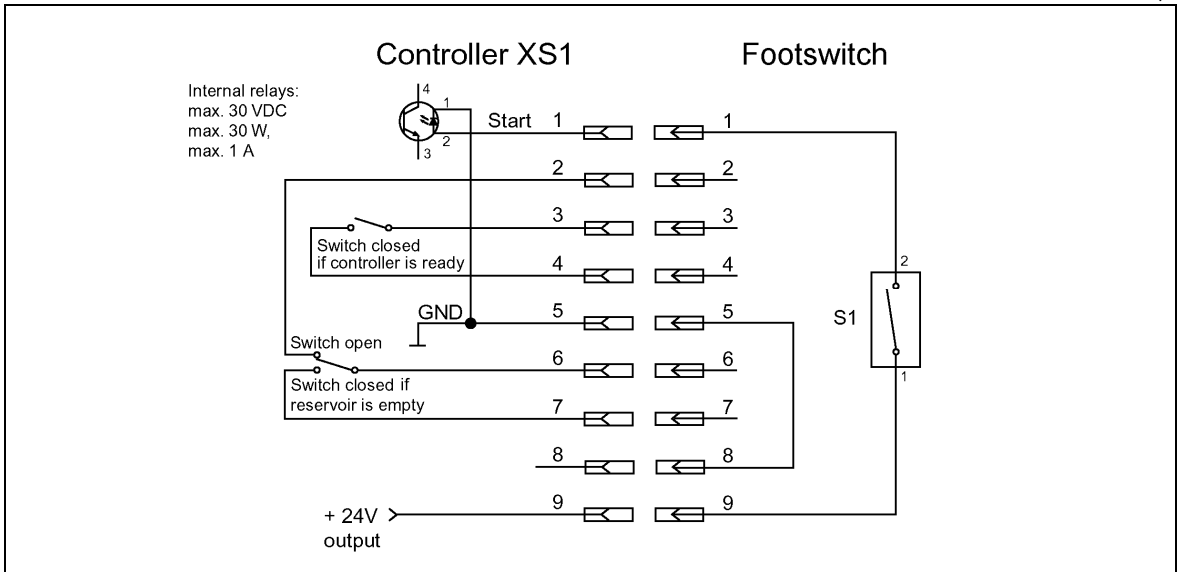
Type of Malfunction	Possible Causes	Corrections
The digital display does not light.	<ul style="list-style-type: none">– No power voltage present.– Powers switch 3 in position 0 (OFF).– Power fuse 5 is defective.– Power cord is defective.– Control unit is defective.	<ul style="list-style-type: none">• Check the power voltage.• Switch power switch to position 1 (ON).• Check/replace fuse.• Replace power cord.• Henkel Service.
No start signal.	<ul style="list-style-type: none">– Plug on the socket XS 1: Start 9 is loose.– Footswitch defective.– Reservoir is empty / low level indicator on.	<ul style="list-style-type: none">• Switch the power switch to the position 0 (OFF). Tighten the screws of the plug. Switch the power switch to the position 1 (ON).• Replace the Footswitch.• Refill reservoir.
Timer is not operating	<ul style="list-style-type: none">– Continuous mode is activated (LED is on).– Low level indicator is on.– Product package is empty.	<ul style="list-style-type: none">• Press the buttons  and  simultaneously to switch back to time controlled mode.• Adjust low level sensor.• Refill reservoir.
No air pressure at reservoir	<ul style="list-style-type: none">– No power voltage present.– Powers switch 3 in position 0 (OFF).– No incoming air supply.	<ul style="list-style-type: none">• Check the power voltage.• Switch power switch to position 1 (ON).• Check air supply.
No air supply to dispense valve	<ul style="list-style-type: none">– No power voltage present.– Powers switch 3 in position 0 (OFF).– No incoming air supply.	<ul style="list-style-type: none">• Check the power voltage.• Switch power switch to position 1 (ON).• Check air supply.

8.1 Spare Parts and Accessories

Item	Description	Type No.	Order Code No.
–	Filter Regulator	985397	478603
	Requires fitting 1/4 inch Male NPT x 1/8 inch Male NPT ...	989071	739975
–	Footswitch	97201	88653
–	Power Cord, cold appliance coupling IEC 320 acc. To VDE 0625, male connector according to the national regulations such as DIN, VDE, IEC; SEV, UL, CSA, SEMKO, IEC/B.S., IEC/3-pin US.	–	–
–	Power Supply	8950490	881499
–	CPU Board	8950891	529516
–	Power Fuse, 2 A / 250 V semi time-lag, glass type, 5 x 20 mm, according IEC 60127-2/V.	–	–
The following spare parts can be ordered at your local industrial distributor:			
–	3/2 way solenoid valve (control valve for remote reservoir)	Festo Part Number 34307 MYH-3-M5-L-LED	
–	5/2 way solenoid valve (control valve for external dispensing valve).....	Festo Part Number 34309 MYH-5/2-M5-L-LED	

8.2 Pin Assignment XS 1

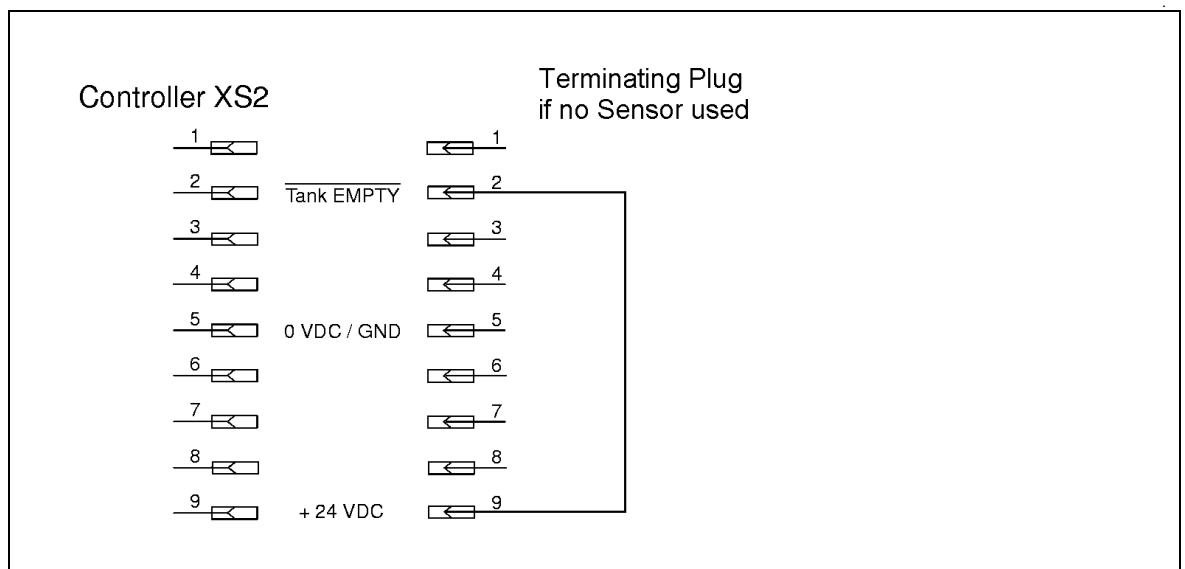
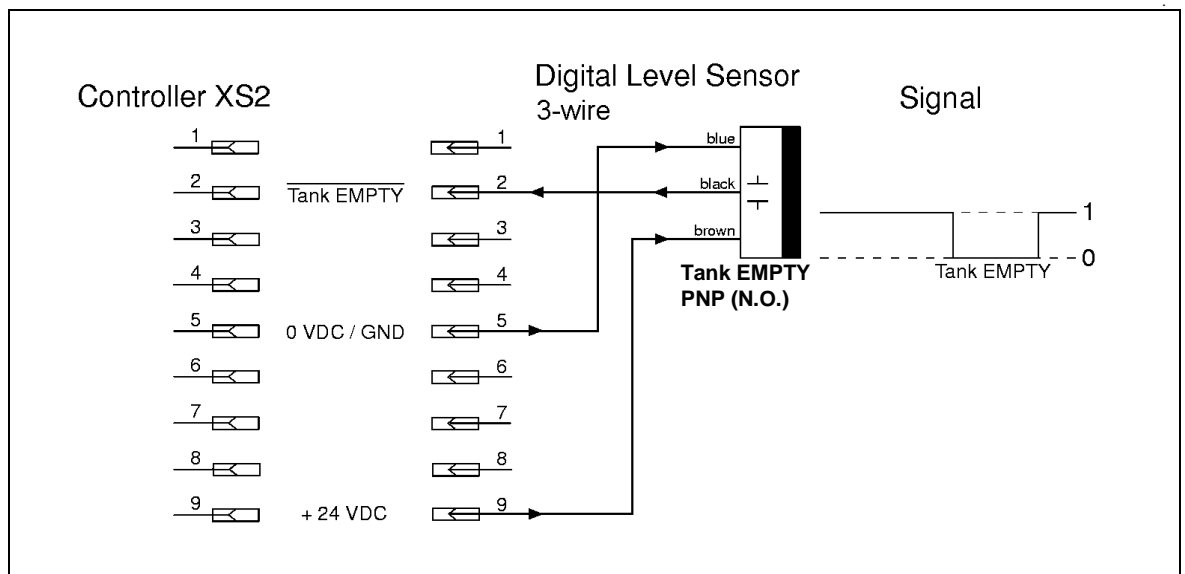
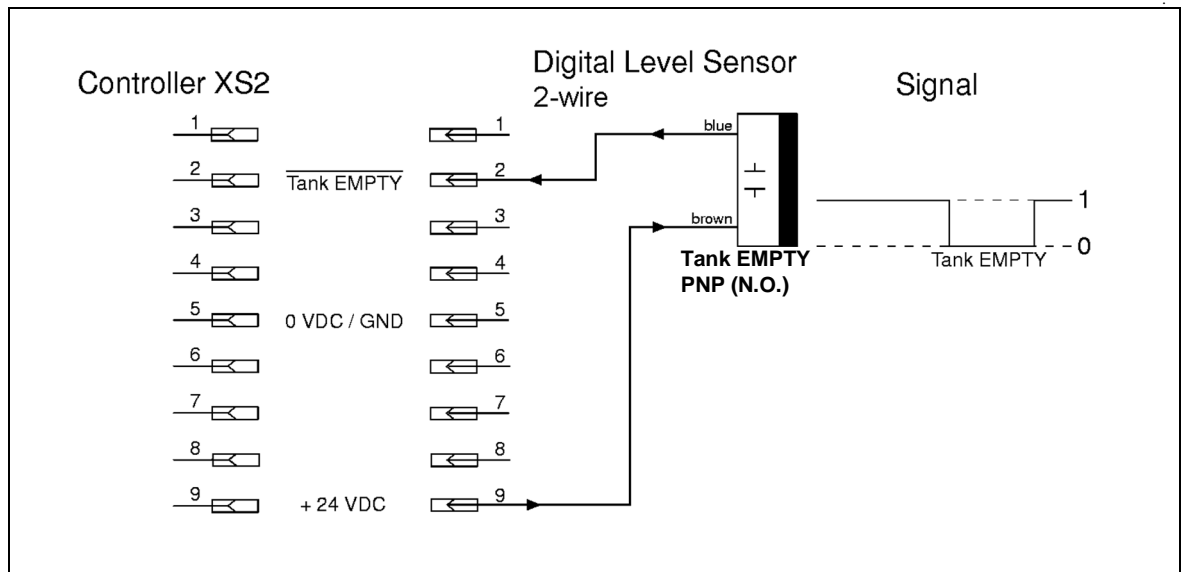
! **CAUTION!**
Never connect external voltage on pin 1 or 9!



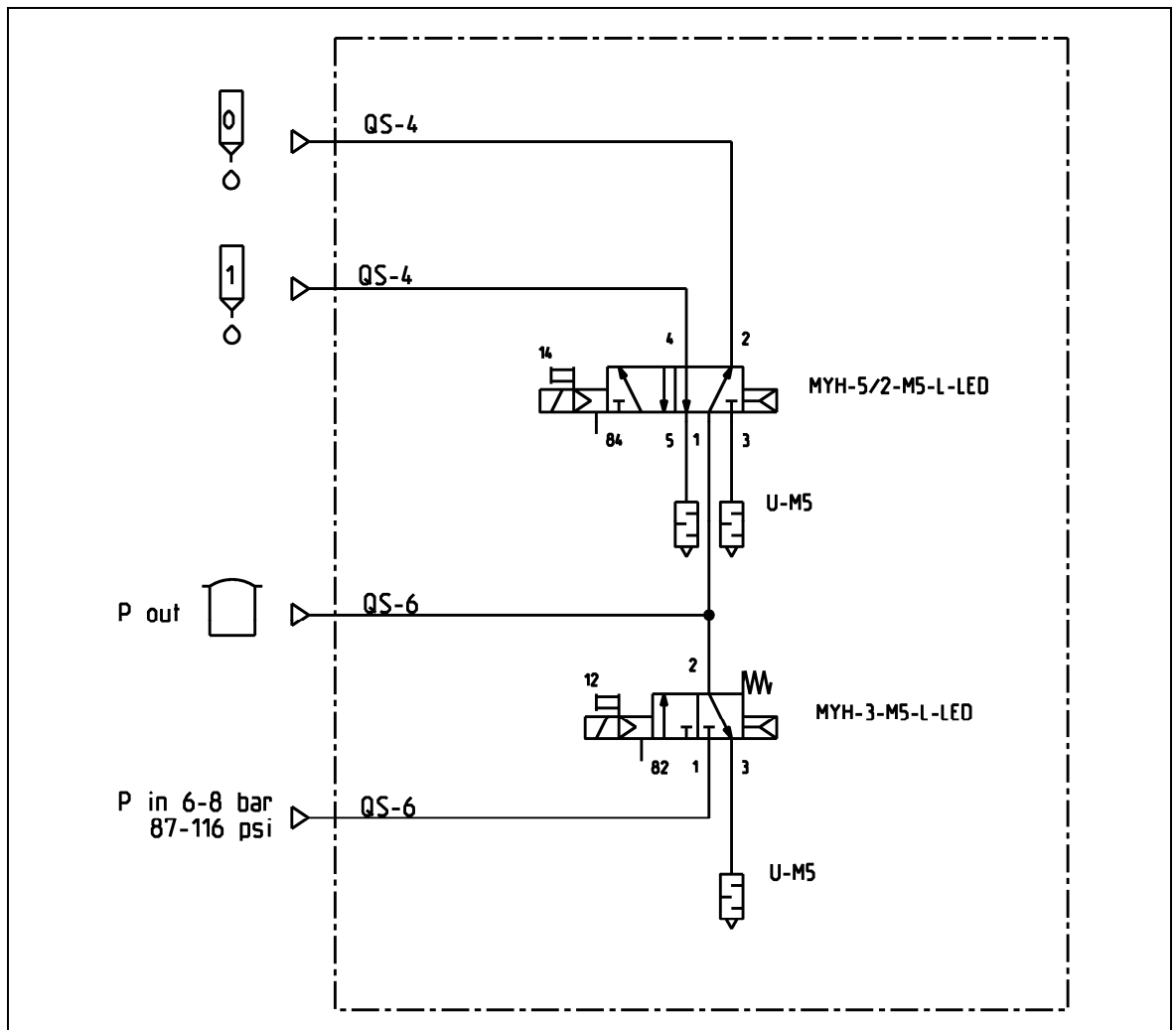
8.3 Pin Assignment XS 2

**CAUTION!**

Never connect external voltage on pin 1 or 9!



8.4 Pneumatic Diagram



8.5 Declaration of Conformity

The Manufacturer according to the EC regulations	Henkel KGaA Standort München Arabellastraße 17 D-81925 München
declares that the unit designated in the following is, as a result of its design and construction, in accordance with the European regulations, harmonized standards and national standards listed below.	
Designation of the unit	Digital Dispense Controller 97101
Order code no.	961819
Applicable EC Regulations	EC Directive for Low Voltage 73/23/EEC EC Directive for Electro-Magnetic Compatibility 89/336/EEC, including changes 91/263/EC, 92/31/EEC and 93/68/EC
Applicable harmonized standards	EN 60204-1: 1997; EN 61000-6-3:2001 EN 61000-6-4:2001
Date/Manufacturer's signature	Henkel KGaA, Standort München Arabellastraße 17 81925 München Deutschland (J. von Arnell)
This declaration is not valid if there are any changes not approved by Henkel.	

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