

# Diagnostic software TITANUS *PRO-SENS*<sup>®</sup>

Step by Step guide

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# 1 States

## 1.1 Air flow indicator

The air flow measuring value of the detector module is shown by a bar-graph and percentages. When operating a detector module without air flow monitor the "Air flow" field is blanked-out.

The current air flow value is indicated by the blue marker on the bargraph. Below this graph, the value is shown in percentages. 0% equals the air flow at the time of adjustment. If the air flow value varies by  $\pm 100\%$  or more a fault is indicated. The blue marker is then outside the permissible range which is marked yellow on the bar-graph. Small variations from the nominal value are permissible. They can be caused by temperature changes, or changes of air pressure/humidity compared with that at the time of adjustment.

If the discrepancy is positive, the air flow has increased. This points to pipe damage (breaks, tears, dissolved glued connections) or enlarged (loose) sampling points.

If the discrepancy is negative, the air flow has decreased. This could be caused by blocked sampling points, impurities in the pipe or a soiled air filter.

## 1.2 Detector state indicator (current air and detector pollution)

The indicator shows the pollution of the detector module, i.e. the sampled air, and is shown in a bar-graph and by percentages. 0% equals the "new" condition in clean surround air. The blue marker shows the current detector condition. If it leaves the yellow area (discrepancy at least  $\pm 100\%$ ) a fault is indicated.

A positive discrepancy indicates pollution (e.g. dust) in the sampled air. This can be remedied with an air filter or, if possible, by switching to a lower sensitivity. Soil deposits inside the module also raise the value.

A negative discrepancy is caused by diminishing light from the optics inside the detector module. Reasons for this could be an aging light source or pollution in the optics.

## 2 Fault messages

### 2.1 Detector module defective

To correct this, the following steps must be taken in sequence:

Step	Possible cause	Diagnosis	Measures
1	Detector module is defective	There is a defect of the detector module.	Replace detector module
2	If the fault cannot be corrected after carrying out the above step, save the latest diagnostic data. Contact <b>WAGNER</b> , giving the fault description and diagnostic data.		

### 2.2 Program fault

To correct this, the following steps must be taken in sequence:

Step	Possible cause	Diagnosis	Measures
1	Detector module is defective	<ul style="list-style-type: none"> <li>- Make sure device is current-free.</li> <li>- Replace detector module</li> <li>- Switch on power and run device for 5 minutes.</li> </ul> If no fault registers, the defect lies in the detector module.	Replace detector module
2	External adverse influences	<ul style="list-style-type: none"> <li>- Check surroundings for adverse influences.</li> <li>- Operate the device for a time in different surroundings. If the fault does not recur, it can be assumed that external influences at the original location are to blame.</li> </ul>	If possible: Avoid external fault sources or instal device in a better location.
3	If the fault cannot be corrected after carrying out the above steps, save the latest diagnostic data. Contact <b>WAGNER</b> , giving the fault description and diagnostic data.		

## 2.3 Detector module dusty

To correct a fault the following steps must be taken in sequence:

Step	Possible cause	Diagnosis	Measures
1	Contamination of the surround air too heavy	<p>Detector module and sampled air are monitored for soiling/contamination.</p> <p>The bar-graph "Detector state" in the register "States module x" points to a greater contamination in the surround air or a soiled detector module. If the contamination is too heavy, the bar-graph exceeds the "max" (+100%) mark.</p> <p>- To determine contaminated air as the cause, the module has to be tested temporarily in rooms with clean air. If this is not possible, the ventilator can be disconnected temporarily from the base board – no further dirt particles can now get to the detector module.</p> <p><u>Attention:</u> A smoke detection within the supervision area of the device is not possible if the ventilator is disconnected!</p> <p>If the bar-graph begins to fall after a time, the fault is caused by the contaminated air.</p>	<p>By using an air filter in the pipe system, the burden on the detector module can be reduced.</p> <p>If possible: By switching to a lower sensitivity, the detector module can cope with greater contamination.</p>
2	Detector module dusty	If the fault persists in step 1 after the measures, the detector module is defective.	Replace detector module
3	If the fault cannot be corrected after carrying out the above steps, save the latest diagnostic data. Contact <b>WAGNER</b> , giving the fault description and diagnostic data.		

## 2.4 Air pressure out of range / potentiometer

To correct this, the following steps must be taken in sequence:

Step	Possible cause	Diagnosis	Measures
1	Potentiometer R3 setting for adjustment of pressure-dependent air flow is incorrect.	<p>If two detector modules are used, the fault registers for both modules.</p> <ul style="list-style-type: none"> <li>- Measure the voltage (DC) on the measuring points MP1 (+) and MP4 (-) with a multi meter.</li> <li>- The voltage standard is 1.2 V. Variations might occur due to pressure-dependent adjustments of the air flow.</li> <li>- If the measured voltage lies outside the range of 0.5V and 1.9V, the setting is incorrect.</li> </ul> <p><u>Note:</u> Fault occurs at voltages lower than 0.2V or higher than 2.2V.</p>	<p>Re-set the voltage between the two measuring points MP1 (+) and MP4 (-) with the potentiometer R53.</p> <ul style="list-style-type: none"> <li>- Air pressure-independent adjustment: 1.2 V</li> <li>- Air pressure-dependent adjustment: according to manual (air pressure correction table in enclosure)</li> </ul> <p>Further information see TITANUS PRO·SENS® manual, chapter 7.1.</p>
2	Base board is defective	<p>The voltage cannot be adjusted in step 1:</p> <ul style="list-style-type: none"> <li>- Make sure the device is current-free.</li> <li>- Pull off cable connecting detector module and base board.</li> <li>- Switch on power and run device for 5 minutes.</li> </ul> <p>The base board is defective if the voltage on MP1 and MP4 cannot be properly adjusted with the potentiometer R53.</p>	Replace base board
3	Connection cable is defective	<ul style="list-style-type: none"> <li>- Make sure the device is current-free.</li> <li>- Replace connection cable of 1st detector module</li> <li>- Switch on power and run device for 5 minutes.</li> </ul> <p>If the fault does not recur, the defect lies in a defective connection cable.</p> <p>If there are two detector modules repeat the procedure.</p>	Replace connection cable
4	Detector module is defective	If the fault persists in step 3 after the measures, the detector module is defective.	Replace detector module
5	If the fault cannot be corrected after carrying out the above steps, save the latest diagnostic data. Contact <b>WAGNER</b> , giving the fault description and diagnostic data.		

## 2.5 Air flow controller at its limit

The fault can only occur at detector modules with air flow monitoring.

To correct the fault, the following steps must be taken in sequence:

Step	Possible cause	Diagnosis	Measures
1	Air flow speed is too low	<p>Check whether the fault is caused in the pipe system or the device:</p> <ul style="list-style-type: none"> <li>- Disconnect the pipe system from the device and attach a test pipe.</li> <li>- Close only the 4.6mm hole in the test pipe and make the adjustment for the air flow. Details are in the manual for TITANUS PRO·SENS®.</li> </ul> <p>If the fault does not recur, the pipe system and its design must be inspected.</p> <p><b>Note:</b> The air flow speed in a sampling pipe with an outer diameter of 25mm must be at least 1m/sec. If necessary, the speed must be measured with a suitable measuring device.</p>	<p>Inspect the pipe system (especially for blockages). Also check for blocked air filters or closed ball valves.</p> <p>Check the pipe system design for correct use of air flow reducers.</p>
2	Detector module is defective	If the fault persists in step 1 while connected to the test pipe, the detector module is defective.	Replace detector module
3	If the fault cannot be corrected after carrying out the above steps, save the latest diagnostic data. Contact <b>WAGNER</b> , giving the fault description and diagnostic data.		

## 3 Settings

### 3.1 Flash code diagnosis LED

The diagnosis LED on the detector module shows the actual condition of the module. It is an additional aid to the fault-finding data of Diagnostic software. The table shows the flash code:

Flash Codes of Diagnostic LED on Detector Module	
Amount	Meaning
2 x flashes	Airflow – too little (blockage)
3 x flashes	Airflow – too great (break)
4 x flashes	Software - Init
Constantly lit	Detector module defective

### 3.2 Settings of the DIL switch


In the register “Settings module“, the current settings for the detector module are shown.

The settings of the DIL switches on the detector module are indicated:

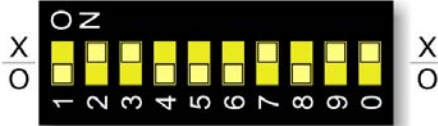
red – OFF (O)

green – ON (X)

The following table shows the possible settings.



**Standard-Setting: \*)**



<b>Sensitivity</b> . . . . .	<b>1 2</b>								
1/1 Nominal-sensitivity (e.g. 0,25%/m) (standard) *)	O	O							
1/2 Nominal-sensitivity (e.g. 0,5%/m)	X	O							
1/4 Nominal-sensitivity (e.g. 1%/m) (standard)	O	X							
1/8 Nominal-sensitivity (e.g. 2%/m)	X	X							
<b>Alarm delay</b> . . . . .	<b>3 4</b>								
0 s . . . . .	O	O							
<b>10 s</b> (standard)	X	O							
30 s . . . . .	O	X							
60 s . . . . .	X	X							
<b>Air flow range</b> . . . . .	<b>5 6</b>								
small . . . . .	X	O							
medium . . . . .	O	X							
<b>large</b> (standard)	O	O							
very large . . . . .	X	X							
<b>Fault delay</b> . . . . .	<b>7 8</b>								
30 s . . . . .	O	X							
<b>2 min</b> (standard)	X	O							
15 min . . . . .	X	X							
60 min . . . . .	O	O							
<b>Fault latched</b> . . . . .	<b>9</b>								
Off . . . . .	O								
<b>On</b> (standard)	X								
<b>LOGIC-SENS</b> . . . . .	<b>10</b>								
Off . . . . .	O								
<b>On</b> (standard)	X								

\*) Standard for detector-modules DM-TP-80: 1=OFF, 2=OFF