

Booth exhaust air monitoring

TW
Gema



Documentation Booth exhaust air monitoring

© Copyright 2007 ITW Gema AG

All rights reserved.

This publication is protected by copyright. Unauthorized copying is prohibited by law. No part of this publication may be reproduced, photocopied, translated, stored on a retrieval system or transmitted in any form or by any means for any purpose, neither as a whole nor partially, without the express written consent of ITW Gema AG.

OptiTronic, OptiGun, EasyTronic, EasySelect, OptiFlow and Super-Corona are registered trademarks of ITW Gema AG.

OptiMatic, OptiMove, OptiMaster, OptiPlus, MultiTronic and Gematic are trademarks of ITW Gema AG.

All other product names are trademarks or registered trademarks of their respective holders.

Reference is made in this manual to different trademarks or registered trademarks. Such references do not mean that the manufacturers concerned approve of or are bound in any form by this manual. We have endeavored to retain the preferred spelling of the trademarks, and registered trademarks of the copyright holders.

To the best of our knowledge and belief, the information contained in this publication was correct and valid on the date of issue. ITW Gema AG makes no representations or warranties with respect to the contents or use of this publication, and reserves the right to revise this publication and make changes to its content without prior notice.

Printed in Switzerland

ITW Gema AG
Mövenstrasse 17
9015 St. Gallen
Switzerland

Phone: +41-71-313 83 00
Fax.: +41-71-313 83 83

E-Mail: info@itwgema.ch
Homepage: www.itwgema.ch

Table of contents

General information	3
Pressure switches	3
Setting-up the switching points	5
B30: Too much air volume	5
B31: Air volume too low	5
B34: ATEX Alarm	6
Monitoring switching points for the booth exhaust air	7
Switching points to MAHLE After Filters	7
Switching points to TAMA After Filters	8

General information



WARNING:

Set up the pressure switches is a sensitive operation and require some particular knowledge.

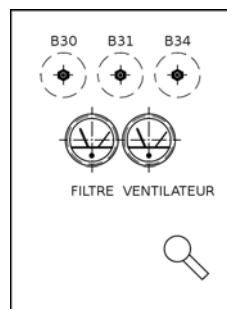
It should be done by specialists.

In case of disruption, please contact ITW Gema.

Pressure switches

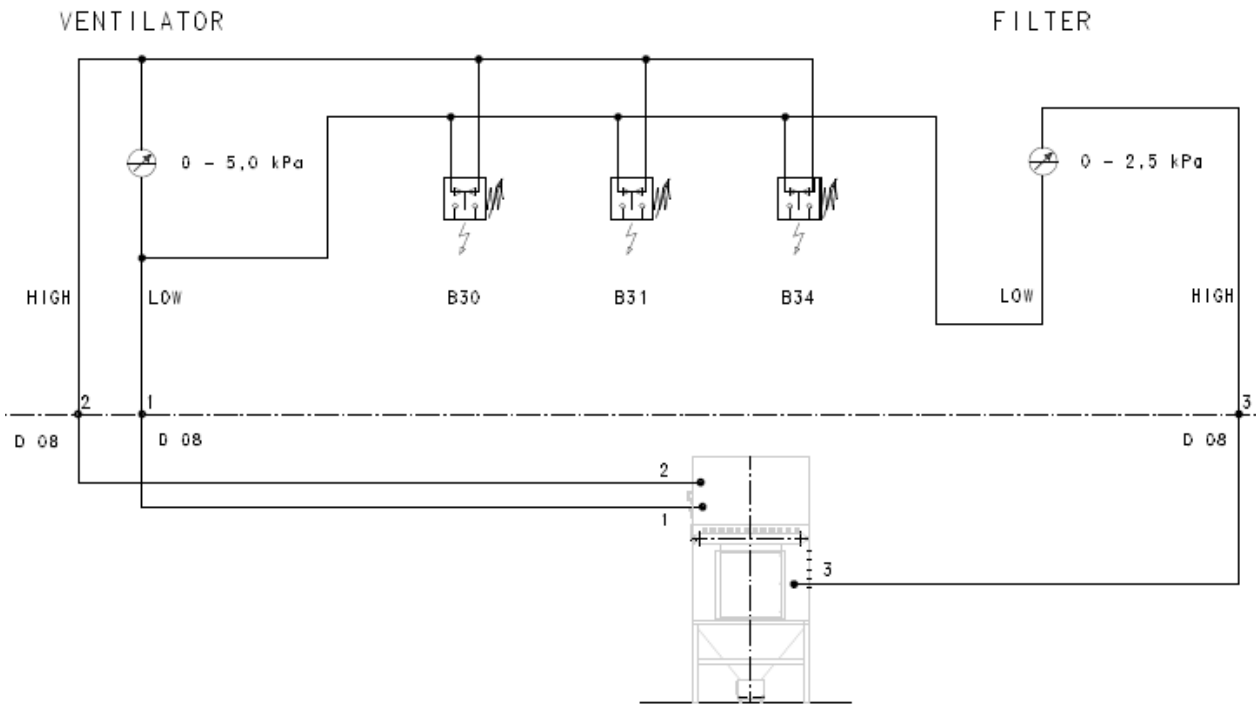
This procedure is done in order to help you in adjusting filter safety pressure switches. These pressure switches are located on the cabinet near filter.

It looks like this:

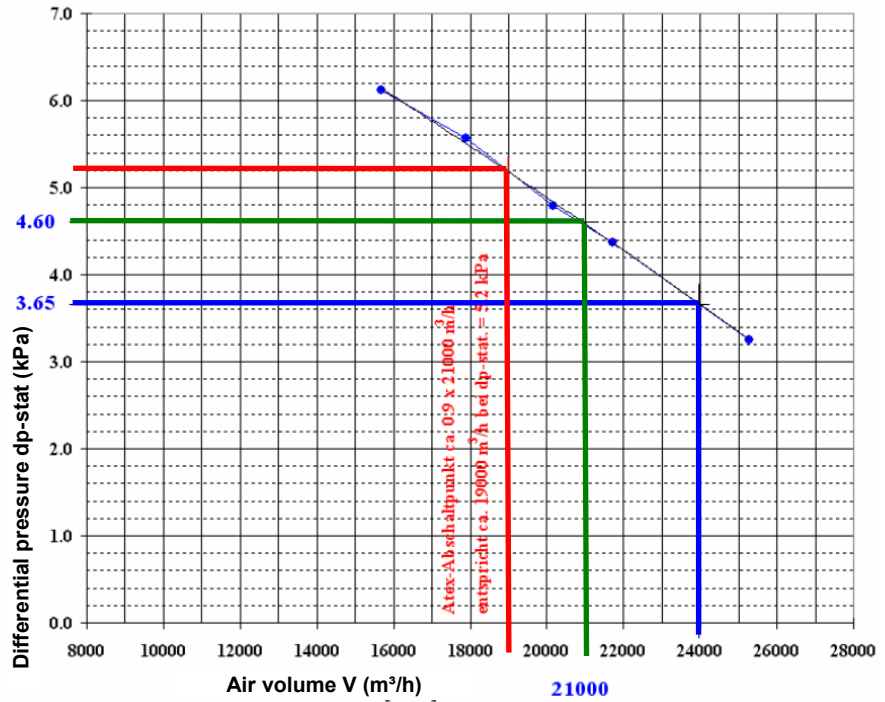


For set up, you only need to have a look to the pressure gauge called "Ventilator".

The pneumatic drawing is this one:



You need to get the ventilator working curve to do the set up, it looks like this:

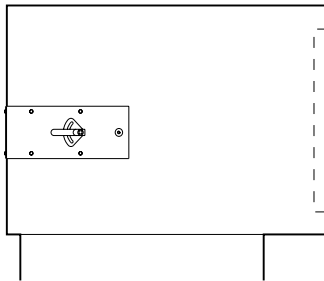


Example:

- Maximum air volume (B30) 24000 m³/h = 3.65 kPa
- Minimum air volume (B31) 21000 m³/h = 4.6 kPa
- ATEX alarm (B34) 19000 m³/h = 5.2 kPa

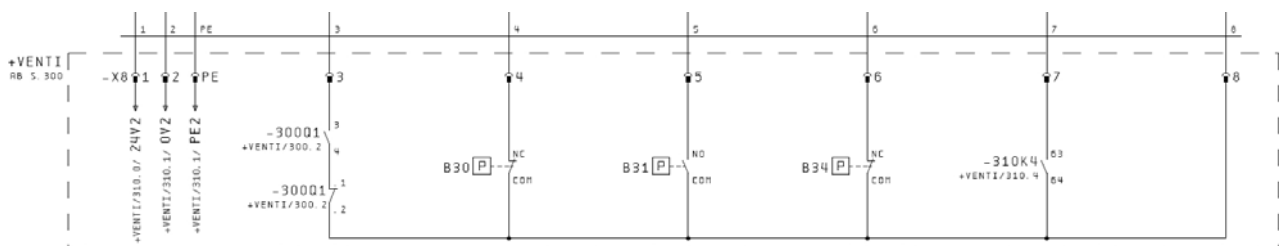
Setting-up the switching points

B30: Too much air volume



1. Adjust the throttle dumper (see picture) until the pressure gauge needle indicate the dp-stat value for maximum air volume.
2. When done, remove the B30 cover (left one)
3. Turn the screw until you hear booth's alarm. You can also use a multimeter connected directly on contacts you have disconnect wires.
4. Turn back the screw until no sound.

Here is electrical schematic for filter cabinet.



B31: Air volume too low

1. Adjust the throttle dumper until the pressure gauge needle indicates dp-stat value for minimum air volume.
2. When done, remove the B31 cover (middle one)
3. Turn the screw until you hear booth's alarm. You can also use a multimeter connected directly on contacts you have disconnect wires.
4. Turn back the screw until no sound.

B34: ATEX Alarm

1. Adjust the throttle dumper until the pressure gauge needle indicates dp-stat value for insufficient air volume (ATEX shut down point).
2. When done, remove the B34 cover (right one)
3. Turn the screw until you hear multimeter's alarm or see OptiStar off. You can also use a multimeter connected directly on contacts you have disconnect wires.
4. Turn back the screw until no sound (multimeter) or see OptiStar on.
5. Now reconnect wires and close protections

Monitoring switching points for the booth exhaust air

Switching points to MAHLE After Filters

Booth type	Working range [m³/h]	MB-254	Fan power [kW]	Sw. point V _{MAX} [m³/h] B30 [kPa]	Sw. point V _{MIN} [m³/h] B31 [kPa]	Sw. point V _{ATEX} [m³/h] B34 [kPa]
Small booths with Monocyclone	4500-5000	page 9.01	11	5000 m³/h 3.7 kPa	4500 m³/h 4.0 kPa	4000 m³/h 4.2 kPa
MRS-Multicyclone 8000	7500-8250	page 9.02	15	8250 m³/h 3.0 kPa	7500 m³/h 3.3 kPa	6600 m³/h 3.7 kPa
MagicCylinder MagicPlus MagicCompact MRS-Multicyclone special	10600-12000	page 9.03	22	12000 m³/h 3.9 kPa	10600 m³/h 4.3 kPa	9500 m³/h 4.5 kPa
Multiple Color Plant MRS-Multicyclone 12000	11400-12600	page 9.04	22	12600 m³/h 3.8 kPa	11400 m³/h 4.1 kPa	10000 m³/h 4.4 kPa
MagicCylinder MagicPlus MagicCompact MRS-Multicyclone special	14600-16000	page 9.06	30	16000 m³/h 4.1 kPa	14600 m³/h 4.5 kPa	13000 m³/h 4.9 kPa
Multiple Color Plant MRS-Multicyclone 16000	15200-16500	page 9.07	30	16500 m³/h 3.9 kPa	15200 m³/h 4.3 kPa	13700 m³/h 4.7 kPa
MagicCylinder MagicPlus MagicCompact	16500-18000	page 9.08	37	18000 m³/h 4.3 kPa	16500 m³/h 4.8 kPa	14600 m³/h 5.2 kPa
MagicPlus	18100-20000	page 9.10	37	20000 m³/h 3.8 kPa	18100 m³/h 4.4 kPa	16200 m³/h 4.9 kPa
MagicCylinder MagicCompact	18100-20000	page 9.11	45	20000 m³/h 4.9 kPa	18100 m³/h 5.4 kPa	16200 m³/h 6.0 kPa
MagicCompact	21000-22500	page 9.12	45	22500 m³/h 4.1 kPa	21000 m³/h 4.6 kPa	19000 m³/h 5.2 kPa
MagicPlus MagicCylinder oval	21000-24000	page 9.13	45	24000 m³/h 3.7 kPa	21000 m³/h 4.6 kPa	19000 m³/h 5.2 kPa

Max. booth exhaust air volume

V_{MAX} **pressure switch** B30

Min. booth exhaust air volume

V_{MIN} **pressure switch** B31

ATEX Shut down point

V_{ATEX} **pressure switch** B34

Switching points to TAMA After Filters

Booth type	Working range [m ³ /h]	MB-254	Fan power [kW]	Sw. point V _{MAX} [m ³ /h] B30 [kPa]	Sw. point V _{MIN} [m ³ /h] B31 [kPa]	Sw. point V _{ATEX} [m ³ /h] B34 [kPa]
MagicCylinder MagicPlus MagicCompact MRS-Multicyclone special	10600-12000	page 9.01	22	12000 m ³ /h 3.8 kPa	10600 m ³ /h 4.1 kPa	9000 m ³ /h 4.3 kPa
MagicCylinder MagicPlus MagicCompact MRS-Multicyclone special	14600-16000	page 9.02	30	16000 m ³ /h 3.8 kPa	14600 m ³ /h 4.2 kPa	13000 m ³ /h 4.5 kPa
MagicCylinder MagicPlus MagicCompact	16500-18000	page 9.03	37	18000 m ³ /h 4.5 kPa	16500 m ³ /h 4.9 kPa	14600 m ³ /h 5.4 kPa
MagicPlus	18100-20000	page 9.04	37	20000 m ³ /h 4.0 kPa	18100 m ³ /h 4.5 kPa	16200 m ³ /h 5.0 kPa
MagicCylinder MagicCompact	18100-20000	page 9.05	45	20000 m ³ /h 5.0 kPa	18100 m ³ /h 5.5 kPa	16200 m ³ /h 6.0 kPa
MagicCompact	21000-22500	page 9.06	45	22500 m ³ /h 4.3 kPa	21000 m ³ /h 4.7 kPa	19000 m ³ /h 5.3 kPa
MagicPlus MagicCylinder oval	21000-24000	page 9.07	45	24000 m ³ /h 3.9 kPa	21000 m ³ /h 4.7 kPa	19000 m ³ /h 5.3 kPa

Max. booth exhaust air volume

V_{MAX} pressure switch B30

Min. booth exhaust air volume

V_{MIN} pressure switch B31

ATEX Shut down point

V_{ATEX} pressure switch B34

