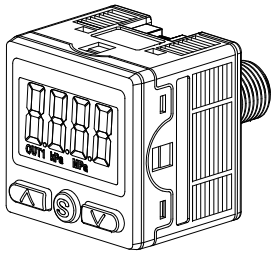


数字式压力开关

使用说明书

DPS-2 系列



使用前请认真阅读本说明书并确保掌握产品性能及使用方法，并请妥善保存本说明书供日后使用

产品使用安全指引

以下说明的注意事项是为了确保您能安全、正确地使用本产品，预先防止对您或他人或相关设备造成危害和损失。相关注意事项中，按照危害和损伤的大小及紧急程度分为「注意」「警告」「危险」三个等级。任何等级事项都是与安全相关的重要内容，这些内容也请务必遵守。未涉及的相关事项，请遵照相关地区法规、行业或企业标准等。

- 注意：** 误操作时，有人员受伤或物品破损的风险
- 警告：** 误操作时，有人员受到重大伤害甚至死亡的风险
- 危险：** 在紧急的危险状态下，如不回避会有人员受到重大伤害甚至死亡的风险

● 操作者/使用者

- 本使用说明书面向对气动元件及相关设备或装置的组装、操作、维修保养具有足够知识和经验的人员
- 组装、操作、维修保养的实施，也仅限于此类人员
- 请在充分阅读本使用说明书并理解其内容的基础上对本产品或相关设备实施组装、操作、维修保养

● 符号说明

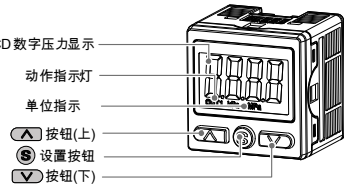
图标符号	图标符号的含义
	禁止（绝不允许做） 具体的禁止内容在图标中或在附近用图形和文字进行指示
	强制行为(必须做)。 具体的强制内容在图标中或在附近用图形和文字进行指示。

● 安全注意事项

警告	
	禁止拆解 请勿自行拆卸、改造、维修本产品。可能导致受伤及故障
	禁止 请勿在本产品规格范围外使用。请勿使用具有易燃性或对人体有影响的气体和流体。如果在本产品规格范围外使用，可能会造成火灾、误动作及产品损坏等。请确认本产品规格后使用
	禁止 请勿在有可燃性气体、爆炸性气体的环境中使用。可能导致火灾或爆炸。此产品不具有防爆功能结构
	禁止 请不要在发生静电的场所中使用。会造成系统不良及故障
	指示 在互锁回路中使用的情况下：请设置由其他系统构成的(机械式保护功能等)多重互锁回路，同时检查设备是否正常工作。否则可能因误动作引发事故
	指示 维修保养时：请切断供给电源。请在确认已切断供给气源、并把配管中的压缩空气排净后再进行维修保养。否则可能会造成人员受伤
注意	
	禁止接触 通电时请勿触碰端子、连接器。若在通电中触碰端子和连接器，可能会发生触电、设备误动作、开关破损
	指示 维修保养后，需进行适当的功能检查、泄漏检查，确保产品满足使用要求 当设备无法正常工作、发生泄露等异常情况时，请停止运转 当配管以外部分发生泄漏、压力传感器破损时，请切断电源并停止流体的供给 有泄露发生时请绝对不要供给流体 无意识的误操作，可能难以确保安全
	指示 请使用符合UL1310或UL1585 要求，等级2，最大30[Vrms]（峰值42.4V）的电源单元或变压器供电

产品各部分名称及功能说明

产品部件名称



动作指示灯（绿（OUT1），红（OUT2））：显示开关的动作状况。

LCD 显示：显示现在的压力状态、设定模式的状态、已选择的显示单位、错误代码。可以是红色或绿色的单色显示，也可以根据输出的动作由绿色变成红色，或由红色切换为绿色，共四种显示方法可以选择。

按钮（上）：上翻页或增加ON/OFF 的设定值。转换到峰值显示模式时使用。

按钮（下）：下翻页或减小ON/OFF 的设定值。转换到谷值显示模式时使用。

设置按钮：各模式的变更以及确定设定值时使用。

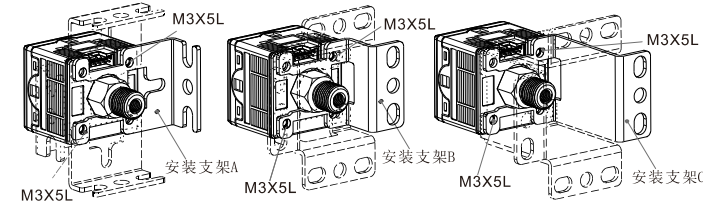
单位显示：显示当前的单位规格（显示单位为kPa或MPa）。

安装调试和使用设置

● 安装主机

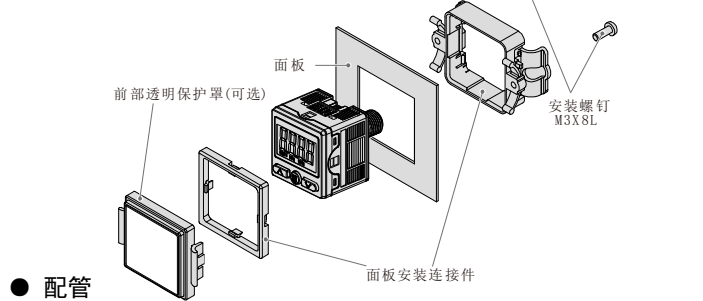
○使用托架安装

使用M3×5(2个)安装螺钉将托架安装到产品本体上。托架安装螺钉的紧固力矩为0.5~0.7 Nm。托架安装连接件可旋转到不同方向进行安装，安装者可根据实际需求选择合适角度方向。



○使用带保护面板连接件安装

使用安装螺钉M3×8(2个)固定面板安装连接件。面板安装连接件可旋转安装，注意选择合适角度方向。面板连接件的种类及型号选用及开孔尺寸要求请咨询经销商或供应商。



● 配管

○接头连接

产品带有R1/8外螺纹及M5-0.8内螺纹。

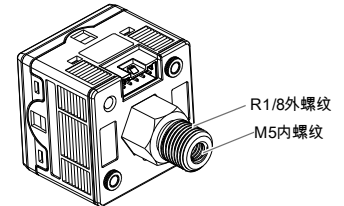
请选择合适的螺纹接头连接，注意使用密封胶或螺纹密封带保证连接密封可靠。螺纹紧固力矩7~9 Nm。

如使用螺纹快插接头，注意请把软管沿直角切断后慢慢插入快插接头，并确保插到底。检查确保连接密封可靠。

● 配线

○关于接线

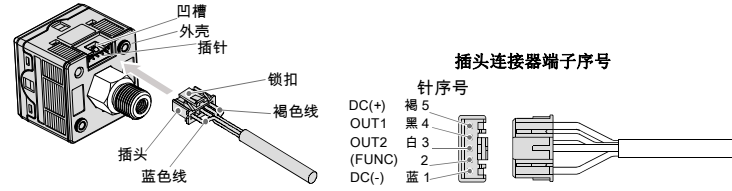
- 进行接线作业时请务必切断电源。
- 配线请使用单独的配线路径。若与动力线 and 高压线使用同一线路，可能因干扰信号导致误动作。
- 使用开关电源时，请务必将FG端子接地。与开关电源连接时，会产生开关干扰信号，无法满足产品规格。此时请在开关电源与产品之间安装滤波器（例如线路滤膜器或磁环等），或使用线性电源代替开关电源。



○配电插头的装拆方法

• 安装插头时，用手抓住线端插头直着插入产品插座中。注意检查：插入到位后，线端插头上的锁扣会扣紧产品插座上的凹槽，防止电缆脱落。

• 拆卸插头时，用拇指将线端插头上的锁扣按下，使锁扣脱离产品插座上的凹槽，然后插头直着拔出。



压力设定方法

● 压力测试模式

该模式进行压力检测、显示压力值和开关的动作状态。

该模式是产品基本工作模式。其他模式如功能设定、功能调节等，需在进入该模式后再行调节或设定。

开关输出的ON点和OFF点说明

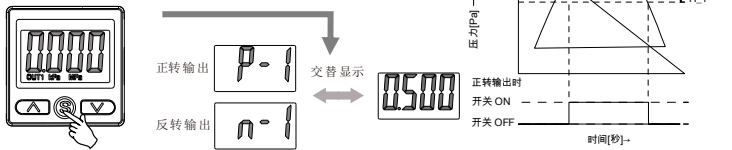
当压力超过设定值时开关ON；当压力从设定值下降到迟滞值以下时，开关会OFF。产品出厂时，产品设定在大气压和额定压力范围上限的中心值时ON。

如右下图所示产品开关动作与压力关系说明。

开关输出的ON点和OFF点的设置（迟滞模式）

① 在测试模式下按1次按钮（如下图所示）。

② 按后[P_1]或[n_1]与设定值将交替显示。



③按或按钮调整设定值。按按钮可以增大设定值，按按钮可以减小设定值。

- 按1次按钮设定值增加，连续按可连续增加
- 按1次按钮设定值减小，连续按可连续减小

④按按钮设定完成。

使用双输出时，显示为[P_2]或[n_2]的设置方法同上。在上、下限比较模式下，本产品在设定的压力范围（从P1L到P1H之间）间动作。使用与上述相同的设定方法进行P1L(开关动作下限)和P1H(开关动作上限)的设定。（当选择反转输出时，则是n1L和n1H）。

关于清零（零点校准）

同时按和按钮1秒可进行显示值清零。初次使用时，请在不加压力的状态下进行清零

功能设定

● 功能选择模式

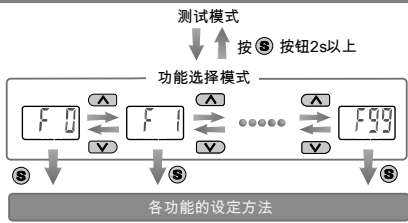
在测试模式下按按钮2秒以上将显示[F 0]。此时按上、下按键可在不同功能模式页面选择，显示内容[F□□]同时变化。进入该选择模式后按按钮2秒以上将重新返回到测试模式。

● 出厂默认设置说明

产品出厂设定如下说明。如出厂设置没有异常且满足使用要求，可不做调整直接使用。如需调整，可按本说明书上述设定方法操作。

• [F 0] 在 F0 菜单下设置压力单位

参见右侧表格说明。



压力规格	产品规格/型号	出厂压力单位
无 或 M	DPS210	MPa
	DPS30201	kPa
P	DPS210	psi
	DPS201	

• [F 1] 在 F1 菜单下设置 OUT1 项目

可设置项目	可设置项目描述	出厂默认设置值
输出模式	可选迟滞模式或上下限比较模式中的一种	迟滞模式
输出反转	可以设定开关输出的正反转	正转输出
压力的设定	可以设定开关输出的ON点或OFF点	DPS30-Z: 0.500 MPa DPS30-F: -50.5 kPa DPS30-H: 50.0 kPa
迟滞	可以根据迟滞的设定防止振荡	DPS30-Z: 0.050 MPa DPS30-F: 5.1 kPa DPS30-H: 5.0 kPa
显示颜色	可以选择显示色	输出ON时: 绿色 输出OFF时: 红色

• [F 2] 在 F2 菜单下设置 OUT2 项目

设置方法与在[F 1]菜单下设置OUT1项目相同。

显示的颜色随OUT1的设定变动，因此没有其他选择内容。

• 其他菜单下设置项目

可设置项目	出厂默认设置值
[F 3] 响应时间的设定	2.5ms
[F 4] 显示分辨率的设定	1000分辨率
[F 5] 自动预设功能的设定	手动
[F 6] 显示值微调的设定	0%
[F 7] 省电模式的设定	OFF
[F 8] 密码输入的设定	OFF
[F90] 全功能的设定	OFF
[F97] 复制功能的选择	OFF
[F98] 输出确认	正常
[F99] 恢复出厂设置	OFF

其他设定

○ 压力峰值/压力谷值显示功能

○ 清零功能

○ 按键锁定功能

更详细的设置方法请咨询经销商或供应商索要产品规格书或使用手册。

产品维护

停电和强制断电后的复位方法：断电后所有设定会保持停电前的状态。本产品的输出状态也可以恢复到停电前的状态，但受使用环境的影响，可能存在发生变化的情况。因此，重新通电后请检查确保使用设备全部安全无误后再进行操作。重新启动设备后请预热(约10-15 分)后再进行调整或使用。

异常及故障处理

● 异常显示功能

该功能通过显示故障码辅助识别异常和错误发生的部位和种类。

故障名称	故障码	故障描述	处理措施
过电流异常	Er1 Er2	开关输出的负载电流超过80mA	切断电源，排除过电流发生的原因后再重新接通电源
残压异常	Er3	在清零操作时，设备被施加超过±7%F.S.(混合压±3.5%F.S.)的压力。1秒后自动返回到测试模式。由于产品个体的差异，清零范围有±1%F.S.的差异	将供给压力恢复到大气压状态后再次进行清零操作
加压异常	HHH	施加的压力超过了设定压力范围的上限	将施加压力调整到设定压力范围内
	LLL	施加的压力低于了设定压力范围的下限	
系统异常	Er0 Er4 Er6 Er7 Er8 Er9	内部数据报警时显示	切断电源后重新接通电源。如无法恢复，需由本公司进行调查

若进行上述处理方法仍然不能恢复时，请联系经销商或供应商调查处理。

规格及详细尺寸

请咨询经销商或供应商索取产品详细规格书及功能手册。

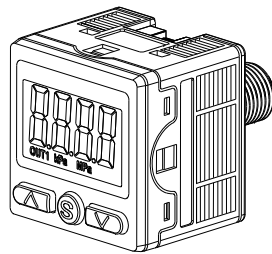
修订记录：
P/N: 021-000033-00 Version: 1.0

Digital Pressure Switch

Operation Manual

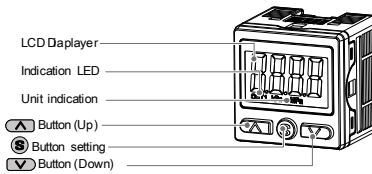
DPS-2 Series

Please read this manual carefully before operating this product and make sure you have understand its capability limitations. Please keep this manual handy for future reference.



Summary of Product Parts

Names of individual parts



Indicator LED (Green OUT1 and Red OUT2): Displays the switch output condition.
 LCD display: Displays the current status of pressure, setting mode, selected indication unit and error code. Four display modes can be selected: display always in red or green, or display changing from green to red, or red to green, according to the output status.

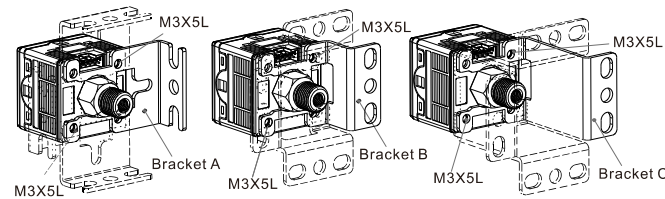
- ▲** button: Selects the mode or increases the ON/OFF set value. Press this button to change to the peak display mode.
 - ▼** button: Selects the mode or decreases the ON/OFF set value. Press this button to change to the bottom display mode.
 - S** button: Press this button to change to another mode and to set a value.
- Unit indication: Displays the unit currently selected. (kPa and MPa unit can be selected)

Mounting and Installation

Installation

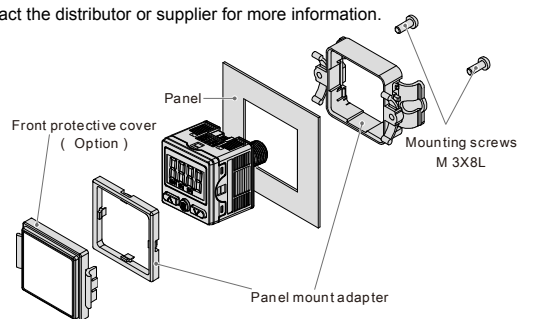
Mounting with bracket

Fix the bracket to the pressure switch with the set screws M3×5L (2 pcs) supplied. The required tightening torque of the mounting bracket screws is 0.5 to 0.7 Nm. The bracket can be rotated by 90 degrees for mounting, you can select a suitable direction to mounting based on your requirement.



Mounting with panel mount adapter

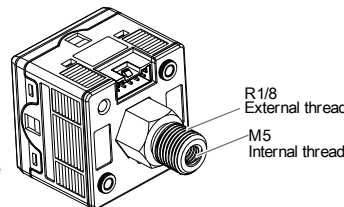
Fix the panel mount adapter to the pressure switch with the set screws M3×8 L (2 pcs) supplied. The panel mount adapter can be rotated by 90 degrees for mounting, you can select a suitable direction to mounting based on your requirement. The type of bracket or adapter can contact the distributor or supplier for more information.



Piping

Connector connecting

Product have R1/8 external thread and M5 internal thread. Please select one for connection, some sealing glue or belt maybe needed aimed at good sealing. The required tightening torque of the piping port is 7 to 9 Nm. If using one-touch fitting connector, cut the tube end perpendicular and hold the tube and insert it into the One-touch fitting slowly until it bottoms out. Make sure air tight well.



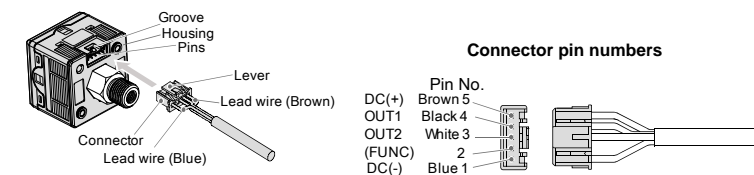
Wiring

Connection

- Connections should only be made with the power supply turned off.
- Use a separate route for the pressure switch wiring and separated from any power or high voltage wiring. Otherwise, malfunction may result due to noise.
- Ensure that the FG terminal is connected to ground when using a commercially available switch-mode power supply. When a switch-mode power supply is connected to the product, switching noise will be superimposed and the product specification can no longer be met. This can be prevented by inserting a noise filter, such as a line noise filter and ferrite core, between the switch-mode power supply and the product, or by using a series power supply instead of a switch-mode power supply.

Connecting/Disconnecting of the wire Connector

- When mounting the connector, insert it straight into the socket, holding the lever and connector body, and push the connector until the lever hooks into the housing, and locks.
- When removing the connector, press down the lever to release the hook from the housing and pull the connector straight out.



Pressure Setting

Measurement mode

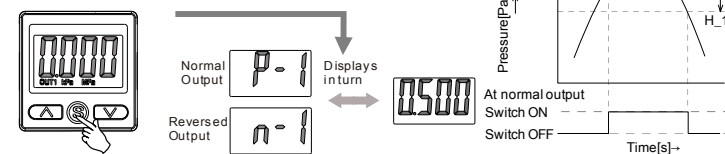
The measurement mode is the condition where the pressure is detected and displayed, and the switch function is operating. This is the basic mode, and other modes should be selected for setting changes and other function settings.

The ON and OFF points of the Pressure Switch

When the pressure exceeds a set point, the pressure switch will be turned ON. When the pressure falls below the set point by the amount of hysteresis or more, the pressure switch will be turned OFF. The default setting of the output set value is the central value between the atmospheric pressure and the upper limit of the rated pressure range. Picture in right below show the relation between pressure and the switch action.

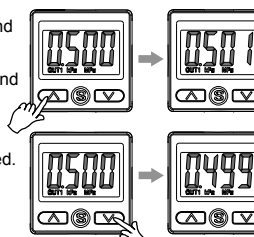
Setting the ON and OFF points of the Pressure Switch(Hysteresis mode)

- Press the **S** button once in measurement mode.
- [P_1] or [n_1] and the set value are displayed in turn.



- Press the **▲** or **▼** button to change the set value. The **▲** button is to increase and the **▼** button is to decrease.

- Press the **▲** button once to increase by one digit, and press it continuously to keep increasing the set value.
 - Press the **▼** button once to decrease by one digit, and press it continuously to keep decreasing the set value.
- Press the **S** button to finish the setting. For models with 2 outputs, [P_2] or [n_2] will be displayed. Set same method as above.



The Pressure switch operates within a set pressure range (from P1L to P1H) during window comparator mode. Set P1L (switch lower limit) and P1H (switch upper limit) with the setting procedure above. (When reversed output is selected, [n1L] and [n1H] are displayed.)

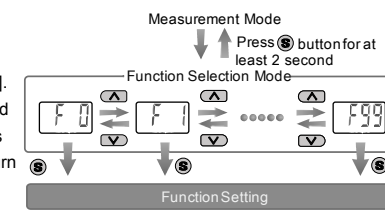
Zero Clear of Display

The display is reset to zero when the **▲** and **▼** buttons are pressed simultaneously for 1 second. For the first operation, always perform zero clear with no pressure applied.

Function Setting

Function selection mode

In measurement mode, press the button **S** for 2 seconds or longer to display [F 0]. Select to display the function to be changed [F□]. Press the button **S** for 2 seconds or longer in function selection mode to return to measurement mode.



Default setting

At the time of shipment, the following settings are provided. If this condition is acceptable and fulfill your using requirement, then keep these settings. To change the settings, enter function selection mode as method above.

Unit specification	Model	Default setting
Nil or M	DPS210	MPa
	DPS30201	kPa
P	DPS210	psi
	DPS201	

- [F 0] Units selection function in F0 Page
- Default unit setting as talbe in right side.

[F 1] Setting of OUT1 in F1 page

Item	Description	Default Setting
Output mode	Select hysteresis mode or window comparator mode	Hysteresis mode
Reversed output	Select reversed output	Normal output
Pressure setting	Set the ON or OFF point of the switch output	DPS30-Z: 0.500 MPa DPS30-F: -50.5 kPa DPS30-H: 50.0 kPa
Hysteresis	Set the hysteresis to prevent chattering	DPS30-Z: 0.050 MPa DPS30-F: 5.1 kPa DPS30-H: 5.0 kPa
Display colour	Select the display colour	ON: Green OFF: Red

[F 2] Setting of OUT2 in F2 Page

Same setting as for [F 1] OUT1. The display colour is linked to the setting of OUT1, and can not be set for OUT2.

Other parameter settings

Item	Default Setting
[F 3] Response time	2.5ms
[F 4] Display resolution	1000-split
[F 5] Auto-preset function	Manual
[F 6] Fine adjustment of display value	0%
[F 7] Power saving mode	OFF
[F 8] Security code	OFF
[F90] Setting of all functions	OFF
[F97] Copy function	OFF
[F98] Check of output	Normal
[F99] Reset to the default setting	OFF

Other setting

- Peak/Bottom hold display
- Zero clear
- Key lock

More detail setting method contact the distributor or supplier for full product specification.

Maintenance

Method to reset the product after a power cut or forcible de-energizing:

Setting of the product will be retained as it was before a power cut or de-energizing. The output condition is also basically recovered to that before a power cut or de-energizing, but may change depending on the operating environment. Therefore, check the safety of the whole installation before operating the product. If the installation is using accurate control, wait until the product has warmed up (approximately 10 to 15 minutes).

Troubleshooting

Error Indication

This function is to display error location and content when a problem or an error occurs.

Error Name	Error Display	Error Description	Troubleshooting Method
Over Current Error	Er1 Er2	The switch output load current is more than 80 mA	Turn the poweroff and remove the cause of the over current. Then turn the power on
Residual Pressure Error	Er3	During zero clear operation, pressure above±7%F.S. (±3.5%F.S.for compound pressure) has beenapplied. After 1 second, the mode will returnto measurement mode. The zero clear range can vary ±1%F.S. with individual product differences	Perform zero clear operation again after restoring the applied pressure to an atmospheric pressure condition
Pressurizing Error	HHH	Pressure has exceeded the upper limit of the set pressure range	Adjust theapplied pressure to a level within the set pressure range
	LLL	Pressure has exceeded the lower limit of the set pressure range	
System Error	Er0 Er4 Er6 Er7 Er8 Er9	Displayed in the case of an internal data error	Turn the power off and turn it on again.If resetting fails, an investigation the supplier will be required

If the error can not be reset after the above measures are taken, then please contact supplier for investigation.

Specifications and Dimension

Refer to the product catalogue or contact supplier for more support.

Revision record:
P/N: 021-000033-00 V1.0

Symbol Illumination

Symbol	Symbol Illumination
	Forbidden. Forbidden things indetail will near the related symbol or word during description
	Must to be done. Things must be done indetail will near the related symbol or word during description

Safety instructions

Warning	
	Do not disassemble, modify (including changing the printed circuit board) or repair. An injury or failure can result.
	Do not operate the product outside of the specifications. Do not use for flammable or harmful fluids. Fire, malfunction, or damage to the product can be result. Verify the specifications before use.
	Do not operate in an atmosphere containing flammable or explosive gases. Fire or an explosion can be result. This product is not designed to be explosion proof.
	Do not use the product in a place where static electricity is a problem. Otherwise it can cause failure or malfunction of the system.
	If using the product in an interlocking circuit: Provide a double interlocking system, for example a mechanical system. Check the product regularly for proper operation. Otherwise malfunction can result, causing an accident.
	The following instructions must be followed during maintenance: Turn off the power supply. Stop the air supply, exhaust the residual pressure and verify that the air is released before performing maintenance. Otherwise an injury can result.
Caution	
	Do not touch the terminals and connectors while the power is on. Otherwise electric shock, malfunction or damage to the product can result.
	After maintenance is complete, perform appropriate functional inspections and leak tests. Stop operation if the equipment does not function properly or there is a leakage of fluid. When leakage occurs from parts other than the piping, the product might be faulty. Disconnect the power supply and stop the fluid supply. Do not apply fluid under leaking conditions. Safety can not be assured in the case of unexpected malfunction.
	The direct current power supply to combine should be UL approved as follows. Circuit (of Class2) which is of maximum 30 Vrms (42.4 V peak) or less, with UL1310 Class2 power supply unit or UL1585 Class2 transformer.