

# BlazeCut Automatic Fire Suppression System

## Component Manual

### Specifications, Installation and Operation

*Pressure Switch Economical*

**APS002**



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## 1 INTRODUCTION

### 1.1.1 MANUFACTURER INFORMATION

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### 1.1.2 INSTRUCTIONS FOR USE OF THE MANUAL

This manual is intended to supply technical information for trained and authorized personnel by BlazeCut Group. Any personnel performing installation, inspection, maintenance or replacement of components with the BlazeCut system shall have this manual available and proceed solely in accordance with it. Failure to follow the instructions in this manual and any other BlazeCut manuals may result in loss of warranty, a system malfunction, causing damage to the protected equipment and may present serious danger to the life and health of others.

### 1.1.3 SAFETY FIRST

Please read this manual in its entirety. Operation and installation instructions need to be fully understood before this BlazeCut product is installed. Failure to do so may void warranty. Your local governing regulations for safety and compliance must be followed.

### 1.1.4 WARNINGS AND CAUTIONS



This symbol within the manual represents warning of specific risks, dangers, or warning of described procedures. Failure to follow the instructions in the text marked with this symbol may result in loss of warranty, damage to property, threat to safety or life of persons performing the operation on the system or persons in the vicinity. Do not proceed without following the instructions marked with such symbols.

### 1.1.5 FURTHER INFORMATION

BlazeCut® is a registered trademark of BlazeCut and is recorded in the Register of Community Trade Marks.

If any of the instructions in this manual are unclear or in case of further questions, contact the BlazeCut Team.

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## WARNING

Please ensure that the safety instructions are fully understood before the equipment is put into service.

Do not modify any part of the BlazeCut components as this may cause serious injury or a failure of the system.

Always wear the appropriate protective equipment and clothing whilst installing or servicing.

## 2 BASIC INFORMATION

This Technical Bulletin has been produced to offer an alternative pressure switch option as an interim measure due to the delay in supply of standard pressure switch models APS001-xx. The following covers T Series, DLP and ILP C Series systems.

As the economy pressure switch does not use a changeover of contacts, the same as the standard APS001 pressure switch the following must be followed.

Economy Pressure Switch APS002 is a mechanical switch with pre-set pressure value (switch point) at 1 bar. When the pressure in the system drops below the switch point, the switch closes the circuit and sends a signal to an external device to perform an operation. This is ideal for signalling, but not for initiating shutdown. If you require to use the economy pressure switch for shutdown of fans, engines etc., an external relay will be required unless connected to a panel which can initiate a shutdown.

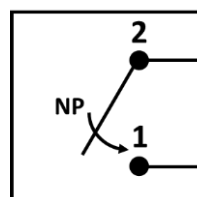
The pressure switch includes moulded 15 cm long wires. APS002 does not support circuit fault monitoring.

**Table 1: Specifications of Economy Pressure Switch**

| Parameter                 | Description                            |
|---------------------------|----------------------------------------|
| Material of body          | Brass, nickel plated steel             |
| Position at atm. pressure | closed                                 |
| Switch point              | 1 bar                                  |
| Maximum pressure          | 30 bar                                 |
| Rated frequency           | 50 Hz                                  |
| Power rating DC           | 36 V                                   |
| Power rating AC           | 240 V                                  |
| Rated current             | 3 A                                    |
| IP rating                 | IP65                                   |
| Electrical wires          | 15 cm length, 2 x 0.75 mm <sup>2</sup> |
| Operation temperature     | from -30 °C up to 80 °C                |
| Thread                    | M10x1 (10 mm with O-ring and filter)   |



*Economy Pressure  
Switch APS002*



*Pressure Switch  
APS002 in open  
position (internal  
pressure higher  
than 1 bar)*

## 3 T SERIES

The Economy Pressure Switch is a nonremovable part of T Series models TxxxES-E which is installed at factory. TxxxES-E models are suitable for fixed as well as for mobile applications. The pressure switch can be used as a universal means of sending signal after a T Series system activation. External devices can be informed via the signal (alarm panel, sounder, beacon etc.).

Due to physical and chemical properties of the extinguishing agent, at very low ambient temperatures, the vapour pressure of the extinguishing agent could be zero and the pressure switch could send a false alarm signalling zero pressure. Due to this reason when the pressure switch is used on the system it is pressurized with nitrogen (N<sub>2</sub>) so the pressure in the system shall not fall to zero.



*Pressure Switch  
models TxxxES-E*

**Table 2: Comparison between pressure switch options**

|                               | Models "S" | Models "S-E" |
|-------------------------------|------------|--------------|
| Indoor use                    | ✓          | ✓            |
| Fixed applications            | ✓          | ✓            |
| Harsh environments            | ✓          | ✓            |
| Outdoor use                   | ✓          | ✓            |
| Mobile/Vibrating applications | ✓          | ✓            |
| SPST wiring setup             | ✓          | ✓            |
| SPDT wiring setup             | ✓          | ✗            |
| Fault Monitoring              | ✓          | ✗            |

## WARNINGS



The pressure switch is factory fitted during manufacturing process and must not be tampered with, disassembled or removed. Any user interference will void warranty.



Be aware of the danger posed by the protected equipment. When working in the vicinity of electrical equipment observe corresponding safety rules and instructions. Working on electrical installations may be performed only by qualified persons.



Install the T Series so the pressure switch is not exposed to aggressive chemical substances (caustic, acids, solvents, corrosive substances etc.) and in direct influence of weather conditions.



Always place the pressure switch in the lower part of the risk area to avoid direct flames and heat. The pressure switch cannot be in direct contact or be in immediate proximity with parts which heat to temperatures of more than 80 °C (176 °F).

## 4 C SERIES DLP – POWDER AND CLEAN AGENTS SYSTEMS

Economy Pressure Switch APS002 is usually delivered not installed, to prevent it from damaging during transportation. All pressure monitoring components are compatible with M10x1 ports. The M10x1 ports are sealed by a Schrader valve, which closes and opens automatically during removal or installation of the components. The same principle of sealing is also used on end-of-line adapters.

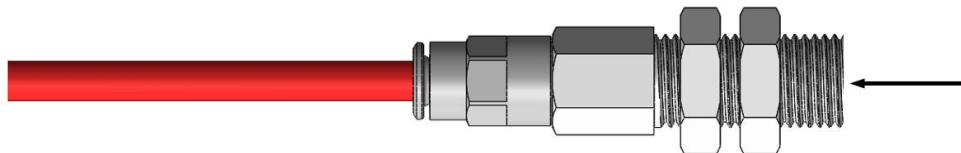
Economy Pressure Switch APS002 is suitable for these ports only:

### Valves 116 and 118

1. End-of-line Adapter AEA006 on a BlazeTube end (Example 1)
2. On all End-of-line Adapters AEA006 on BlazeTube ends (Example 2)

### Valves 126 and 128

1. On all End-of-line Adapters AEA006 on BlazeTube ends (Example 3)



*M10x1 port on the end-of-line adapter*

## WARNING



Never install the Economy Pressure Switch APS002 onto the cylinder valve, as it would activate only after complete agent discharge and pressure decrease in the cylinder.

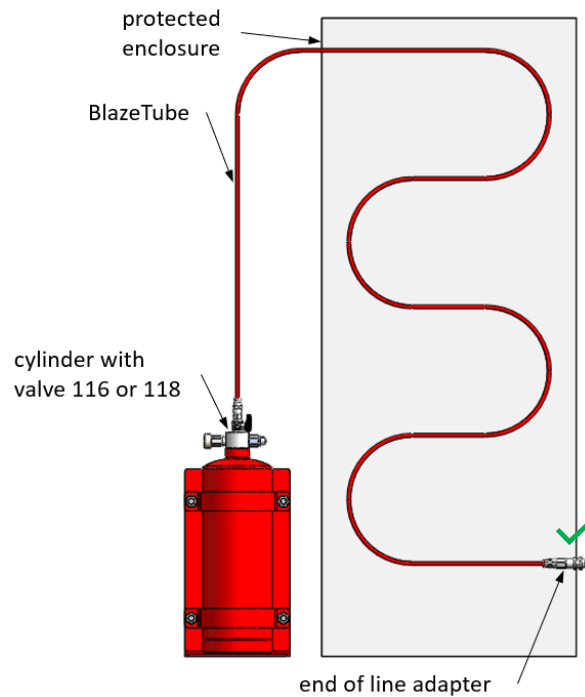
## IMPORTANT!

Depending on the BlazeTube length, the activation time of the Pressure Switch can increase by about 1 second for 10 metres.

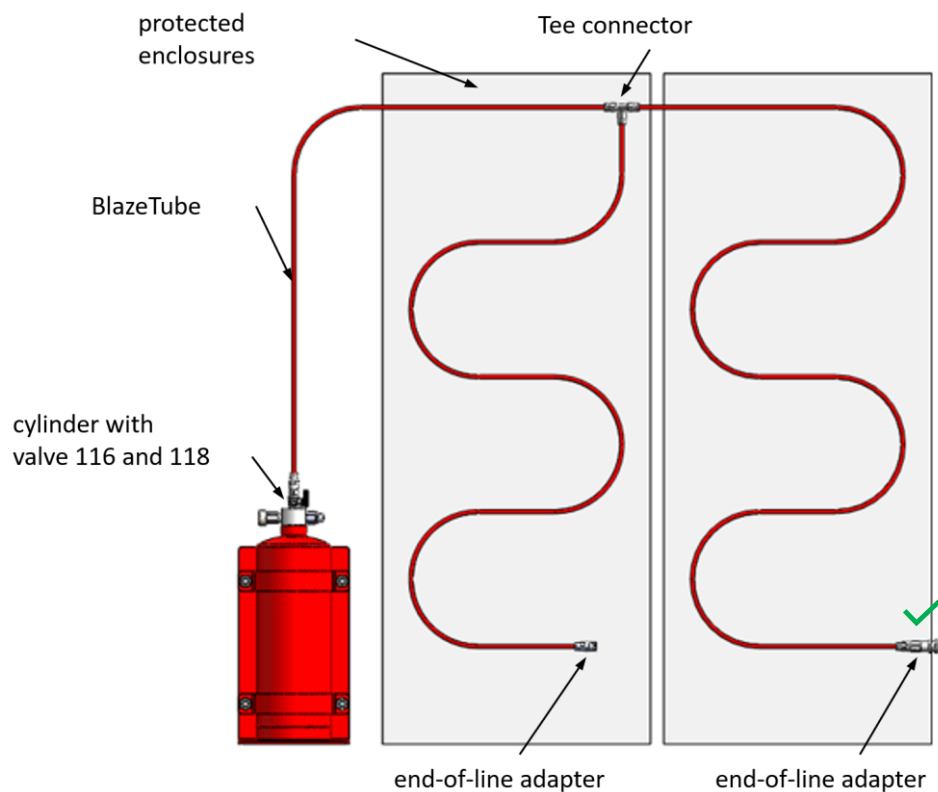
## NOTE

In case of malfunction or disconnection of the electrical components (Economy Pressure Switch APS002, electrical installation) the system remains functional, these components are not necessary for its automatic activation in case of fire.

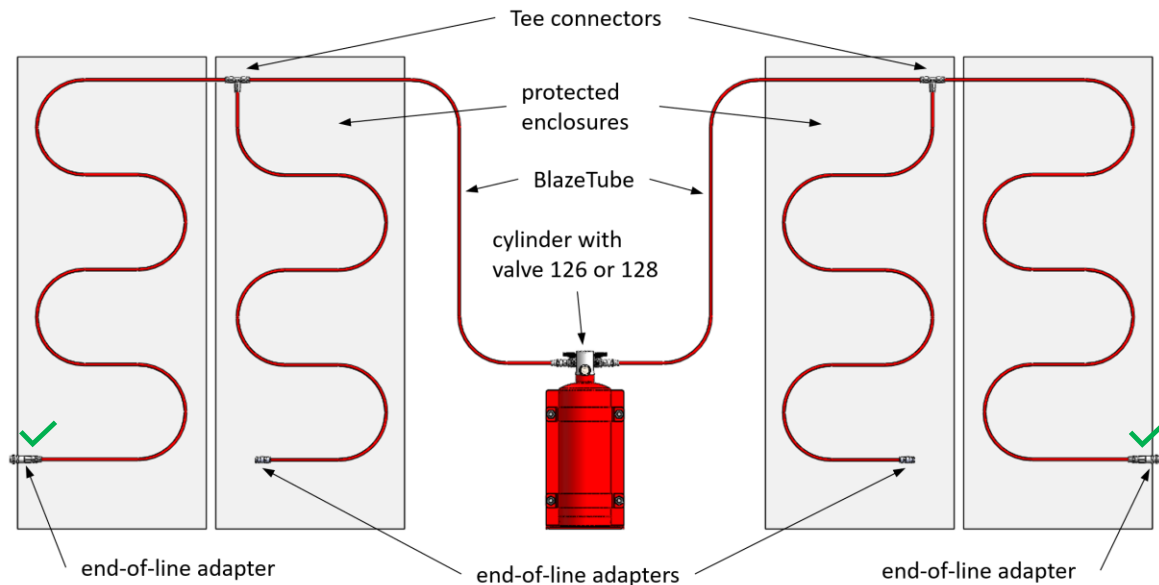
Examples of allowed installations for DLP systems:



*Example 1: one enclosure – system with the valve type 116 or 118  
End-of-line Adapter with an Economy Pressure Switch APS002.*



*Example 2: two enclosures – system with the valve type 116 or 118  
All End-of-line Adapters must be occupied with an Economy Pressure Switch APS002.*



*Example 3: multiple enclosures – system with the valve type 126 or 128 (valves with two outlets)  
All End-of-line Adapters must be occupied with an Economy Pressure Switch APS002.*

## WARNINGS



**Do not use the M10x1 port with the mounted pressure gauge. By removing the pressure gauge from the valve when the system is pressurized a small amount of agent can be released into the port and damage the integrated Schrader valve, causing a pressure leak.**



**Install the pressure switch so that it is not exposed to aggressive chemical substances (caustic, acids, solvents, corrosive substances etc.) and to direct influence of weather conditions.**



**Always place the pressure switch in the lower part of the risk area to avoid direct flames and heat. The pressure switch cannot be in direct contact or be in immediate proximity with parts which heat to temperatures of more than 80 °C (176 °F) e.g., engine block, engine turbocharger, exhaust pipe, heated parts of inductors etc.**



**Be aware of the danger posed by the protected device. When working in the vicinity of electrical equipment observe corresponding safety rules and instructions. Work on electrical installations may be performed only by qualified persons.**

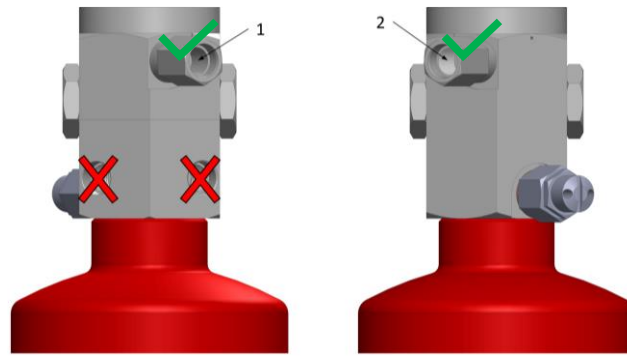
## 5 C SERIES ILP – POWDER, FOAM AND CLEAN AGENTS SYSTEMS

Economy Pressure Switch APS002 is usually delivered not installed, to prevent it from damaging during transportation. All pressure monitoring components are compatible with M10x1 ports. The M10x1 ports are sealed by a Schrader valve, which closes and opens automatically during removal or installation of the components. The same principle of sealing is also used on end-of-line adapters and M10x1 adapter FVABM0210 on the cylinder valve.

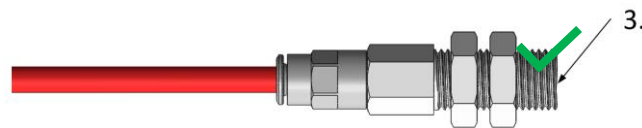
At the time of order, a valve adapter FVABM0210 can be requested to allow for additional M10x1 port for pressure monitoring components.

Economy Pressure Switch APS002 is suitable for these ports only on all 200 series valves:

1. front Valve Adapter FVABM0210 (optional component)
2. back Valve Adapter FVABM0210 (optional component)
3. End-of-line Adapter AEA006 on a BlazeTube



Suitable M10x1 ports on front (left picture) and back (right picture) of a ILP cylinder valve



M10x1 port on the end-of-line adapter

When unscrewing a plug or a component from the M10x1 ports, do it right before installation of the new component, in order to prevent dirt from getting into the outlet. To properly install the components and prevent any malfunctions of the system, screw in the components tightly and check for presence of any leaks.

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## IMPORTANT!

Main pressure gauge must always be installed in the appropriate port on the cylinder valve.

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## WARNING



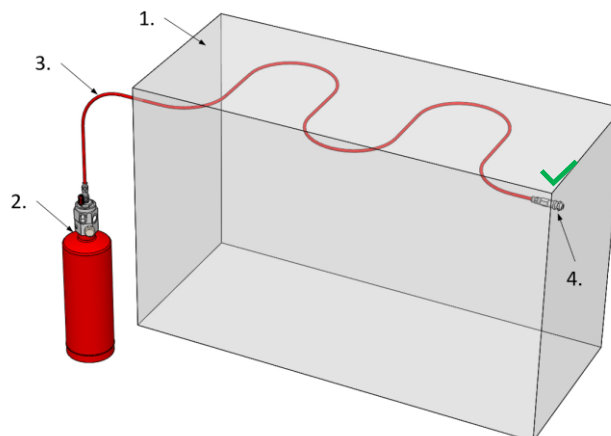
Never install the Economy Pressure Switch APS002 into other ports than listed, as it would activate only after complete agent discharge and pressure decrease in the cylinder.

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## IMPORTANT!

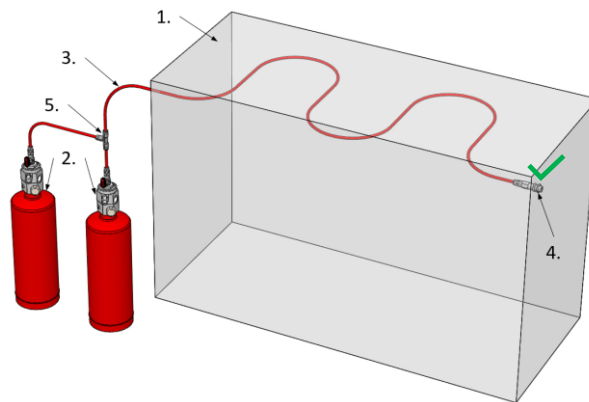
Depending on the BlazeTube length, the activation time of the Pressure Switch can increase by about 1 second for 10 metres.

Examples of allowed installations for ILP systems when Economy Pressure Switch APS002 is required to be installed on a BlazeTube end:



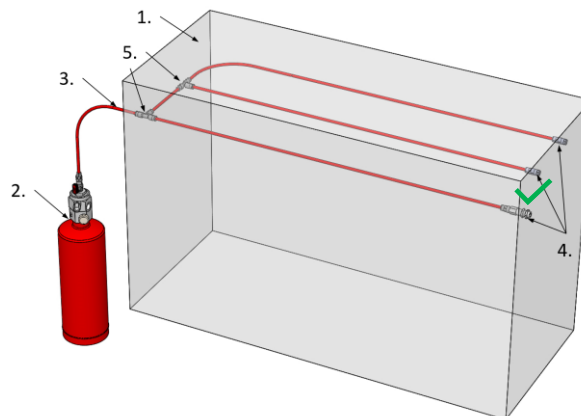
Example 1: Simple installation with one cylinder  
End-of-line Adapter with an Economy Pressure Switch APS002.

1. Protected enclosure
2. Cylinder with the valve
3. BlazeTube detection
4. End-of-line adapter with Economy Pressure Switch APS002



*Example 2: Simple installation of multiple cylinders.  
End-of-line Adapter with an Economy Pressure Switch APS002.*

1. Protected enclosure
2. Cylinder with the valve
3. BlazeTube detection
4. End-of-line adapter with Economy Pressure Switch APS002
5. BlazeTube Tee connector



*Installation with one cylinder, the BlazeTube detection is branched.  
All End-of-line Adapters must be occupied with an Economy Pressure Switch APS002.*

1. Protected enclosure
2. Cylinder with the valve
3. BlazeTube detection
4. 3x End-of-line adapter with Economy Pressure Switch APS002
5. BlazeTube Tee connector

## NOTE

In case of malfunction or disconnection of the electrical components (Economy Pressure Switch APS002, electrical installation) the system remains functional, these components are not necessary for its automatic activation in case of fire.

## WARNINGS



If the system is in operation and the BlazeTube detection under pressure, when mounting and dismantling a pressure monitoring component at the end-of-line device, the ball valve on the cylinder valve must be closed, to avoid a false actuation.



Install the pressure switch so that it is not exposed to aggressive chemical substances (caustic, acids, solvents, corrosive substances etc.) and to direct influence of weather conditions.



Always place the pressure switch in the lower part of the risk area to avoid direct flames and heat. The pressure switch cannot be in direct contact or be in immediate proximity with parts which heat to temperatures of more than 80 °C (176 °F) e.g. engine block, engine turbocharger, exhaust pipe, heated parts of inductors etc.



Be aware of the danger posed by the protected device. When working in the vicinity of electrical equipment observe corresponding safety rules and instructions. Work on electrical installations may be performed only by qualified persons.