



Safety & Environment

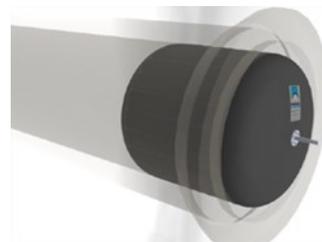


Solutions for Life



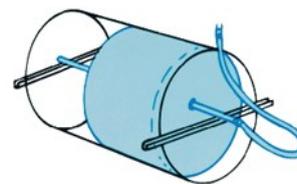
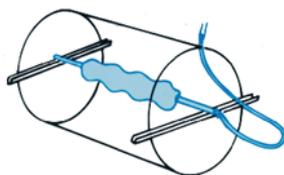
In the interests of environmental protection, Pronal has developed a range of stoppers for the retention of any accidental pollution in case of a loss.

The stopper POLLU-PLUG is permanently installed in lines at site boundaries. Its patented system maintains the stopper in the upper part of the line, and incorporates no component which might obstruct the flow of water. The stopper is connected by a hose to a control cabinet, which is arranged close to the manhole. The stopper can be actuated manually from the cabinet, or by means of a remote electrical control. The stopper can also be actuated by a pH probe or fire alarm.



The system offers numerous advantages, in terms of both installation and operation. Its installation requires no major civil engineering works. In the majority of installations, the provision of a bushing between the cabinet and the line concerned will suffice. The control cabinet can be used, not only for the inflation of the stopper, but also for the remote deflation of the stopper, without the need to enter the line concerned. Stoppers are available for pipes of all diameters, ranging from 100 to 1,000 mm.

This system forms part of risk prevention measures. Article 13 of the Ordinance of 05/08/2002 relating to the prevention of losses in undertakings requires establishments to equip their effluent and rainwater collection networks with stopper systems, in order to allow the retention of any accidental pollution.



Description:

To protect and preserve the environment, the PRONAL's anti-pollution inflatable stopper has the following main advantages:

- Instantaneous sealing
- Permanent installation
- Wear and chemical product (depending of concentrations) resistance
- Possibility to make special shapes

Use:

Protection of industrial sites against accidental pollution by sealing ducts from 1,000 mm to 2,000 mm in diameter.

Accessories:

- A sealed control unit box provides efficient protection in all weather conditions
- Remote control managed by solenoid valves



Inflatable pipe plug OPL/OPLT

OPL/OPLT pipe plugs are used for sealing of sewer, water, hydrocarbons and chemical pipes.

Made of high quality rubber and vulcanized in a autoclave, they are the perfect pipe sealing solution. OPL/OPLT can be used either to stop the pipe flow during maintenance operation or to seal a new installed pipe for air tightness tests. Always concerned by operators ans safety products reliability, OPL/OPLT are designed with the latest technology and best performances materials.

They are available in both blocking or bypass plugs



Avantages

- Covers several diameters
- Robust structure
- Quick setup
- Excellent resistance against backpressure
- Bypass option
- Wide chemical compatibility

Applications

- Test sealing
- Cleaning operation
- Temporary or permanent filling
- Maintenance operations
- leak detection tests

Dimensions

OPL	Usefull mini \varnothing (mm)	Usfull \varnothing max (mm)	Deflated \varnothing (mm)	Length (mm)	Safety coëf	Weight (kg)
OPL 30/60	30	60	25	150	Min 3	0.2
45/80	45	80	43	150	Min 3	0.3
50/100	50	100	35	130	Min 3	0.3
65/125	65	125	63	253	Min 3	0.4
75/150	75	150	70	195	Min 3	0.5
75/150	75	150	70	355	Min 3	0.8
100/200	100	200	86	360	Min 3	1.3
100/200	100	200	90	260	Min 3	0.8
100/150	100	150	80	130	Min 3	0.6
125/200	125	200	110	152	Min 3	0.7
150/250	150	250	145	265	Min 3	2
150/300	150	300	145	475	Min 3	2.6
200/400	200	400	190	565	Min 3	5.5
200/500	200	500	170	730	Min 3	5.5
300/600	300	600	288	720	Min 3	11.9
400/800	400	800	370	1030	Min 3	22
500/1000	500	1000	472	1140	Min 3	32.5
500/1400	500	1400	472	2200	Min 3	55
600/1200	600	1200	566	1400	Min 3	49
600/1500	600	1500	566	2200	Min 3	65
800/1600	800	1600	770	200	Min 3	90
800/2000	800	2000	760	2800	Min 3	125



Pollu-plug Anti-Pollution Stopper was developed in the interest of environmental protection to contain any accidental pollution. Permanently installed in the upper part of pipes thanks to their patented system, they are easily deployable manually or by remote control, such as any phones or fire alarm systems.

Benefits

- Permanent installation without flow disturbances
- Immediate sealing
- Complete security
- Chemical compatibility to most chemical waste
- Rapid installation

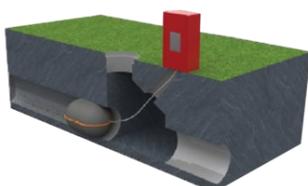
Applications

- Stops toxic or liquid spills in the sewage system
- Blocks water used by firefighters
- Important for environmental security



OPAP	Ømm	Width-Empty mm	Length-Empty mm	Pressure (bar)	Connection
OPAP 150	150	230	550	12	1/4"
OPAP 200	200	300	550	12	1/4"
OPAP 250	250	380	600	12	1/4"
OPAP 300	300	450	700	12	1/4"
OPAP 400	400	600	800	12	1/4"
OPAP 500	500	750	1000	12	1/4"
OPAP 600	600	900	1200	1	1/4"
OPAP 700	700	1050	1400	0.8	3/4"
OPAP 800	800	1200	1600	0.6	3/4"
OPAP 1000	1000	1550	2050	0.4	3/4"

Remote cabinet: Manual or semi-automatic control panel are made following needs. Fed by compressed air or nitrogen bottles





High pressure stopper series "OHP & OPV"

OHP & OPV" stoppers can be used for the closure of lines of all types (concrete, steel, HDPE, stainless steel, etc.). This range of stoppers allows the execution of leak-tightness controls, and the conduct of operational maintenance, both onshore & offshore. These solutions can also be used for the flotation of jackets or pipes. They can also be applied for the execution of weld tests, repairs, or the replacement of valves in pipes.

OHP inflatable stoppers offer numerous advantages, including a wide range of diameters, perfect leak-tightness, ease of insertion in the line concerned, rapid inflation and deployment, high resistance to wear, a minimum safety factor of 3, resistance to a counter-pressure of up to 25 bar, depending upon the application in question, or more, subject to a preliminary design analysis. Stoppers are manufactured from an elastomer-coated fabric, vacuum-vulcanized in an autoclave.



Advantages

- The stopper can fit several pipe diameters
- Complete tightness
- Rapid deployment in the pipe
- Quick inflation and introduction
- Wear and chemical product (depending of concentrations) resistance
- Can resist to 25 bars back pressure and more if preliminary study (OHP range)
- Manufacturing on request

Use

- Sealing :
- Pipes for control, test and maintenance
 - Pipes on off-shore and gas installations
 - On pressure pipes

Accessories

- Flange (from OPV 140)
- Inflation line
- By-pass for piping test
- Handling wire



Extinguishing water tank

Today, the **effective management and conservation of water resources** is a major economic and environmental issue. PRONAL flexible tanks represent an ideal solution for the straightforward provision of a temporary or long-term water storage facility.

Applications for the PRONAL enclosed flexible tank include on-site water storage, the provision of an **extinguishing water reserve**, the **recovery of rainwater**, industrial or agricultural cleaning, the provision of a reserve for drilling water, the supply of ponds or swimming pools, the cleaning of vehicles, **irrigation and sprinkling** of green spaces, etc..

The **flexible reservoir** is manufactured from an elastomer or plastomer material, depending upon the application concerned. It provides a reliable, cost-effective, eco-friendly and durable solution.

Reservoirs are available in capacities ranging from 1m³ to 1000m³, with an option for tailor-made construction.



Open-topped storage tank OPENTANK

Flexible tanks of the "onion" type can be effectively deployed in emergency situations. In comparison with closed flexible tanks, open-topped onion tanks offer the advantages of rapid filling from the top and full interior cleaning. Applications for the PRONAL open-topped **flexible tank** include the storage of **fire extinguishing** water, use as a decantation basin, or as a buffer storage facility for chemical effluents prior to treatment. Lightweight and **flexible**, these **tanks** are easily transported from one site to another.

Open-topped **flexible tanks** range in capacity from 1m³ to 20m³, with an option for tailor-made manufacture.



SMARTSHORE - Shoring of trenches

During the conduct of trenching or excavation works on site, it is essential to ensure the safety of operators. As works of this type involve risks of collapse and burial, Article R4534-24 of the French Code of Labour requires that vertical-walled trenches of depth exceeding 1.30m should be shored or braced.

SMARTSHORE®, a shoring system developed by PRONAL, reinforces the walls of trenches and ensures the complete safety of operations. This new technology replaces the use of conventional shoring, which is cumbersome to handle and install, particularly for trenches of limited depth.

The SMARTSHORE® system involves a twin-walled rubber-coated construction, finished by hot vulcanization, and the inflatable shields are resistant to impacts, abrasion and tearing.

The design of inflatable shields and their accessories allows the system to be installed horizontally or vertically, while guaranteeing the maximum level of safety. In case of landslip, the only use of struts (obligatory) will allow the system to retain earth for several minutes thereby allowing the operator to climb out of the trench in complete safety. For safety reasons, cushions cannot be linked to each other.



Thanks to the low weight of inflatable shields (13kg), the SMARTSHORE® system can be installed in 20 minutes, and requires no lifting gear. Given the low weight and limited footprint of the inflatable shields, this shoring system can be easily transported from one site to another in a light vehicle.



Responsible

&

ECO friendly solutions

Sanitary Pipe Plugs

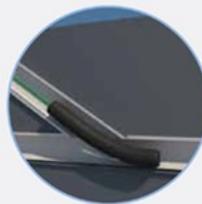
Small Sanitary Dimensions – PLUGY Z AND PLUGSY S

Savatech plugs of smaller diameters PLUGY Z and PLUGSY S can be used in all types of pipelines. Since these plugs are not reinforced with cord, they exhibit excellent stretching and sealing characteristics in pipe diameters from 20 mm up to 305 mm. Plugs are equipped with a car tyre inflation valve and can be inflated with a standard tyre pump. An eyebolt with a chain and a specially designed handle simplify manipulation of the plug.



LONG PLUGS – PLUGY DC

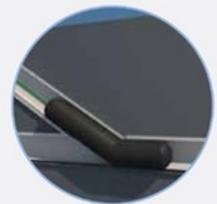
The construction of Savatech multi-size long plugs PLUGY DC ensures efficient sealing of both connection and the main pipe at the same time. Savatech PLUGY DC is equipped with a 100 cm long supply hose.



INSERT THE PLUG IN THE MIDDLE OF A CONNECTION



IN THE FIRST PHASE, THE UPPER PLUG PART IS INFLATED TO PREVENT LIQUID SPILLS



IN THE SECOND PHASE, THE REMAINING PART OF THE PLUG IS INFLATED TO COMPLETELY STOP THE FLOW

GAS PLUGS – PLUGY G AND PLUGSY GM

Savatech multi-size plugs PLUGY G and PLUGSY GM are used for sealing and testing of pipelines and gas pipelines with a restricted inlet area. Their innovative design and flexibility simplify handling and insertion.



Accessory: connection hoses



HIGH-PRESSURE PLUGS – PLUGY HP 6 BAR, 12 BAR AND 30 BAR

Savatech PLUGY HP plugs are specially reinforced plugs suitable for sealing of pipes with extremely high back pressures



LARGER FLOW PLUGS – PLUGSY VP

Savatech multi-size plugs with a larger bypass PLUGSY VP cover the ranges from 100 mm up to 1800 mm. A replaceable rubber sleeve is reinforced with aramid cord and ensures safe and simple handling. Plugs are available in three different designs, depending on the conditions and bypass requirements.



MANHOLE PLUGS – PLUGSY VJ

Savatech PLUGSY VJ for manhole tightness testing are short and light, equipped with three eyebolts for a simple vertical insertion of a plug.





The MAC Pulse Valve series is designed to be a direct drop-in replacement for existing pulse technology. The MAC solution utilizes a long life, bonded-spool design, instead of the traditional diaphragm style. MAC also uses a balanced pilot valve that isolates the solenoid from airline contamination. Available with integral solenoid pilot as well as bleed pilot configurations.

Direct Drop-In

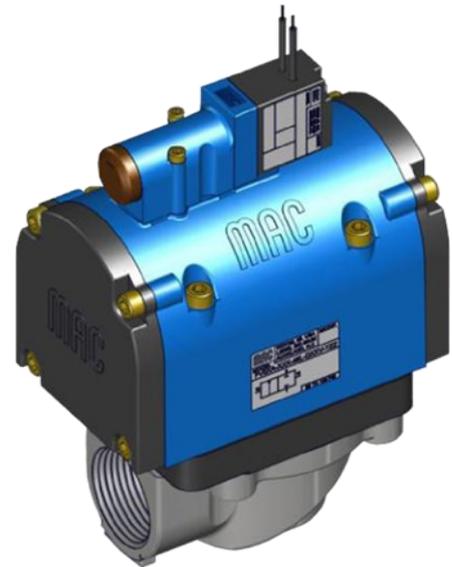
The MAC Pulse Valve is available with various adapter options. These adapter options allow the MAC valve to directly replace the diaphragm technology with our bonded spool technology without disturbing plumbing. The MAC bleed configuration works with existing remotely located solenoids.

Harsh Environment Compatible

An aluminium die-cast body, nitrile seals and an environmentally protected solenoid are standard features. Viton seals are also available for extreme temperature environments and chemical resistance.

Maintenance

Lower cost of ownership through reduction in downtime due to high reliability. When necessary, maintenance is simplified with available spool kits.



MAC Design Advantages

- High Flow / Long Life / Low Leak / Balanced Spool Design
- Drop-in Mounting without disturbing existing piping
- Fast /repeatable responsible times for quick and accurate purges
- Optimized for reliable performance in harsh environmental conditions
- Bonded spool technologies, self-cleaning bore = avoiding diaphragm leakage to reduce compressor energy cost.

Industry specific features

Wide range of seals (Nitrile, Viton and proprietary compounds)
Environmentally sealed for wash down environments
Remote bleed and integral solenoid pilot available

Ask LDA for customer profit reinforcement (CPR) calculation in order to prove your cost reductions!

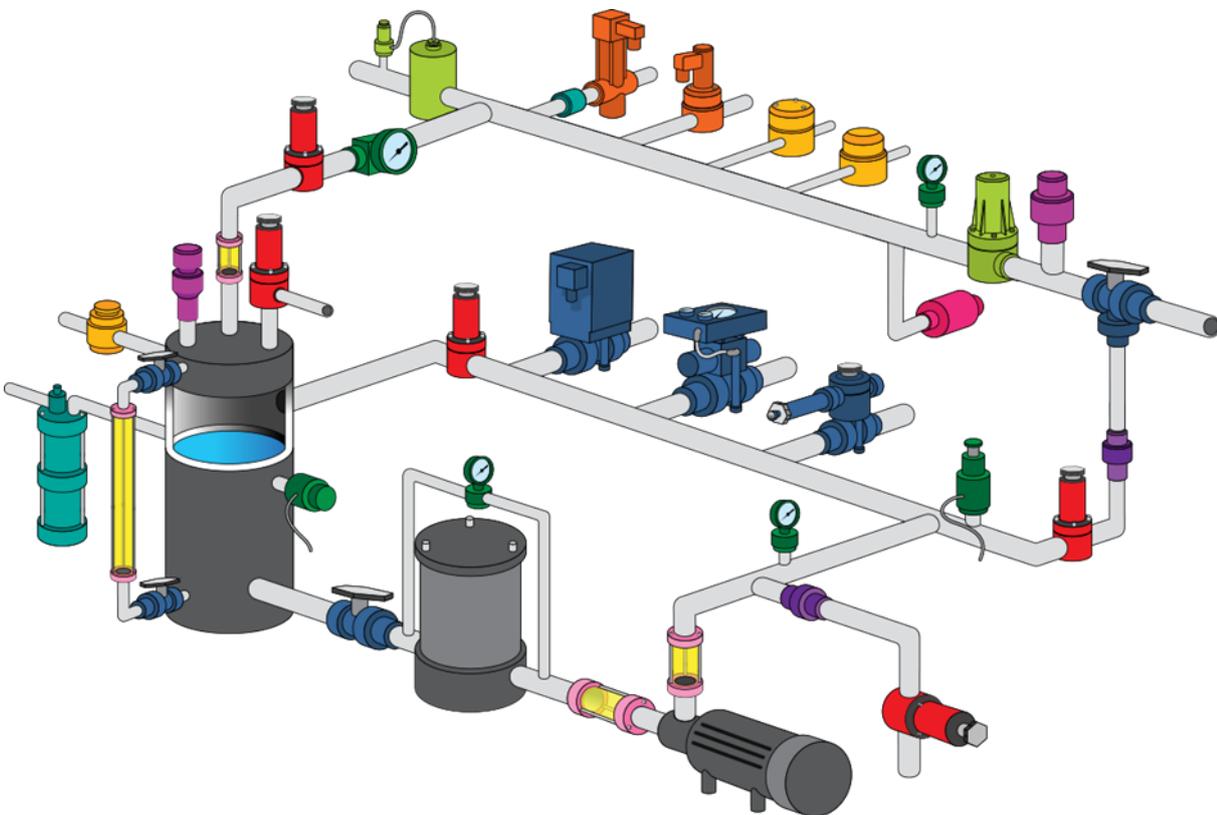




QUALITY ENGINEERED THERMOPLASTIC VALVES + CONTROLS
FOR CHEMICAL, WATER/WASTEWATER, & ULTRA-PURE LIQUIDS

Water/Wastewater Treatment systems rely on Plast-O-Matic products for pump protection and system efficiency, chemical injection, exacting pressure and flow control, air release, degassing and vacuum venting, pulsation dampening, and anti-siphon protection.

Plast-O-Matic Valves are designed for the ultimate performance in purity, corrosion resistance, reliability and longevity...four critical factors in any water/wastewater treatment system.



Body Material: PVC, CPVC, PVDF, PP, PTFE, PPO, FKM, EPDM, BUNA-N, AFLAS®, FFKM, EPOCAP, UV Stabilized Body Materials

Product Range

- Ball Valves, manual, solenoid & servo
- Check valves
- Gauge guards
- Pressure Regulators
- Relief & Backpressure Valves
- Bypass & Anti-Siphon Valves
- Shut-off & Diverter Valves
- Sight Glass & Level indicators
- Solenoid Valves
- Venting Valves & Vacuum Breakers
- Miscellaneous Process Control & Pumps

Product Portfolio Wastewater

- Electric and pneumatic ball valves
- Solenoid valves for chemical injection
- Pressure control/by-pass valves
- Degassing and Air release valves
- Check valves

Innovations

Characterized balls for precise flow control either electrically or pneumatically

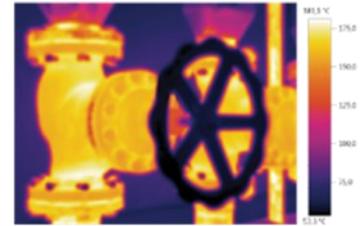
De-gassing and air release valves for optimum process conditions

Teflon bellows solenoid valves rated for one million cycle capability



Key strength

- Easy to install and remove,
- Provides high energy efficiency.
- Custom build = 100% correct fit
 - Moisture resistant



Key benefits

Energy:

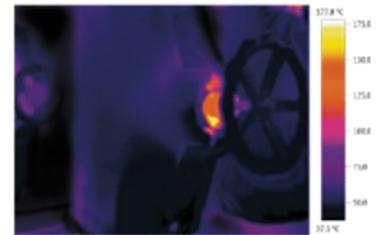
- Improve process control and efficiency
- Save energy: Energy Management 50001

Environment:

- Reduce CO₂ emissions
- Promote environmental protection:
 - ISO 14001 : 2004

Safety:

- Safety and health at work: OHSAS 18001
- Reduction of industrial heat exposures: Directive /654/EEC 30/11/1989



Features:

Dynamic and flexible:

Because of the use of hook and loop fasteners and Velcro, Thermatron insulation is flexible and easy to install and remove. This requires less time to manipulate the insulation, leading to less maintenance costs. Thermatron uses an innovative technology in the field of industrial insulation, making it easy to insulate all kinds of applications. The various types of insulation blankets use the latest in insulation technology, and are suitable for the different temperature ranges.

Save costs while investing in a higher safety!

An investment in Thermatron insulation is typically paid back within 12 months, as a result of the lower energy consumption. Thermatron insulation also reduces the exhaust of CO₂, and creates an extra safety against corrosion, as such prolonging the lifespan of your installation. Thermatron insulation also helps improving the work environment for your staff by lowering the temperature in maintenance rooms of heating installations and in confined spaces. This is not only better for your staff, but also for other equipment that is placed close to your heating equipment.

Materials and the manufacturing process

The materials and coatings used for Thermatron insulation are selected according to the different needs of the industries and applications in which they will be used. As such, Thermatron can guarantee a very effective isolation, adapted to the different work environments. Because of the Velcro and rope fasteners, Thermatron insulation is easily reusable. As required in some industries,





Personalized and customized products

Next to standard products, Thermatron can make specific insulation equipment at the request of the customer. Possible adaptations are a choice between various materials and colors, and personalized identification cards. The identification cards can contain product references, customer contact information, production dates, and many other options such as material references.

Technical features:

E-Glass fiber glass fabric.

Low thermal conductivity because of the E-Glass insulation blankets, DIN53811, **filament diameter 7-13 microns**.

Para-Amid sewing threads with stainless steel load (**38% Twaron, 62% Steel: 1.4404**).

High temperature, fire retardant Velcro.

Glass fabric **E-Glass strings** for easy assembly and installation adjustments.

Technical coating for carious temperature ranges and working environments.

Sound absorbing materials and completely **asbestos free**. According to **REACH** regulations **DIN4102**.

Applications	
Heat insulation Cold insulation Sound insulation	
Temperature ranges	
Basic range: Medium range: Superior range: Extra high range:	-50°C to 150°C -50°C to 250°C -50°C to 300°C -50°C to 550°C
Types of insulation jackets	
<ul style="list-style-type: none"> • 2 and 3-way valves <ul style="list-style-type: none"> • T-pipes • Short and long elbows • Flanges and matting <ul style="list-style-type: none"> • Strainers Y • Check valves • Condensat purges • Centrifugal pumps • Expansion joints 	<ul style="list-style-type: none"> • Flow meters <ul style="list-style-type: none"> • Pipes • Collectors <ul style="list-style-type: none"> • Tanks • Steam and oil boilers • Hand and man holes <ul style="list-style-type: none"> • Heat exchangers • Turbo and exhaust systems • Tailor-made manufacturing





Responsible
&
Eco friendly solutions

Free fall fire extinguishing valves

**LANDON
KINGSWAY**
SAFETY, CONTROL & ENERGY MANAGEMENT

The Landon Kingsway range of free-fall fire valves provide a compact, leak-proof positive action mechanism that can be installed in either horizontal or vertical pipe runs on oil or any non-aggressive media.

The free-fall linkage allows the weight to start to fall before it is required to move the valve lever. This makes sure that the weight achieves sufficient momentum.

Screw Type Fire Valve Sets

Technical Specification

- Material Cast Iron, painted red.
- Maximum Pressure 14 Bar (200psi)
- Standard Cable 9m
- Fusible Link 71°C as standard
- Maintenance Reqd. test & lubricate 3 times/year
- Valve Rotation 90° (¼ turn)
- Lubricant 4",5",6" valves: Type 44 under 4" valves: Type 90
- Flange Spec BS4504, PN16
- Screwed Spec BSP parallel
- Weights Available 2.25, 4.5, 6.8kg (5, 10, 15lb)



Free Fall Fire Valve Accessories

Fusible Links

Available in: 71°C - 92°C - 104°C - 127°C - 143°C - 180°C



Fire Valve Parts

Replacement Kit containing our most popular components.



Manual Quick Release Mechanisms

The Manual Quick Release Mechanism is designed for use with our free-fall fire valves. The steel cable from the valve is looped around the pulley and is released if the button is pressed allowing the valve arm to fall.





Responsible

&

Eco friendly solutions

Detect-A-Fire - Heat & Fire detectors



The World Standard in Mechanical Heat Detectors

DETECT-A-FIRE ® detector is the heart of many fire protection systems...and has been for over 65 years as the first Rate-Compensated detector on the market.



From gas stations to paint spray booths, from range hoods to large power generation systems, from engine compartments to schools, factories and offices, the D-A-F® detector is on guard, controlling the release of extinguishants such as clean agents, CO2, water or dry chemicals.

They also can be used as an ALARM device to sense overhear or fire and alert personnel.

Rate compensation provides a unique advantage of activation at a pre-determined danger point, whether it is a slow fire or a fast fire.

The **D-A-F**® detector is the first such device with Rate Compensation, meaning it can reliably react to a slow fire or a fast fire – alarming at a precisely pre-determined danger point. Thousands of these detectors are in use controlling the release of extinguishants such as clean agents, CO2 water or dry chemicals. In some systems, the **D-A-F**® detector is used as an ALARM device to sense overhear or fire and alert personnel. You'll find Fenwal **D-A-F**® detectors at work in a wide range of services from your local Gas Station to Offshore Oil & Gas Platforms, from Off-Road Heavy Equipment to Chemical Plants, from Engine Compartments to Commercial, Industrial and Public Facilities, from Range Hoods to Paint Spray Booths, from Engine Compartments to Marine Services. Our engineers can assist you with the know-how to select the best **D-A-F**® detector for your needs, or to upgrade existing installations.



Features

- Hermetically Sealed
- Tamper Proof
- Pre-set Temperatures
- Shock and Vibration Resistant

Technical specification

- Horizontal - Six Fixed Settings from 140 to 325°F
- Vertical Mount - 12 Fixed Settings from 140 to 725°F
- Single Pole Single Throw (SPST)
- Open or Close on Temperature Rise

Listing & Approvals

UL / cUL / FM approved/ Atex

Special executions

Teflon protection sleeve for aggressive environments





Pulse width modulation (PWM) is a technique in which a series of digital pulses is used to control an analog circuit. The length and frequency of these pulses determines the total power delivered to the circuit. PWM signals are most commonly used to control solenoid valves and have many other applications ranging from controlling motors or pumps to adjusting the brightness of an LED.



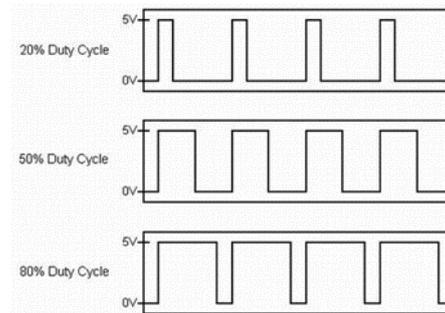
ESH2DC-B75

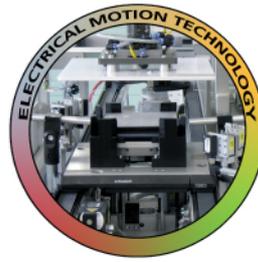


ESH2DC-C75

Specifications

- For valves from 1W till 40W
- Signal input: 20V - 25V DC
- Signal output: 24V DC
- Up till 80% lower power consumption
- Up till 50% lower coil temperature
- Increased reliability: 40% longer lifecycle of the valve





We look forward to your application.

LDA Belgium

Hoge Buizen 53
1980 Eppegem
Belgium

Tel. +32 (0)2-266 13 13

Mail: LDA@LDA.be

www.LDA.be