

# FiWaGuard Products for Small Enclosure Fire Protection Systems based on the FiWaGuard-Sensortube



IT'S  
**YOUR** SYSTEM  
OPTIMIZED WITH  
**OUR** COMPONENTS

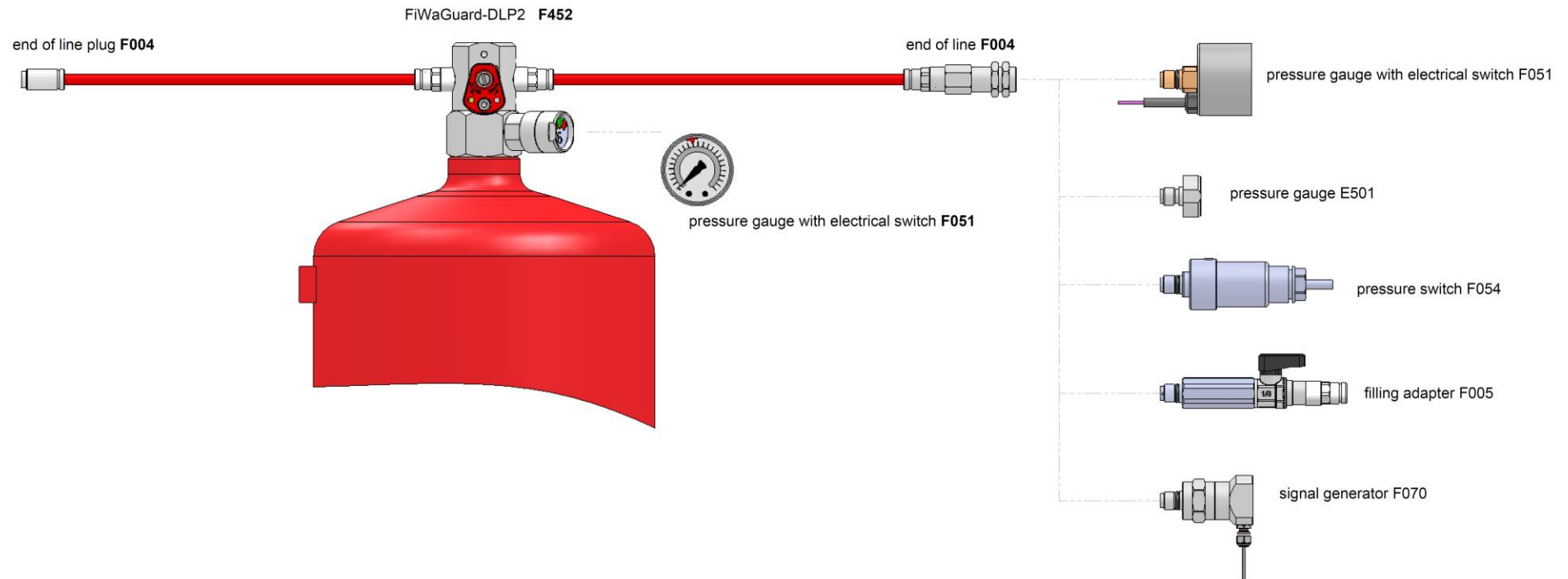
**FiWaRec® Product Catalogue  
for FiWaGuard® Components**



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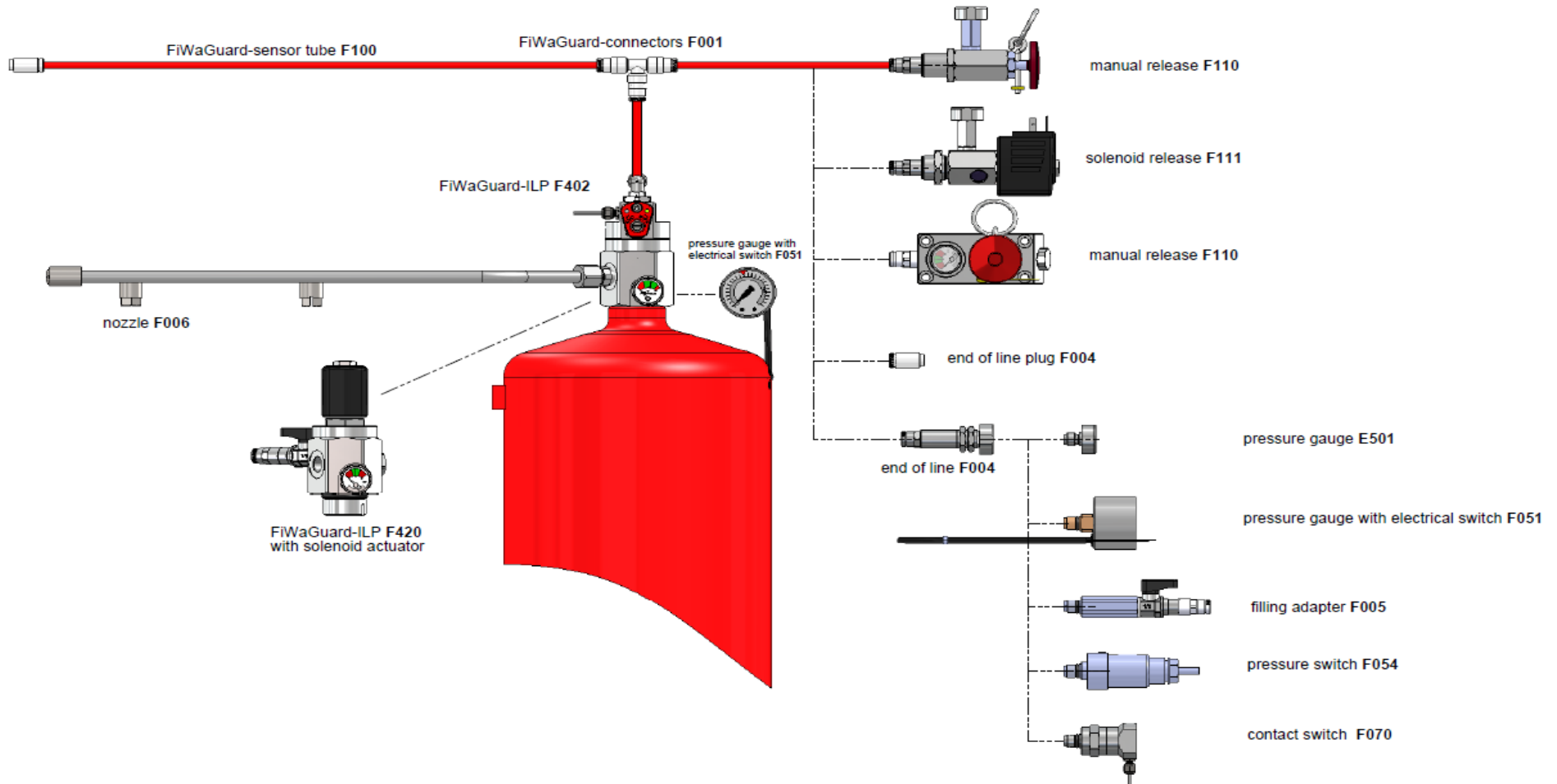
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**Overview:**  
**FiWaRec® Products for Direct Low Pressure Systems (DLP)**



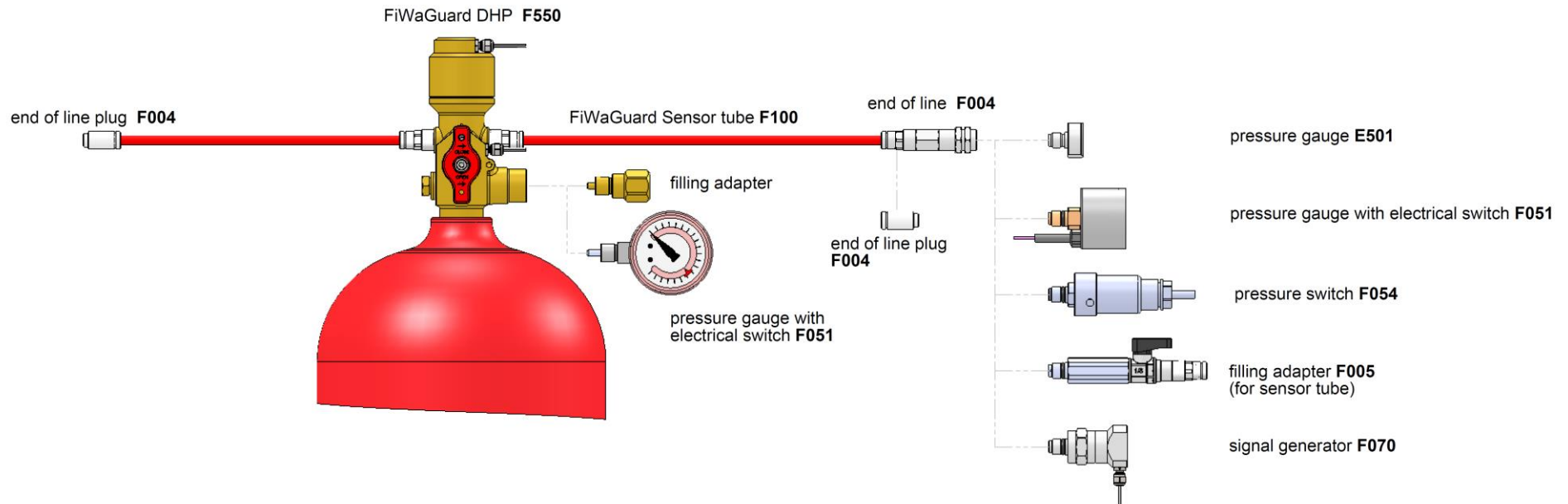
# Overview:

## FiWaRec® Products for Indirect Low Pressure Systems (ILP)



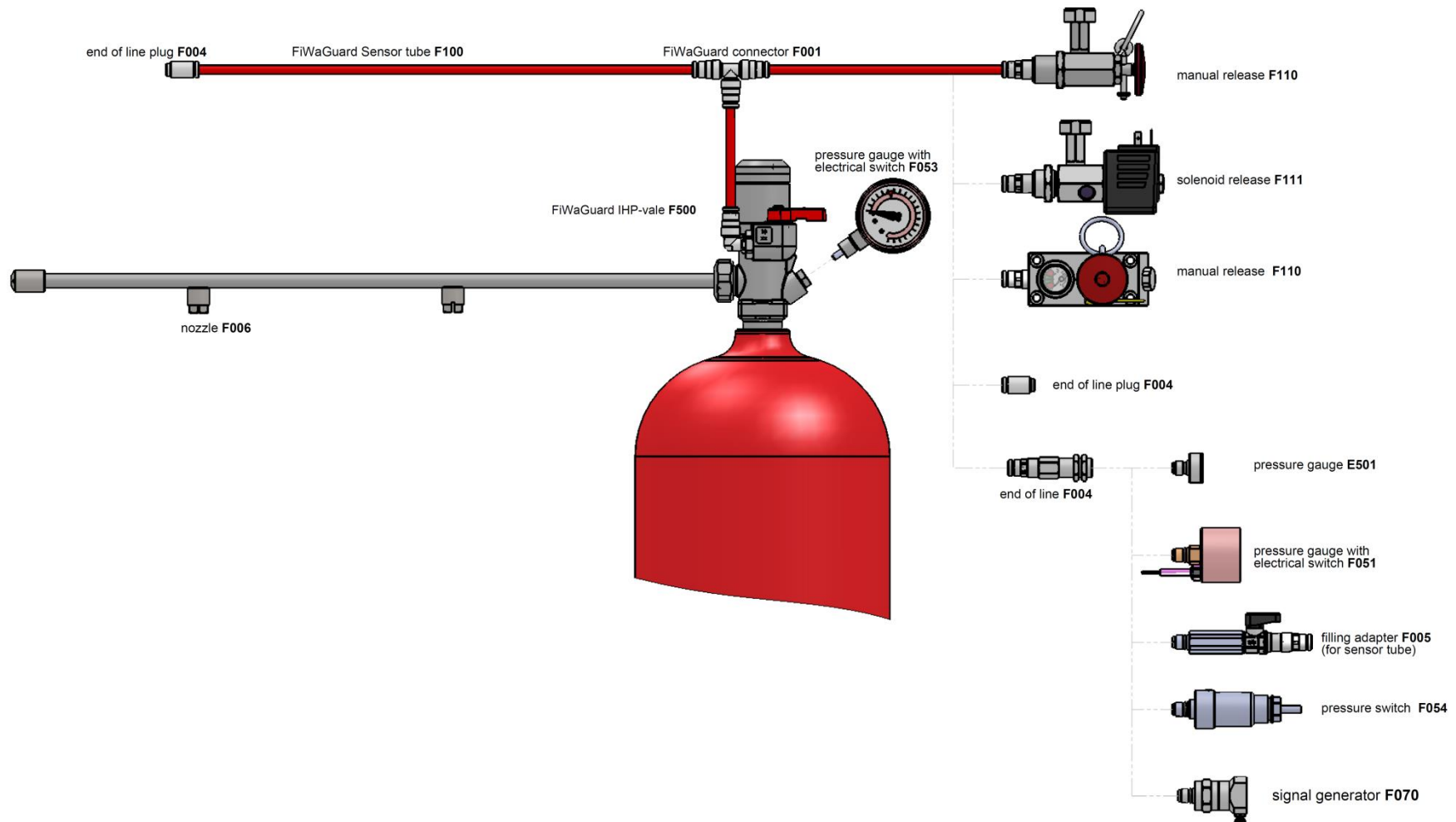
## Overview:

### FiWaRec® Products for Direct High Pressure Systems (DHP)

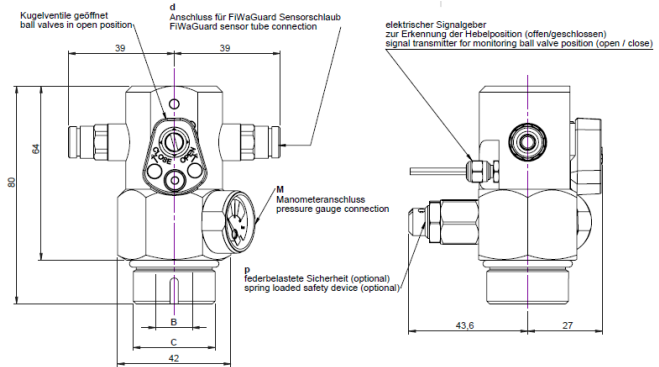


# Overview:

## FiWaRec® Products for Indirect High Pressure Systems (IHP)



**DLP Cylinder Valves (Type F452)**



- Tube Connections for outer  $\varnothing$ 6mm or  $\varnothing$ 8mm available
- Integrated Ball Valve
- Integrated Electrical Position Control of the Ball Valve: Open/Closed
- Approval: TPED (2010/35/EU)
- different Variants upon request



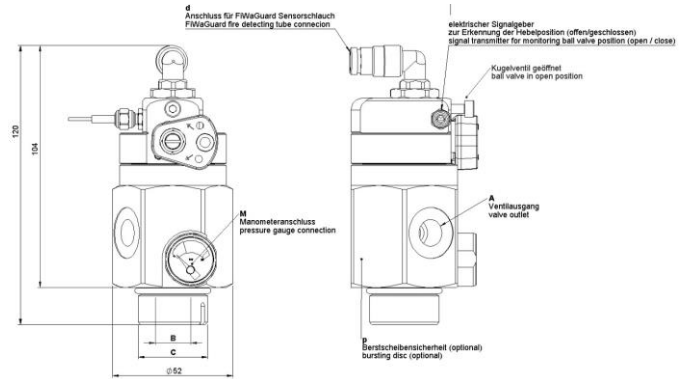
Extinguishing Agents	N2, HFC227ea, FK5-1-12, powder, Liquid Agents, AFFF,...
Pressure Gauge Connection <b>M</b>	M10x1mm (with Non-Return Valve)
Cylinder Thread <b>C</b>	M30x1,5mm
Dip Tube Thread <b>B</b>	M16x1,5mm
Connection for Sensor Tube <b>d</b>	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer $\varnothing$ 6mm or $\varnothing$ 8mm
Temperature Range	-20° C up to +65° C
Working Pressure	23bar at 15°C (max. 28bar at Tmax) , valid Regulations have to be considered - see hints in the FiWaGuard® manuals
Material of Valve Body	Brass, Nickel-Plated

**Basic Variants (others on request)**

Article code	With Integrated Electrical Position Control	Safety Device	For Fire Detection Tube
F4520000		/	$\varnothing$ 6mm
F4520001	X		
F4520002		Spring-Loaded Safety Device 30bar	
F4520003	X		$\varnothing$ 8mm
F4520012		/	
F4520013	X		
F4520014		Spring-Loaded Safety Device 30bar	
F4520016	X		



## ILP Cylinder Valves (Type F402)



- High Flow Capacity
- no Pressure Loss across the Sensor Tube during Discharge
- Integrated Ball Valve
- Integrated Electrical Position Control of the Ball Valve: Open/Closed
- Approval: TPED (2010/35/EU)
- different Variants upon request



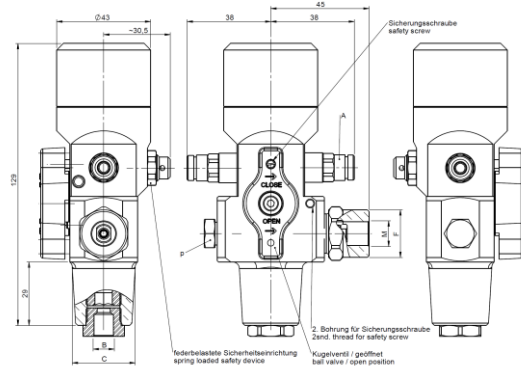
Extinguishing Agents	N2, HFC227ea, FK5-1-12, powder, Liquid Agents, AFFF,...
Pressure Gauge Connection M	M10x1mm (with Non-Return Valve)
Cylinder Thread C	M30x1,5mm
Valve Outlet A	G1/4"
Filling Connection	Filling via Sensor Tube Connection d
Dip Tube Thread B	M16x1,5mm
Connection for Sensor Tube d	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer Ø6mm
Seat Diameter	Ø8mm (DN8)
Temperature Range	-20°C up to +65°C
Working Pressure	23bar at 15°C (max. 28bar at Tmax) , valid Regulations have to be considered - see hints in the FiWaGuard® manuals
Material of Valve Body	Brass, Nickel-Plated

### Basic Variants (others on request)

Article code	With Integrated Electrical Position Control	Safety Device	Valve Outlet(s)
F4020000		/	1x G1/4"
F4020001	X	Burst Disc Safety Device 30bar	
F4020008			
F4020009	X	/	2x G1/4"
F4020028			
F4020029	X		

➔ ILP Valves are available with Integrated Solenoid Actuator, too. (Article Code F420)

**DHP Cylinder Valves (Type F550/551)**



- High Flow Capacity of approx. 1,1kg of CO<sup>2</sup>/min (with Tube Length of 5m)
- Integrated Ball Valve
- Integrated Electrical Position Control of the Ball Valve: Open/Closed
  - Also integrated Release Control (Pressure Switch)
- Approval: TPED (2010/35/EU)
- different Variants upon request



	Product Range F550 (CO <sup>2</sup> , Inert Gases)	Product Range F551 (Clean Agents)
Cylinder Thread <b>C</b>	25E – EN ISO11363-1	
Filling Connection <b>F</b>	W21,8x1/14"	
Pressure Gauge Connection <b>M</b>	M12x1mm	
Dip Tube Thread <b>B</b>	M16x1,5mm, M16x1mm or on request	
Connection for Sensor Tube <b>d</b>	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer Ø6mm	
Seat Diameter	Ø4mm (DN4)	
Safety Burst Disc Device <b>p</b>	Burst Pressure must be calculated in accordance to respective valid Regulations	
Sensor Tube Pressure (Low Pressure)	18bar (+/-1) @ Cylinder Pressure 60bar	
Safety Device (for Low Pressure)	30bar	
Temperature Range	-20° C up to +65° C	
Operating Pressure	max. 250bar valid Regulations have to be considered	max. 200 bar valid Regulations have to be considered
Extinguishing Agents <sup>1</sup>	CO <sub>2</sub> , Inert Gases	Chemical Extinguishing Agents (Clean Agents)
Material of Valve Body	Brass	

**Basic Variants (others on request)**

Article code	With Integrated Electrical Position Control	Burst Disc Safety Device Rating
F5500006	X	190bar
F5500005		250bar
F5500000		190bar
F5500001		250bar

<sup>1</sup> Gasket materials must be compatible with extinguishing agent

## DHP Valves with pressure cylinder (Type F162)

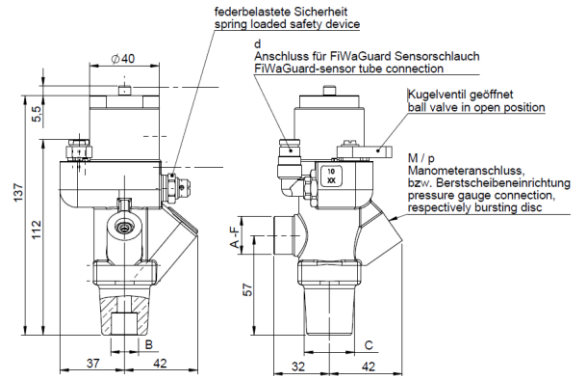


- compact size
  - cylinder volume 0,74l (others available on request)
- integrated ball valve
- available options:
  - reduced flow rate
  - integrated position control of the ball valve
- applicable:
  - for small extinguishing systems
  - as pressure buffer (reduced flow rate)
  - to fill low pressure systems
- approval: TPED 2010/35/EU

π

cylinder thread	25E – EN ISO11363-1
filling connection	W21,8x1/14"
connection pressure gauge	M12x1mm
dip tube thread	M16x1,5mm, M16x1mm or on request
connection detecting tube	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer Ø6mm
seat diameter	Ø4mm (DN4)
burst disc safety device	burst pressure must be calculated in accordance with respective valid regulations
outlet pressure	18bar (+/-1) @ Cylinder Pressure 60bar
spring-loaded safety device	30 bar
temperature range	-20°C up to +65°C
operating pressure	max. 250 bar respective valid regulations have to be considered
extinguishing agents <sup>1</sup>	CO <sub>2</sub> , inert gases, chemical extinguishing agents
material valve body	brass

## IHP Cylinder Valves (Type F500/501/502)



- Filling Procedure– Easy and Safe - via the Valve Outlet
- High Flow Capacity
- Integrated Ball Valve
- Integrated Electrical Position Control of the Ball Valve: Open/Closed
  - Also integrated Release Control (Pressure Switch)
- Integrated Filling Function for the Sensor Tube
- Approval: TPED (2010/35/EU)
- different Variants upon request



	Product Range F500 (CO <sup>2</sup> )	Product Range F501 (Inert Gases)	Product Range F502 (Clean Agents)
Extinguishing Agents Filling Pressure PW / Filling Ratio for F500	CO <sub>2</sub> Max. Filling Ratio: 0,75kg/L	Inert Gases (N <sub>2</sub> , Argon, Inergen...) with Filling Pressure of 200 bar at +15°C	Chemical Extinguishing Agents (HFC227ea, FK5-1-12) with a Filling Pressure of 50bar at +15°C
Pressure Gauge Connection <b>M</b>	/	M12x1mm	
Safety Burst Disc Device <b>p</b>	190bar, 250bar	270bar or upon request	95bar or upon request
Cylinder Thread <b>C</b>	25E – EN ISO11363-1		
Valve Outlet <b>A</b>	W21,8x1/14"		
Filling Connection <b>F</b>	Filling: via the Valve Outlet A		
Dip Tube Thread <b>B</b>	M16x1,5mm, M16x1mm or on request		
Connection for Sensor Tube <b>d</b>	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer Ø6mm		
Seat Diameter	Ø8mm (DN8)		
Sensor Tube Pressure (Low Pressure)	18bar (+/-1) @ Cylinder Pressure 60bar		
Safety Device (for Low Pressure)	30bar		
Temperature Range	-20° C up to +65° C		
Operating Pressure	max. 250bar - valid Regulations have to be considered		
Material of Valve Body	Brass		

### Basic Variants (others on request)

Article code	With Integrated Electrical Position Control	Burst Disc Safety Device Rating
F5000000	X	250bar
F5000001		190bar
F5000005		250bar
F5000013		190bar

**Manual Actuators (Type F110)**

→ Only applicable for Indirect Systems (ILP or IHP)

Manual Actuator



Multi-Actuator



- Easy and Secure mounting
- to Trigger all Indirect FiWaGuard® Valves
  - with Pressure Gauge

	<b>Product Range F110</b>
Operating Pressure	23bar at 15°C (max. 28bar at Tmax) , valid Regulations have to be considered - see hints in the FiWaGuard® manuals
Temperature Range	-20°C up to +65°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO2, HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Material of Valve Body	Brass, Nickel-Plated
Connection for Sensor Tube	FiWaGuard® – Plug-In Connector for FiWaGuard® – Fire Detecting Tubes with outer Ø6mm (or Ø8mm on request)

**Solenoid Actuators (Type F111)**

→ Only applicable for Indirect Systems (ILP or IHP)



- Easy and Secure mounting - by using nut M20x1, 5
- to Trigger all Indirect FiWaGuard® Valves
- with Pressure Gauge

	<b>product range F111</b>
Operating Pressure	23bar at 15°C (max. 28bar at Tmax) , valid Regulations have to be considered - see hints in the FiWaGuard® manuals
Temperature Range	-20°C up to +65°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO2, HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Material of Valve Body	Brass, Nickel-Plated
Voltage	24 VDC (±10%) or 12 VDC (±10%)
Power Consumption	12 WATT
Duty Cycle	100% on-duration
Protection Class	IP65, with cable plug
Electrical Connection	DIN EN 175301-803, Type A (previously DIN 43650A)

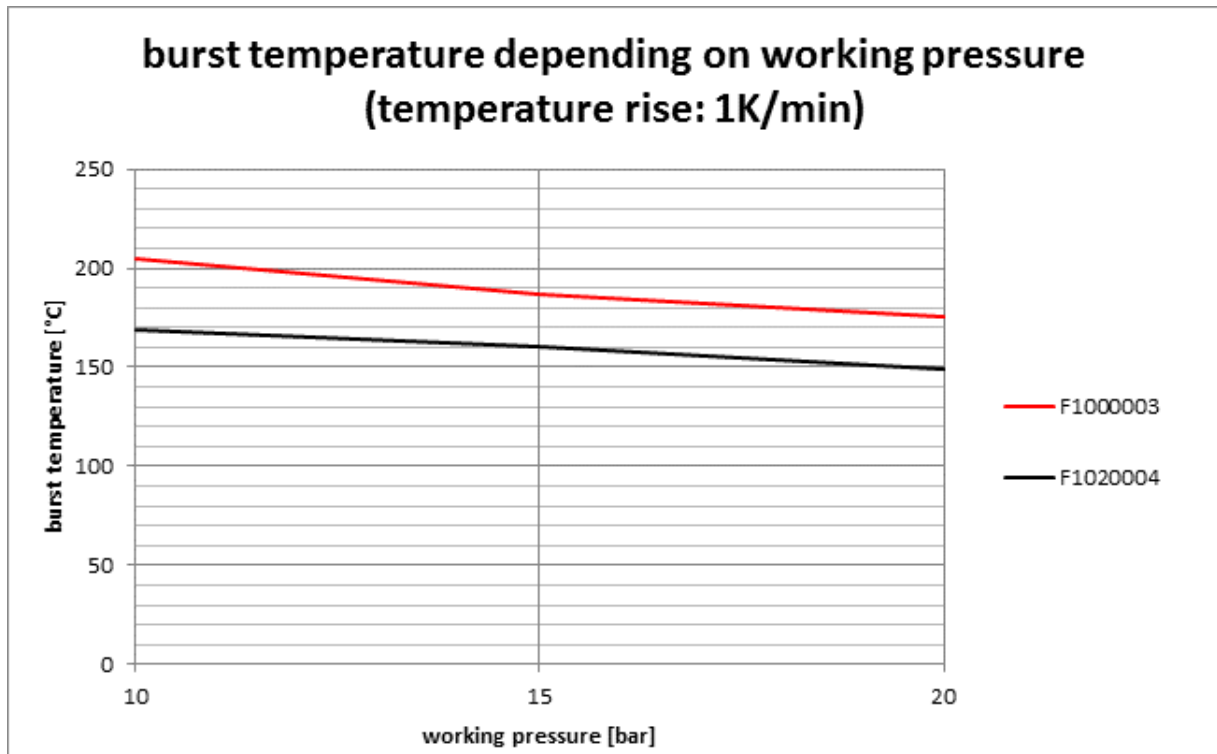
**FiWaGuard-Sensortubes (Type F102/100)**



- enables linear Monitoring and Detection
- flexible Installation in the Hazard Area
- suitable for all FiWaGuard®-Plug-In-Connectors → Quick and Easy Installation
- low Susceptibility / high Reliability
- meets the Requirements of ISO16750-3:2007 for Road Vehicles in conjunction with the FiWaGuard®-Plug-In-Connectors
- Approval: UL-recognized

	<b>F100 - Standard</b>	<b>F102 - HR-Quality</b>
Color	red (RAL3000)	Multi-Layer Tube Black
Operating Temperature	Optimal temperature for long-term use is -40°C to +80°C (higher Temperatures can lead to a Reduction in Service Life) / Steady Load to max. +80°C has been tested. The lowest Operating Temperature is stipulated at minus 40°C.	
UV	/	UV-stabilized
Life Time	Best of our Knowledge and Experience we can contemplate that the Life Time of minimum 8 years can be expected considering Normal Environmental Conditions without any harsh Influences and without contact of aggressive Media	
Dimensions	outer Ø6mm	outer Ø6mm / outer Ø8mm
Tube Length	100m (per roll)	
Material	modified Polyamide (PA)	
Melting Point	approx. +220 degrees Celsius when heating up with 10 K/minute	
Operating Pressure	recommended between 11bar and 23bar within the whole Temperature Range. optimal Filling Pressure: 18bar, depending on Existing Safety Devices	
Burst Pressure	approx. 120 bar @ 20°C (without Flame Impingement)	
Bursting Temperature	Depending on System Pressure and Temperature Rise in K/min (see following page)	
Product approval	UL-approved	UL-approved and tested for long-term use from LPCB in UK

**FiWaGuard-Sensortubes (Type F102/100) – follow up**

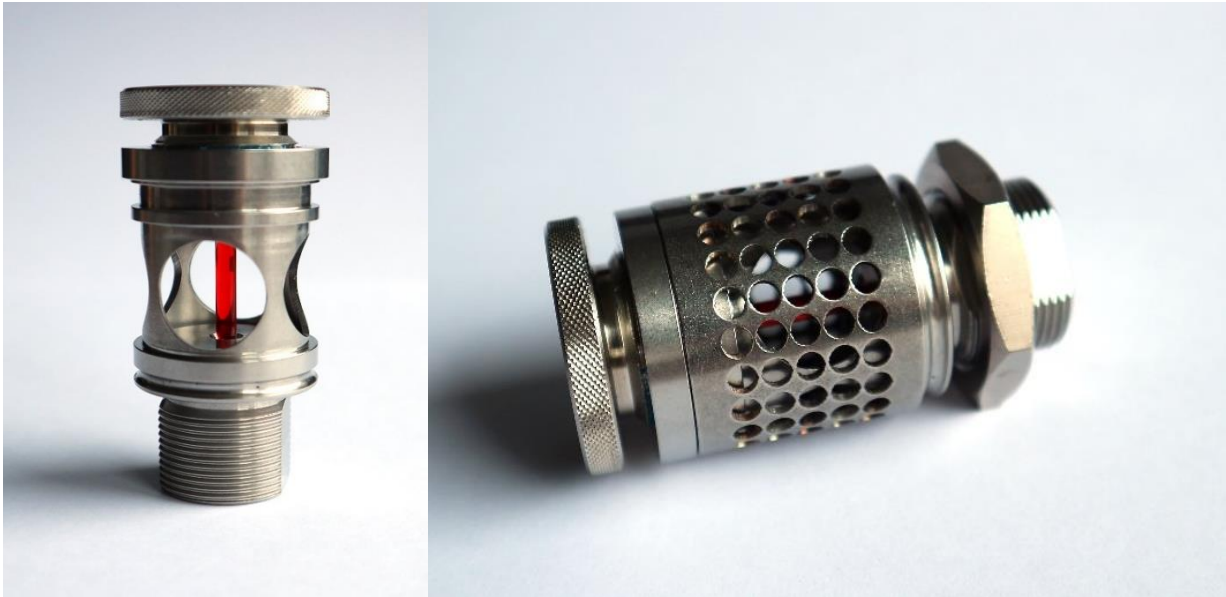


- **F1000003** – Standard Sensortube, red (Single Layer)
  - Normal Chemical Resistance and Water Absorption
  
- **F1020004** – High Quality Sensortube, black (Multi-Layer)
  - Better Chemical Resistance, no risk for Corrosion in contact with Zinc
    - Very good Resistance against UV Radiation
  - Higher Durability and Reliability
  - Very low Absorption of Water (less than 1%)
    - No changes in Mechanical Characteristics
  - Is tested for Long-Term use and Temperature Detection from LPCB in UK





**Glass Bulb Actuation Device (Type F114)**

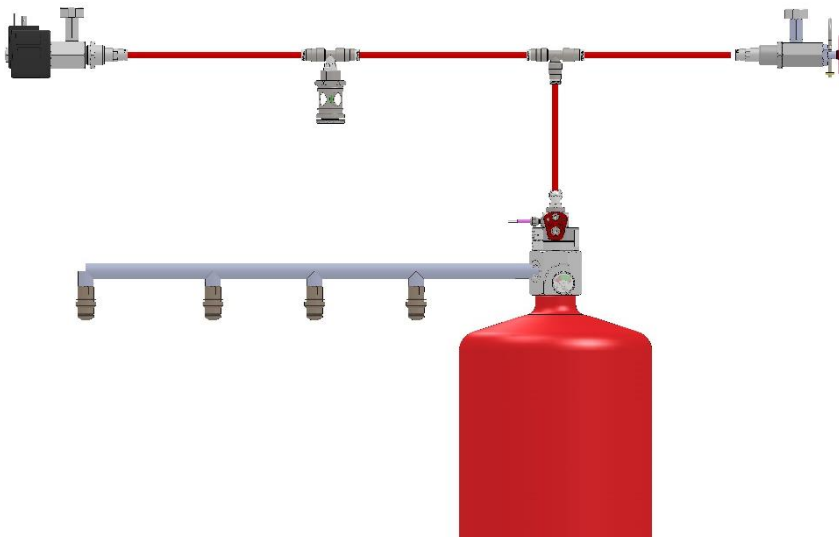


- Made of Stainless Steel
- With G1/8" Connection (female) and Fixing Nut (M20x1mm)

**Glass bulb properties**

- Response Class – “fast”
- Response Time Index (RTI) - 33(ms)<sup>1/2</sup> / 59(fts)<sup>1/2</sup>
- Available Activation Temperature Classes
  - 93°C – green
  - 79°C – yellow
  - 68°C – red
  - (other Temperatures can be offered on request)
- Special Variant for Heavy-Duty use available with additional Protection Cage (Stainless Steel)

**Example for Installation in Combination with the FiWaGuard® Sensortube and ILP Valve**



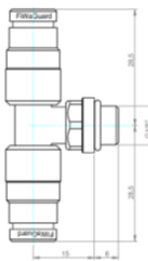
**FiWaGuard-Plug-In Connectors (Type F001)**



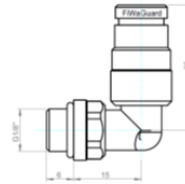
- meets the Requirements of ISO16750-3:2007 for Road Vehicles in conjunction with the FiWaGuard®-Sensor Tube
- meets the highest Tightness Requirements
- Easy and Quick Installation of the FiWaGuard®-Sensor Tube
- Quick and Easy Disassembly of the FiWaGuard®-Sensor Tube by using the FiWaGuard® Disassembling Tool or Multitool
- Nickel-plated Surface
- different Versions available (see below)



F0010002  
Ø6 – G1/8"



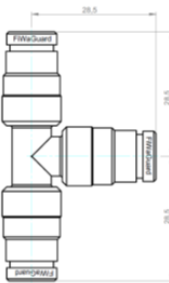
F0010004  
Ø6 – Ø6 – G1/8"



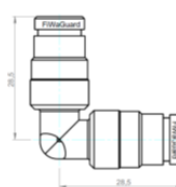
F0010003  
Ø6 – G1/8"



F0010005  
Ø6 – Ø6

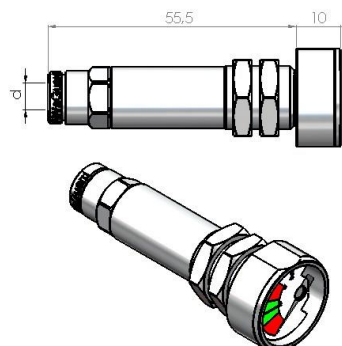


F0010007  
Ø6 – Ø6 – Ø6



F0010006  
Ø6 – Ø6

**FiWaGuard-End-of-Line Adaptors (Type F004)**



➔ also available without Gauge or as End-of-Line Plug

Operating Pressure	max. 28bar
Temperature Range	-20°C up to +65°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO <sub>2</sub> , HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Material of Valve Body	Brass, Nickel-plated
For Tubes	<i>outer Ø6mm / outer Ø8mm</i>

**Basic Variants (others on request)**

Article code	Type
<b>F0040001</b>	End-of-Line Adaptor with Gauge
<b>F0040002</b>	End-of-Line Plug
<b>F0040003</b>	End-of-Line Adaptor without Gauge

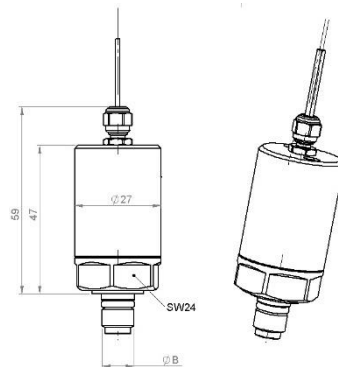
**Contact Gauges for High or Low Pressure application (Type F051/053)**



- Pressure Gauge for Indication and Monitoring of the Cylinder Pressure and for Signaling of eventual Leaks
- Pressure Measuring Device for use in Gas Extinguishing Systems as per EN 12094-10 (VdS/CE/LPCB; UL/FM-approved Gauges available too)
- High Switching reliability and long Service Life
- design as per EN 837-1 and EN 12094-10
- different Switch Contact Setpoint available
- Ingress Protection Class IP 65
- patented Pressure Gauge Connection M12x1mm: (P) US9,072,925 B2

Scale Range	on request, max. 400bar
Pressure Limitation	steady: 3 / 4 x full scale fluctuating: 2 / 3 x full scale short time: full scale
Temperature Range	-20°C up to +65°C
Connection	M12x1mm (male) → high Pressure Gauges M10x1mm (male) → low Pressure Gauges
Electrical Data	Switching Voltage: 4.5 ... 24 VDC / VAC  Switching Current: 5 ... 100 mA  Contact Load: max. 2.4 W  Switching Contact: breaks (normally closed - NC) or makes (normally open - NO)  Potential- Free Contact
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO2, HFC227ea, FK5-1-12, Liquid Agents, AFFF,...

**Signal Generator (Type F070)**

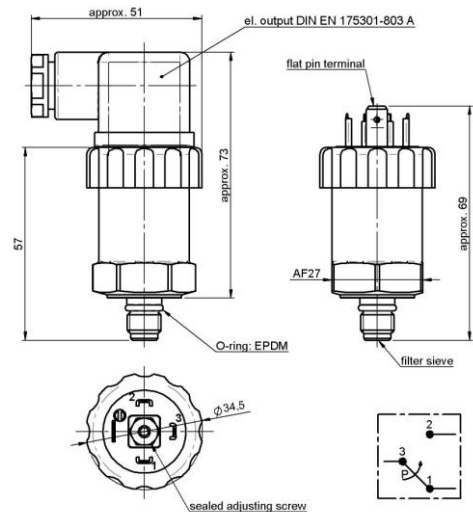
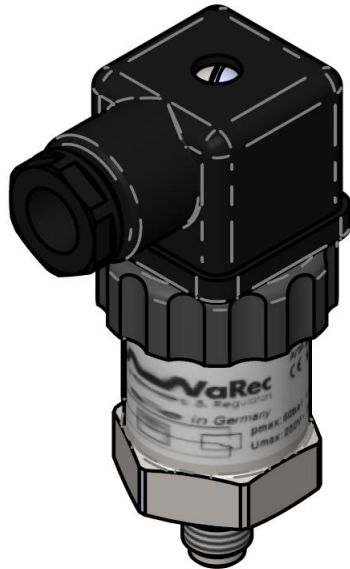


- meets the Highest Tightness Requirements
- Resistant to Mechanical Forces (Shock and Vibration)
- High Reliability caused by a Simple Measurement Principle
- Robust and Compact Design
- Ingress Protection Class IP 65
- available as NC, Change-Over or NO Contact

Operating Pressure	max. 28bar
Temperature Range	-20°C up to +85°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO <sub>2</sub> , HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Connection	M10x1mm (male) or G1/8" (female)
Available Switch Modes	normally closed - NC normally open – NO Change-Over Contact
Electrical Data	see FiWaGuard-Manual Chapter 23

**Pressure Switches (Type F054)**

If the pressure within the Detecting Tube drops below the Pressure Switches' preset Set Point, the Switch reacts which for example causes an Alarm or any System Switch-Off because of the Release of the Fire Extinguishing System.

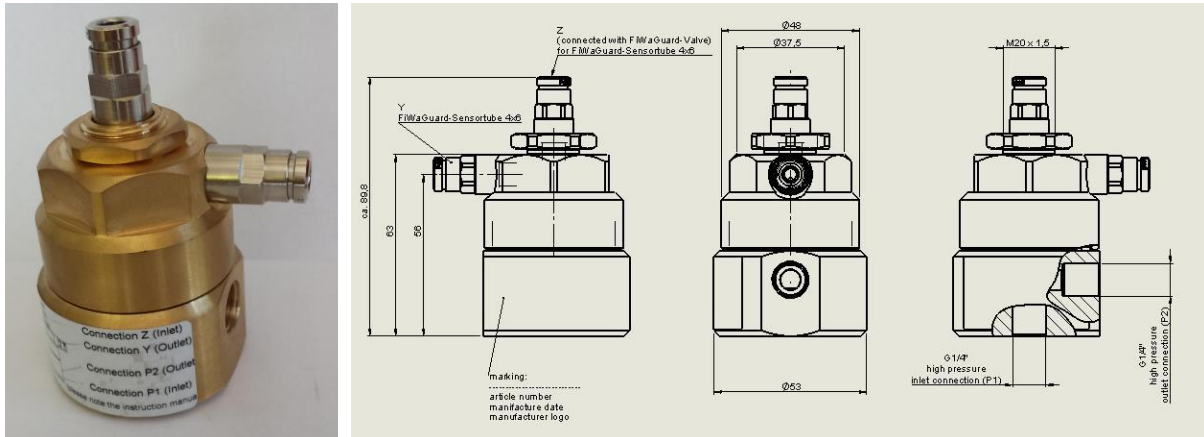


**F0540007; F0540008; F0540009:**

Pressure Range of Set Point for Switch	1 – 16bar Available Settings: 5bar, 11bar or for free Adjustment on Place
Operating Pressure	max. 60bar
Electrical Data	Switching Power: max. 28VDC / 2A or max. 250VAC / 4A  Switching Frequency: max. 100/min  Switching Contact: Change-Over Contact (normally closed – NC) (normally open – NO)  Potential- Free Contact
Ingress Protection Class	IP65
Temperature Range	-20°C up to +80°C
Connection	M10x1mm (male)

## **FiWaGuard-Selector Valve (Type F150)**

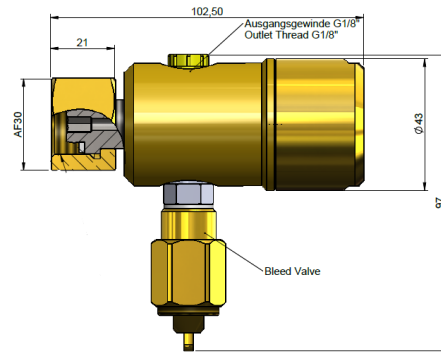
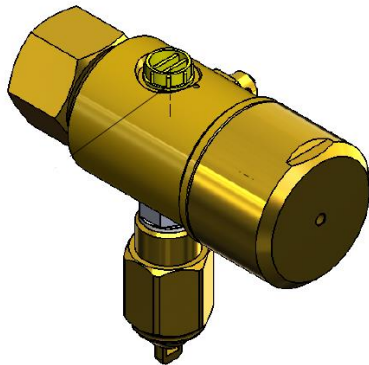
→ Only applicable for Indirect Systems (ILP or IHP)



- To use one Automatic Fire Suppression Cylinder Valve to cover more than one Hazard Area
  - (up to 5 different Areas per FiWaGuard®-Indirect-Valve)
- Only to use with FiWaGuard®-Indirect-Valves like:
  - FiWaGuard®-ILP (F401/F402/F420)
  - FiWaGuard®-IHP (F500/F501/F502)
- Controlled by FiWaGuard® Sensortube (Tube Pressure min. 15bar)
- Working Pressure up to 250bar (in the Extinguishing Line)
- High Flow Rate
- Suitable for various Gases and Agents

Operating Pressure	max. 250bar
Temperature Range	-20°C up to +65°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO <sub>2</sub> , HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Material of Valve Body	Brass
Connection threads	2x G1/4" (Connections for Extinguishing Line) 2x G1/8" (with FiWaGuard Fittings for Sensortube Ø 4x6mm)
Seat Diameter	Ø6,9mm (DN6,9)
Classification	FiWaGuard® – Selector Valves Type F150 are Pressurized Equipment according to art. 3.3 of the Pressure Equipment Directive Therefore, a CE marking as per PED is not permissible

**Pressure Regulator for Cylinder Valves (Type F804)**



- meets highest Requirements.
- meets the highest Operational Reliability
- Operating up to 250bar Inlet Pressure
- Compact and Robust Design
- Equipped with Bleed Valve and 30bar Pressure Relief Device

Seat Diameter	Ø4mm (DN4)
Operating Pressure	max. 300bar
Temperature Range	-20°C up to +65°C
Outlet Pressure	18bar (+/-1) @ Cylinder Pressure 60bar
Extinguishing Agents <sup>1</sup>	CO <sub>2</sub> , Inert Gases, compressed Air,...
Material of Valve Body	Brass
Inlet Thread	W21,8x1/14"
Outlet Thread	G1/8"

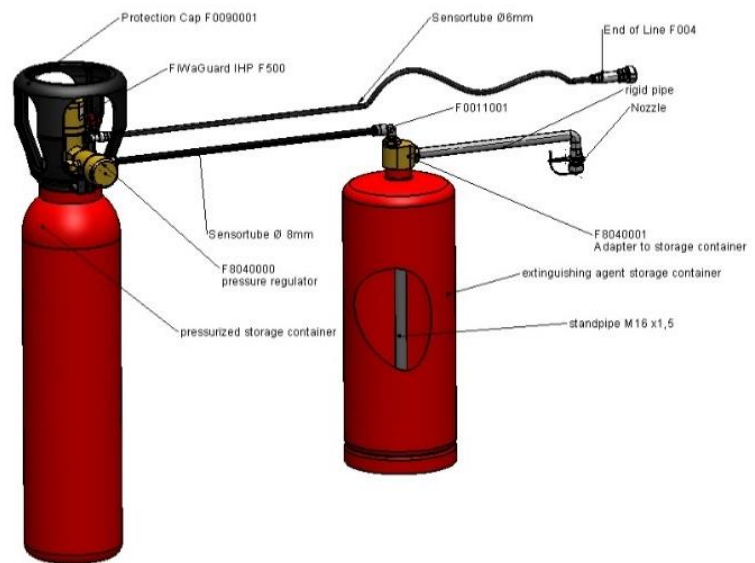


**Pressure Regulator for Cylinder Valves (Type F804) – follow up**

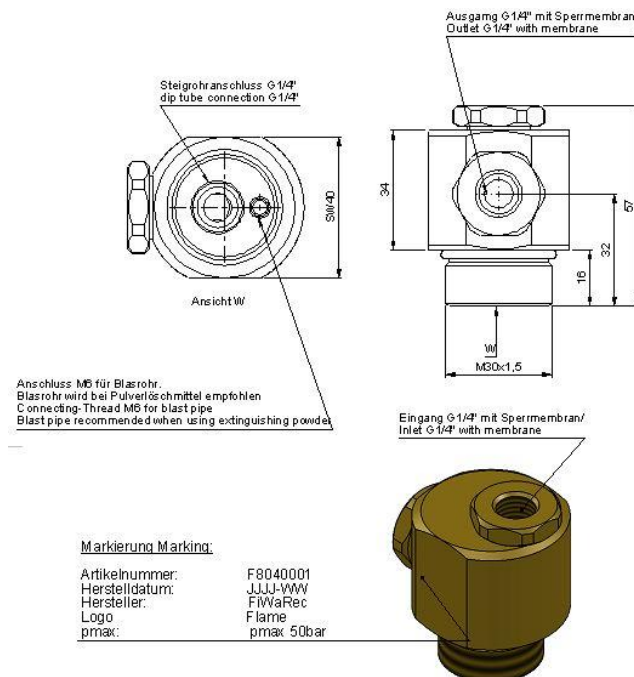
- FiWaRec Pressure Regulators Type F804 for use in Combination with High Pressure Cylinder Valves to reduce the Downstream Pressure
- Adequate Valves from FiWaRec® are the CO<sup>2</sup> and Inert Gas Variants from Product Groups:
  - IHP Valves F500/F501
  - High Pressure Cylinder Valves F202/F242
  - Solenoid Cylinder Valves F203/F243



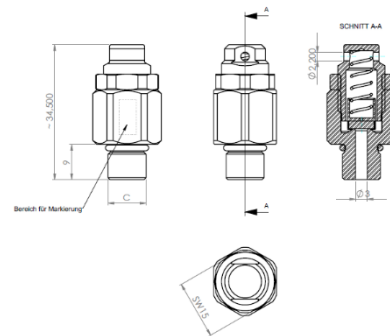
**schematic view**



**Valve Head/Valve Adaptor for Agent Cylinder**



**Spring-Loaded Safety Device (Type F803)**



**Spring-loaded Safety Valves**

- are direct-acting Safety Valves
- prevent an overstepping of a preset by blowing off some Pressure
- close again when reaching an uncritical Pressure Range
- Simple and fast Assembling and Disassembling of the Safety Valve by using an adequate Tool
- Nickel-plated Surface
- different Variants available

Operating Pressure	45bar (please consider the nominal relief Pressure)
Temperature Range	-20°C up to +65°C
Types of Gases and Extinguishing Agents	Inert Gases (Nitrogen, Argon,...), CO <sub>2</sub> , HFC227ea, FK5-1-12, Liquid Agents, AFFF,...
Material of Valve Body	Brass, Nickel-Plated
Seat Diameter	Ø3mm (DN3)
Connection Thread	G1/8" or G1/4" (others on request)

**FiWaGuard Nozzles (Type F006)**



- Nozzles for different Extinguishing Agents – Powder, Liquid Agents, Foam, Inert Gas, CO2,...
- Brass, Nickel-plated Brass, Stainless Steel
- with / without Protection Cap
- Connection Thread G1/4" (female)
- Special Versions with Full Cone Spray in two Different Angles available



**F0060014**

SW15; Ø20; G1/4"

Stainless Steel

Particle Filter included (<1mm)

Full cone approx. 64°

Cap: Stainless Steel with Rope

*(for wide Coverage)*

**F0060015**

SW15; Ø20; G1/4"

Stainless Steel

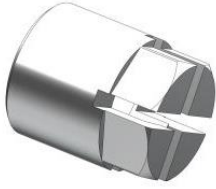
Particle Filter included (<1mm)

Full cone approx. 15°

Cap: Stainless Steel with Rope

*(for long Spray)*

**FiWaGuard Nozzles (Type F006) – follow up**



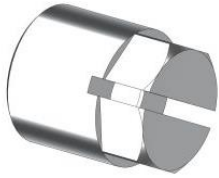
**F0060001**  
Ø16x19; SW14; G1/4"  
Brass, Nickel-plated  
Cross Slots, broad



**F0060002**  
Ø16x19; SW14; G1/4"  
Brass, Nickel-plated  
Side Slot, broad



**F0060003**  
Ø16x19; SW14; G1/4"  
Brass, Nickel-plated  
Sloped Slot 45°, broad



**F0060004**  
Ø16x19; SW14; G1/4"  
Brass, Nickel-plated  
Slot, broad



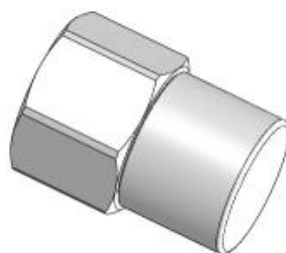
**F0060005**  
Ø16x19; SW14; G1/4"  
Brass, Nickel-plated  
3 Slots, narrow



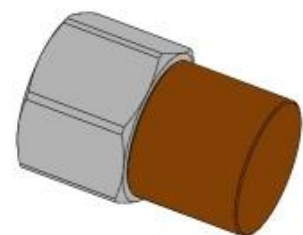
**F0060006**  
Ø16x25; G1/4"  
Brass, Nickel-plated  
3 Bore Holes



**F0060007**  
Ø16x25; G1/4"  
Brass, Nickel-plated  
centric Bore Hole

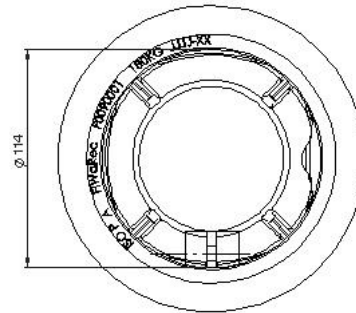
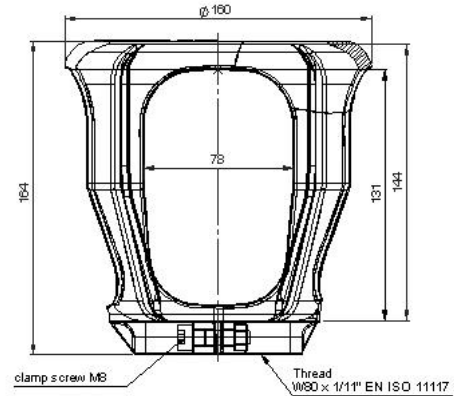


**F0060010**  
SW16x24; G1/4"  
Stainless Steel  
3 Slots, narrow  
Cap: Stainless Steel



**F0060011**  
SW16x25; G1/4"  
Stainless Steel  
3 Slots, narrow  
Cap: NBR

**FiWaRec Valve Guard (Type F009)**



\* Test Report from Notified Body upon request

- Meets the Requirements of EN ISO 11117 (tested by BAM)
  - For Cylinder Assemblies with Package Weights up to max. 180kg
  - Cylinder Connection Thread W80x1/11"
- Suitable for different Valve Types
  - Especially for F202/F242, F203/F243 and FiWaGuard Valves
- The Cap can be left on the Cylinder even when the Valve is in Use
  - Large Openings ensure a good access to all Valve Connections and Functions
- Made of Steel, painted in Black for Corrosion Protection

**FiWaGuard Accessories (Type F010/005)**



**F0100004**  
Dismounting Tool



**F0100006**  
Multitool



**F0100008 – F0100011**  
Grommets



**F01000012 / F0100013**  
Tube Mountings



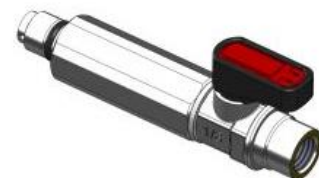
**F0100014**  
Tube Deburr Tool



**F0100017**  
Tube Scissor



**F0100018 - F0100022**  
Cable Ties in Different Variations



**F005**  
Filling Adaptors

**For more details and information like**

- Datasheets
- Technical Drawings
- Instruction Manuals
- Additional Catalogues
- ...

**Please send a request to: [sales@fiwarec.de](mailto:sales@fiwarec.de)**

**Or visit the download area on our website under:**

**<http://fiwarec.de/de/login.html>**

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