### **50 YEARS PROTECTING LIVES AND PROPERTY**



**CONTROL DEVICES** 















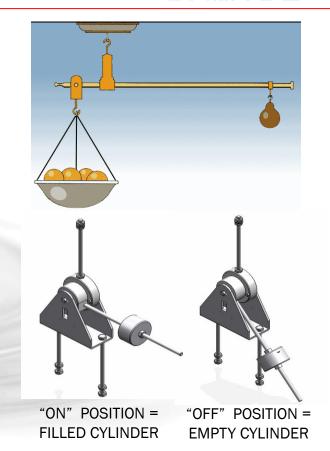
- I. Weighing devices
- II. Other devices
- III. Pressure control
  - Low pressures switches
  - Gauges with electric contact
- IV. Comparative
  - Advantages
  - Uses

### WEIGHING DEVICE



- Direct weight measurement
- Working principle: steelyard or Roman balance
  - Regardless of agent
  - Guaranteed behavior in adverse conditions
  - Finished system, ready to use

- √ 100% reliability
- ✓ extremely precise system



### WEIGHING DEVICE



- Ready-to-use
- Features
  - Cylinder hangs from a steel structure
  - Electric signal to fire control panel (optional, highly recommended)
  - Extremely precise system: 0% to 5%. Re-adjustable
  - Weight limit: up to 567kg (~265L)
- Use (stock)
  - All agents
  - THE ONLY effective control device for HFC-23 and CO2 systems (self-pressurized agents)







### OTHER DEVICES



# Liquid level indicator

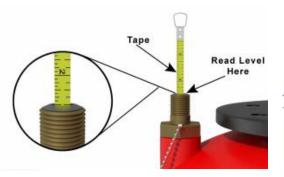
- In contact with the agent → Leakages
- Installed when cyl is empty
- No signal to fire panel
- Weight determination by graph

#### **Minimax**

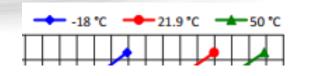
- » Novec 1230 at 25 bar only
- » VdS approved
- » 280 / 390 / 500 lbs only

#### Fike

- » HFC-227ea and HFC-125
- » FM / UL / ULC approved
- \* 44, 61, 88, 153, 267 and 423 L (100, 150, 215, 375, 650 and 1.000 lbs.)







## **OTHER DEVICES**



# Agent measurement comparison

MECHANICAL WEIGHING DEVICE	LIQUID LEVEL INDICATOR (LLI)
Indirect measurement, contactless	Direct measurement, in contact with agent
<ul> <li>✓ No leakages</li> <li>✓ Cyl. can be charged or empty (new systems or adaptions of existing ones, regardless of type)</li> <li>✓ Customized answer: 0% to 5%</li> <li>✓ Signal to fire panel (optional)</li> <li>✓ SIEX-WD: full approvals: VdS, UL, FM</li> <li>× Weigh limit: up to 567,9 Kg (gross weight, 415 Kg of agent)</li> </ul>	<ul> <li>Possible leakages</li> <li>Installed with cyl. empty only</li> <li>Cyl must include specific port</li> <li>Visual check only</li> <li>Chart required: pressure, temperature</li> <li>Measurement is not precise</li> </ul>

### PRESSURE CONTROL: Low Pressure Switch



- Approvals: VdS, UL, FM
- Use (stock)
  - HFCs agents + VdS or UL / FM approval
  - Inert gases + UL / FM approval
  - Do NOT use: Novec, HFC-23, CO<sub>2</sub>,

### Features

- Assembled on the cylinder valve
- Re-adjustable, even with charged cyl.
- Options: NC / NO / Commutable
- Classified atmospheres: Standard / Explosion proof



### PRESSURE CONTROL: GAUGE WITH CONTACTS



- Approvals: VdS, UL, FM
- Use (stock)
  - Inert gases + Vds
  - Do NOT use: (Novec), HFC-23, CO<sub>2</sub>,
- Features
  - Assembled on the cylinder valve
  - Non-adjustable
  - Classified atmospheres: Standard / Explosion proof







### **COMPARATIVE: SIEX APPROVALS**



# Weighing device

- The only reliable system, 24/365 (electric shutdown)
- Regardless of the agent
- Weight limit
- Low pressure switch
  - Indirect measure: pressure
  - Re-adjustable in-place
  - Electric signal to fire panel
- Gauge w/ contacts
  - Indirect measure: pressure
  - Provides visual check
  - Electric signal to fire panel

	WEIGHING DEVICE		PRES	SURE TCH	PRESSURE GAUGE W/ CONTACTS	
	VdS	UL / FM	VdS	UL/ FM	VdS	UL/ FM
FM-200	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$		
HFC-125	✓		$\checkmark$			
HFC-23	$\checkmark$		$\Diamond$		$\Diamond$	
Novec	✓				$\checkmark$	
IG-541	✓	✓		✓		✓
IG-55	✓	✓		$\checkmark$		✓
IG-100	✓	1		$\checkmark$		$\checkmark$
IG-01	<b>√</b>	1		✓		✓
CO2	✓	<b>√</b>	$\Diamond$	0	$\Diamond$	$\Diamond$
Kitchens	✓		<b>√</b>			
"propellent" (N <sub>2</sub> cyl)	✓	✓		✓	✓	9

## **COMPARATIVE:** Competitors



	WEIGHING DEVICE		LOW PRESSURE SWITCH		PRESSURE GAUGE with CONTACTS		LIQUID LEVEL INDICATOR
	VdS	UL / FM	VdS	UL / FM	VdS	UL / FM	
Siex	✓	<b>√</b> 4	✓	✓	✓	✓	
Minimax	✓	no					✓ (VdS)
Siemens	$\checkmark$	no	0 0	(A-			
Fike		no					✓ (FM / UL / ULC)
Pyro-chem		no					$\checkmark$
G & S Brandschutz	CO <sub>2</sub> low pressure	no					
Gottschalk	CO <sub>2</sub> high	no					
Feuerschutzanlagen	pressure						



# QUESTIONS?

Thank you for your time