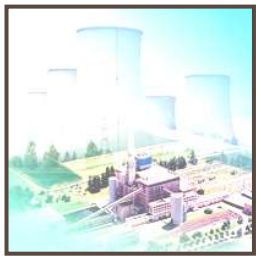
NORGREN
FLUID CONTROLS

FLUID CONTROLS

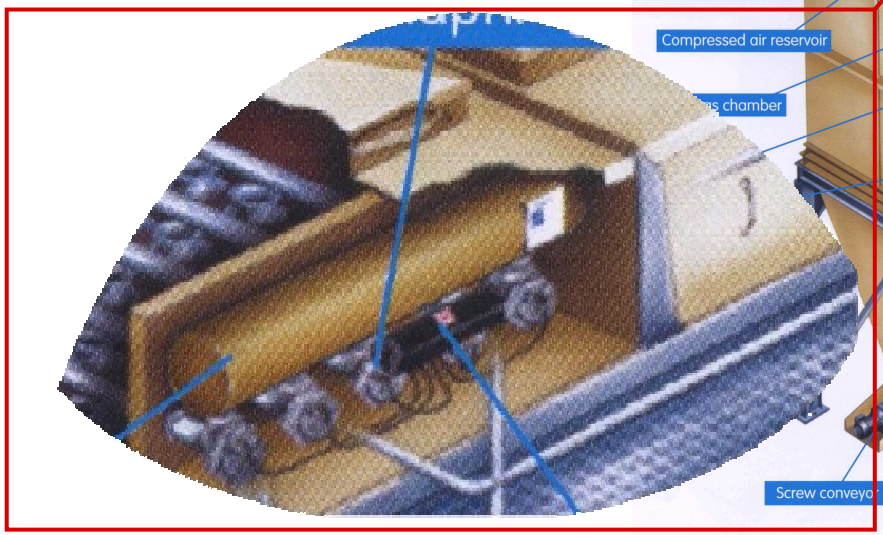
ENERGY & ENVIRONMENT
Air pollution control

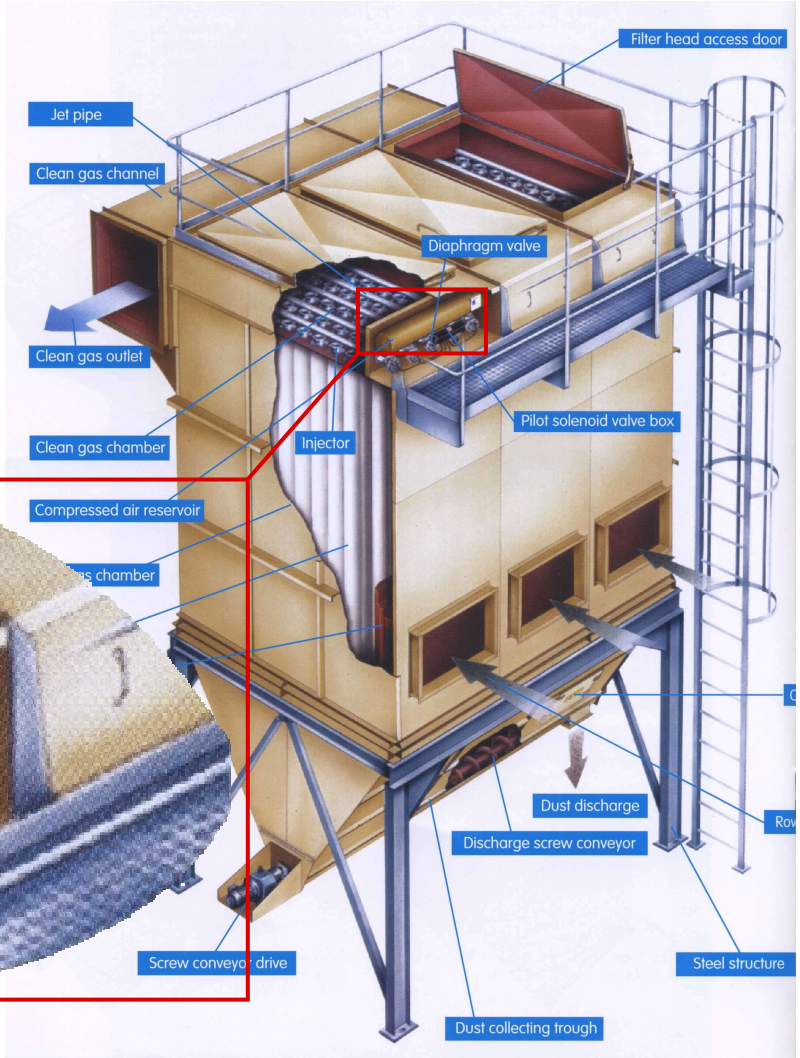




ENERGY AND ENVIRONMENT
AIR POLLUTION CONTROL

NORGREN FLUID CONTROLS

- Valves
- Tanks
- Controllers





ENERGY AND ENVIRONMENT

APC - Definition

- Air Pollution Control APC is only a part of the possible applications

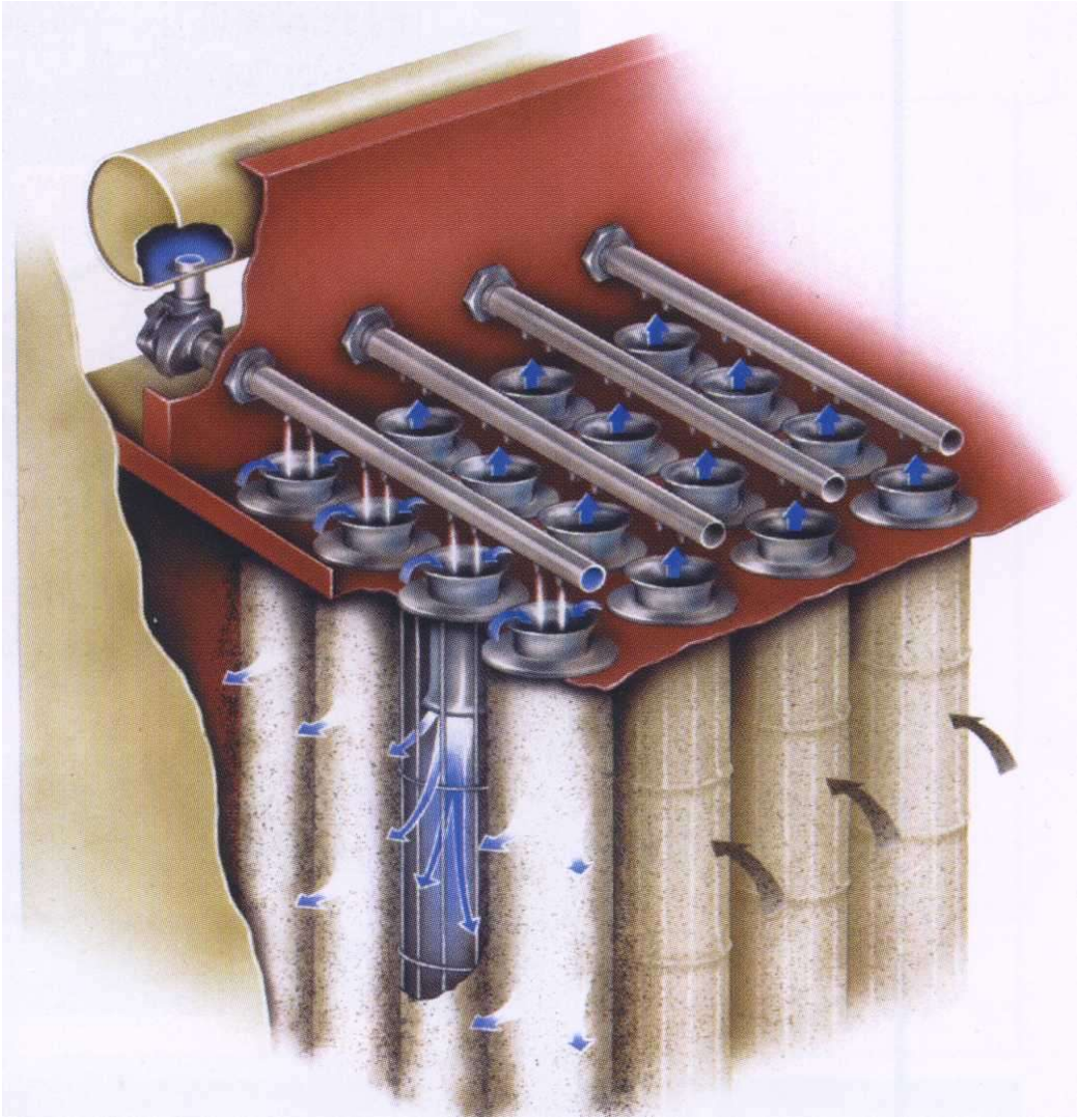
- Dust filter valves and components

- APC means more
  - environment application / cleaning waste gas
  - pneumatic conveyor systems
  - process applications
  - cleaning air for energy plants

- Buschjost defines APC as
  „all applications with dust filter valves and components“

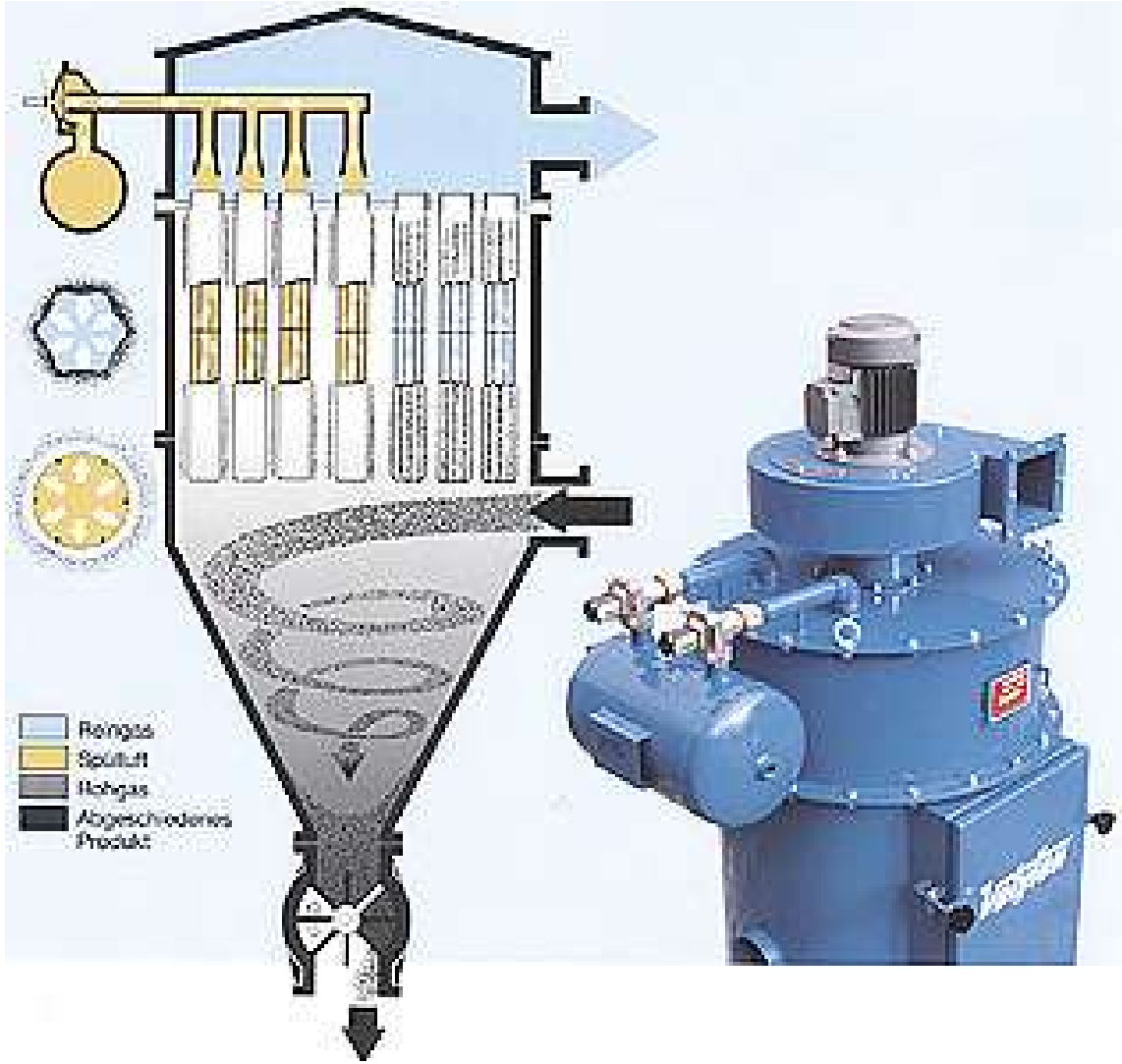
ENERGY AND ENVIRONMENT

APC – How does it work?



ENERGY AND ENVIRONMENT

APC – How does it work?



ENERGY AND ENVIRONMENT

APC – Applications

Filters for wood- and metalworking industries, mills, bag filling cabinets ....

ENERGY AND ENVIRONMENT

APC – Applications

...cement plants, power plants, gas turbines and lots of more applications for seperating dust from exhaust gases ....

ENERGY AND ENVIRONMENT

APC – References

NORGREN FLUID CONTROLS

Simatek®

Donaldson Filtration Solutions

camfil FARR

MAHLE

LÜHR FILTER

Dustex
PRODUCT RECOVERY & AIR POLLUTION CONTROL FOR INDUSTRY SINCE 1947

scheuch
TECHNOLOGY FOR CLEAN AIR

FLSmidth AIRTECH

INTENSIV FILTER

HANDTE Umwelttechnik

reine Produktivität
Herding
FILTERTECHNIK

ENERGY AND ENVIRONMENT
APC - Applications summarized

- Pneumatic conveyer systems for powder and solids
  - pressure conveyor system
  - vacuum conveyor system

  Pharmaceutical industry:
  e.g. stainless steel valves or WEMA-Kor coated valves
  Good background: www.azo.de

- Process filter
  - reaction happens on the fabric filter surface

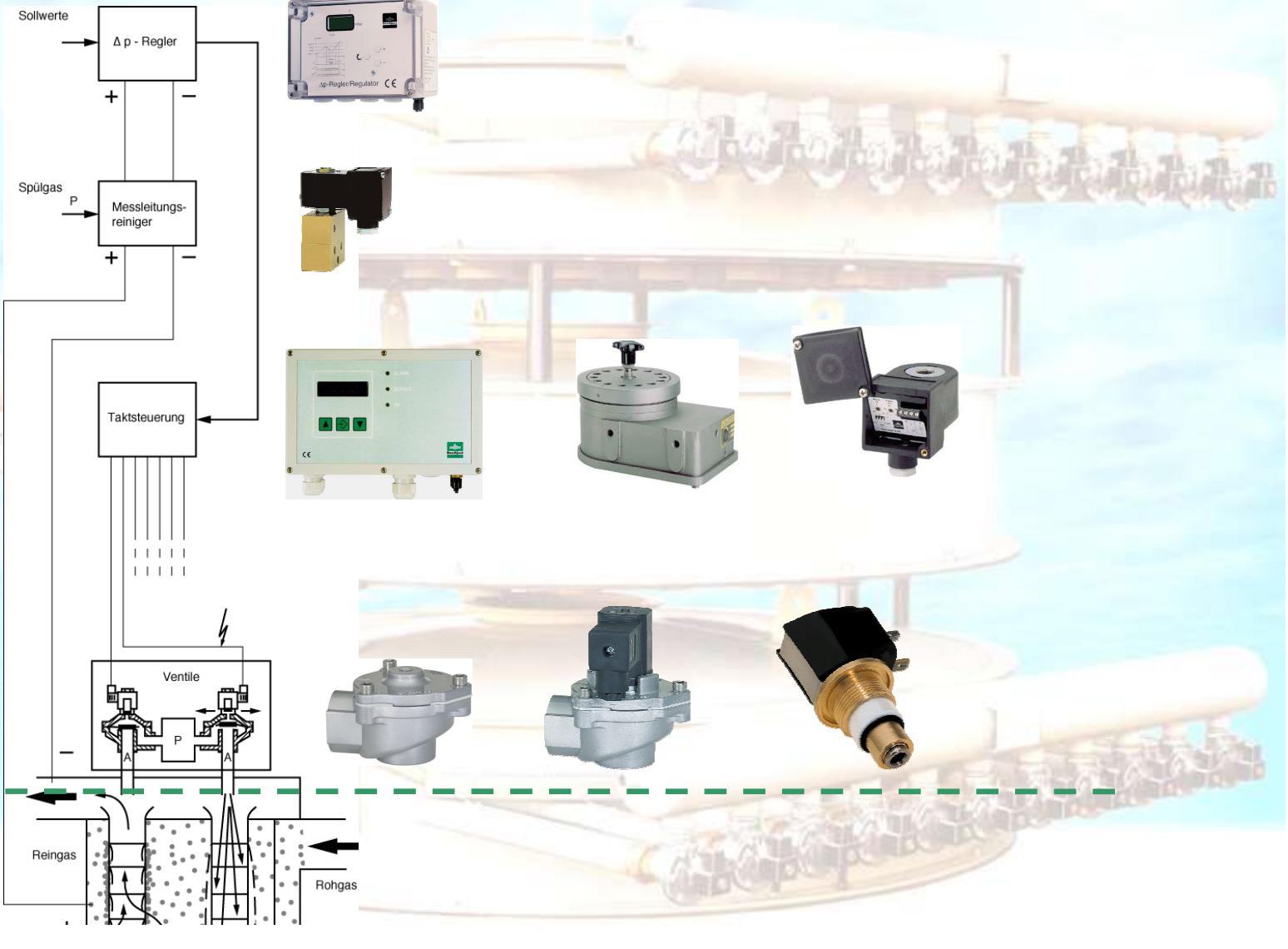
  Example:
  reduction of sulfur dioxide in the waste gas of coal power plants

- Air pollution
  - furnace waste gas cleaned from dust
    (new laws: electric filter → fabric filter)
  - Industrial production (welding)
  - low cost

- Energy plants
  - clean air for burning process, inlet filter chambers

ENERGY AND ENVIRONMENT

APC – Product range



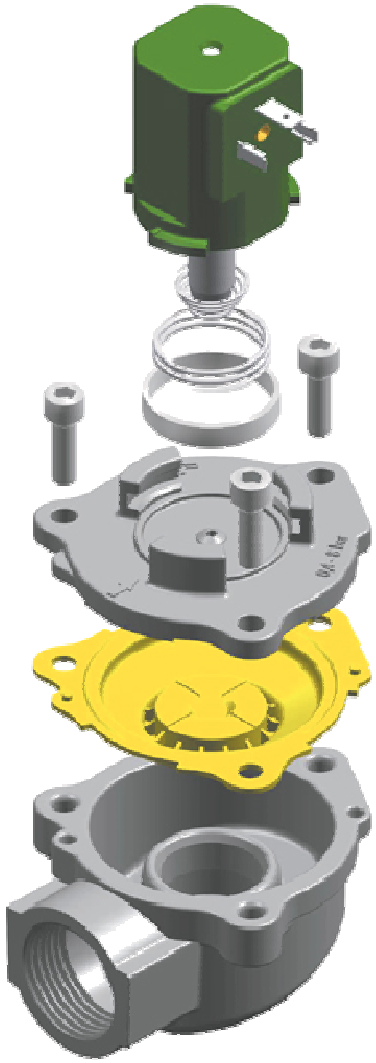
ENERGY AND ENVIRONMENT

APC – Product range

Facts

➢Unique diaphragm technology and solenoid system reduce maintenance costs

Buschjost diaphragms´ lifetime is 1.5 to 5 M cycles compared to 0.25 to 1 M
Reduced number of single parts which are captive reduce maintenance time



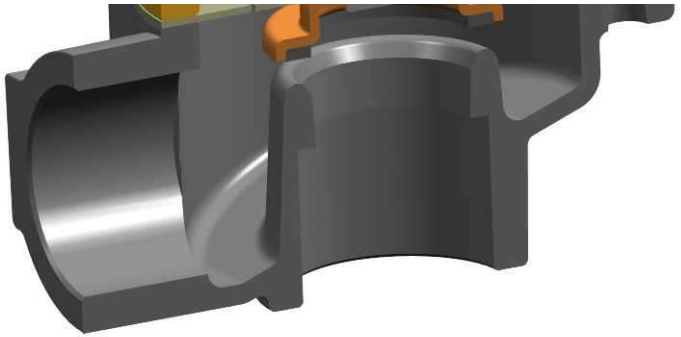
ENERGY AND ENVIRONMENT

APC – Product range

Facts

➢Diaphragm technology and body design provide superior performance, which helps reducing air consumption and gives a chance to downsize valve

20% better reaction time and reduced pressure loss allow lower system pressure
Superior flow (up to 40% higher!) makes downsizing of valve possible



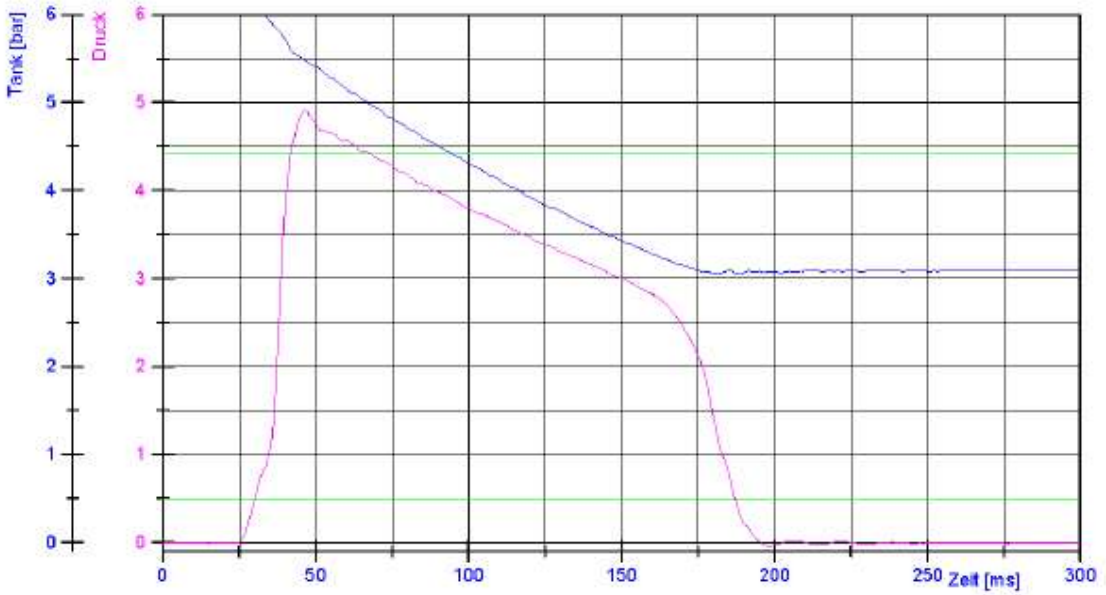
ENERGY AND ENVIRONMENT

APC – Important

Ventiltechnik und Systeme
NORGREN BUSCHJOST GMBH + CO.KG

Hersteller:	**Buschjost**
Type:	8296600.8171.02400
Anschluss:	G1½
Behältervolumen:	32 dm³
Behälterdruck:	6 bar
Elektrischer Impuls:	50 ms
Impulslänge:	165 ms
Max. Druck:	4,9 bar
Druckquotient:	82,0 %
Behälterdruckabfall:	2,9 bar
Volumen/Impuls:	85,3 Ndm³
Druckanstiegszeit 10-90:	13 ms
Öffnungszeit:	38,5 ms
Schließzeit:	133,7 ms
Besonderheiten:	

Messprotokoll - Ventile für Entstaubungsanlagen



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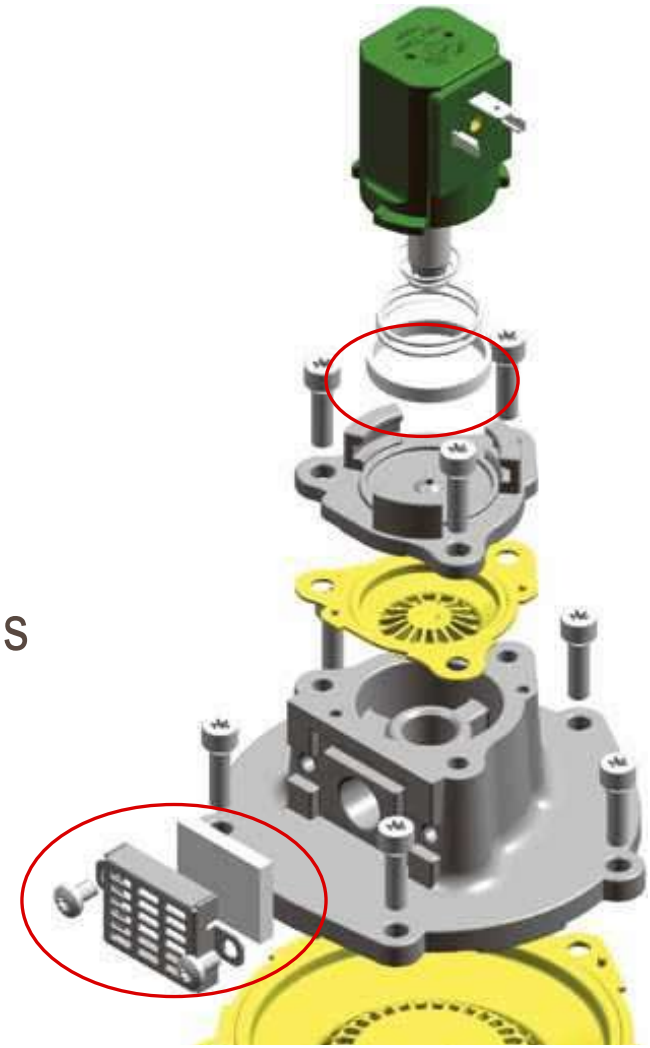
ENERGY AND ENVIRONMENT

APC – Product range

Facts

➢Due to unique silencer design noise emissions are approx. 20% lower

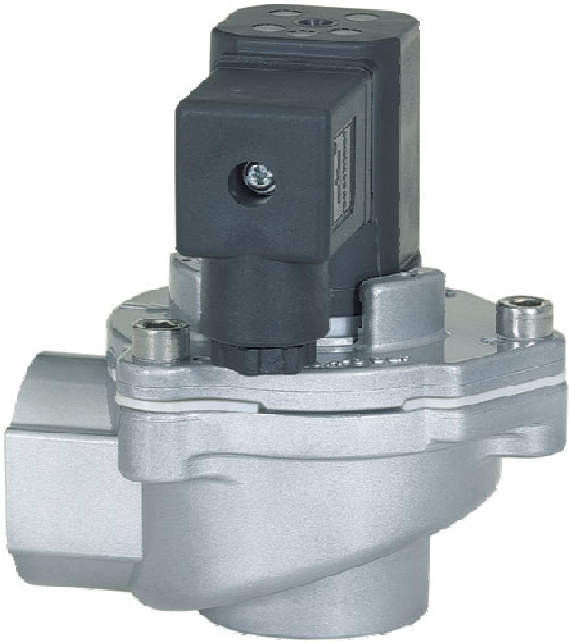
Cost reduction because additional covering is not necessary



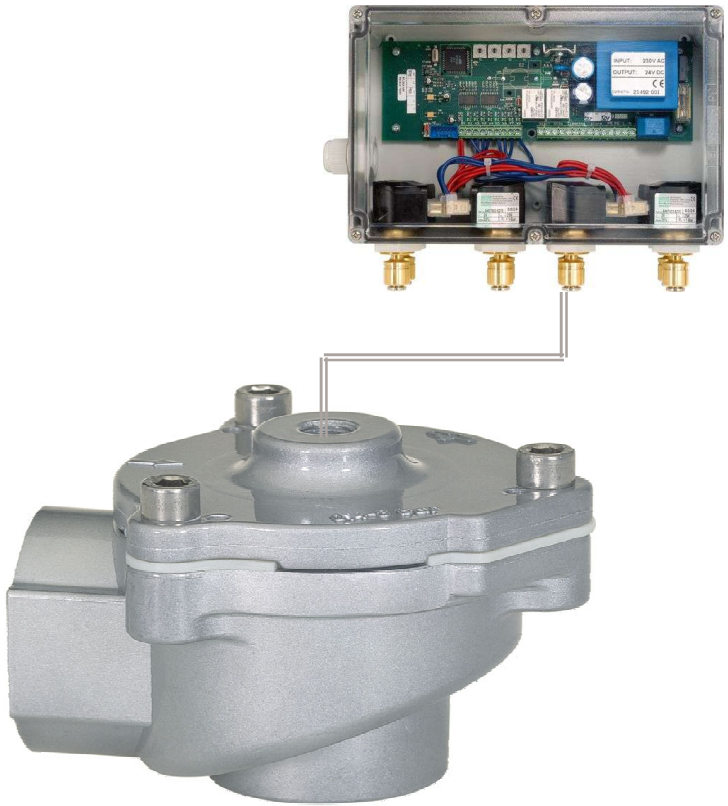
ENERGY AND ENVIRONMENT

APC – Product range

Internally piloted,
...just „Twist-on“



…external piloted,
from a pilot box

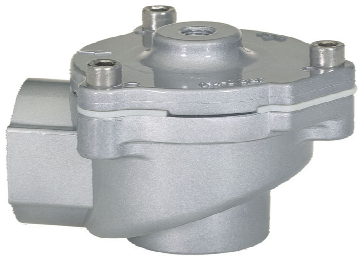


ENERGY AND ENVIRONMENT

APC – Product range

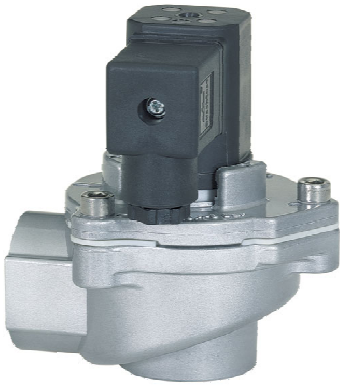
Technical Data and Specifications:

Sizes	: ¾” / DN 20 up to 3”/ DN 80
Operating Pressure	: 0,4 – 8/6 bar
Switching function	: normally closed (NC)
Fluid Temperature	: - 40°C to + 85°C (optional +140°C)
Ambient Temperature	: - 20°C to + 85°C (optional –40°C)



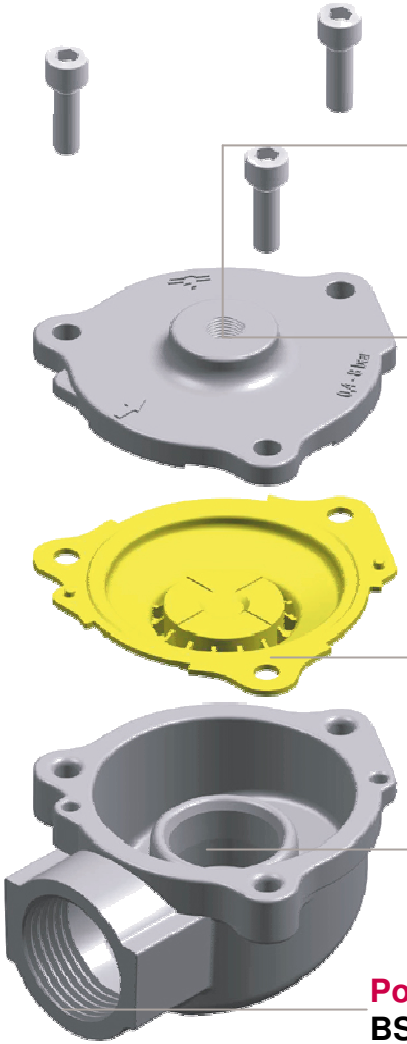
Material:

Body Material	: Aluminium / Stainless steel
Diaphragm	: Thermoplastic elastomer
Internal parts	: Stainless Steel



ENERGY AND ENVIRONMENT

APC – Product range



Pilot Port G 1/8
Connection to a pilot box

Simple one piece guided diaphragm
Less parts
Extended Life

Streamlined body passages
High Flow
Optimal pulse pressure

Ports available:
BSP, NPT, CF

ENERGY AND ENVIRONMENT

APC – Product range

Solenoid Operator System
Internal parts are captive
For easy assembly and disassembly.

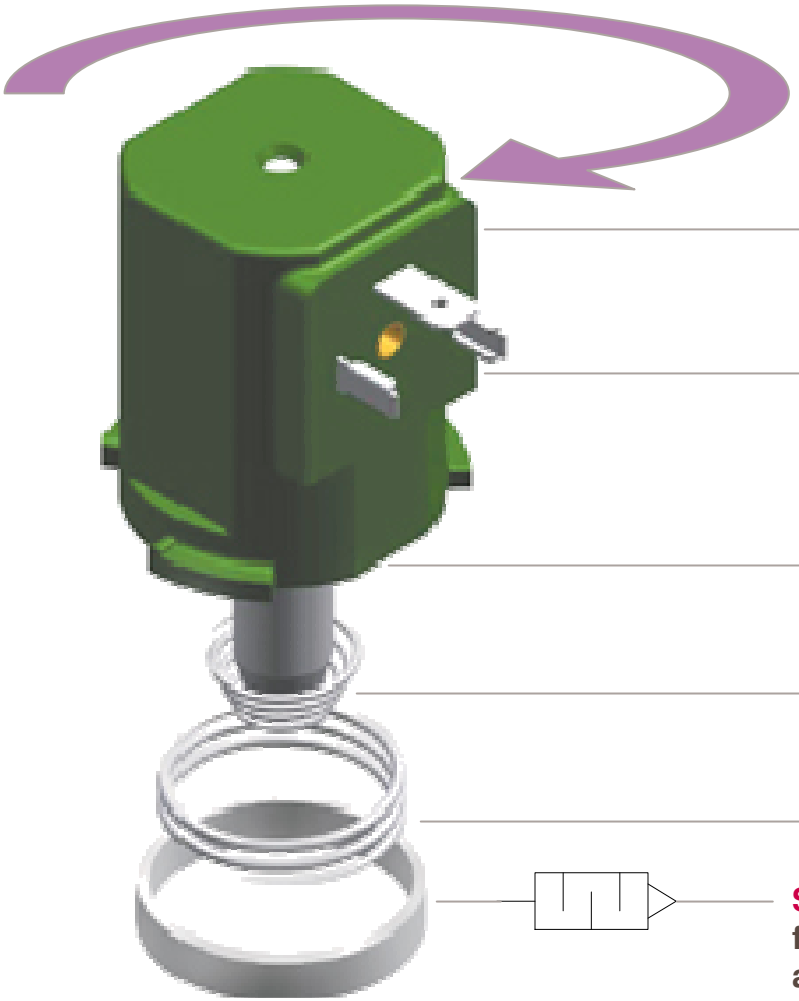
Encased solenoid protects against frost and icing: IP 65

Assembling without tools, just push down and „twist-on“

Integral silencer
for noise abatement
also acts as a rugged dust cover

ENERGY AND ENVIRONMENT

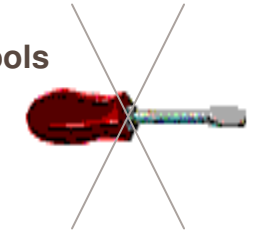
APC – Product range



Solenoid Operator System
3 x 120° mounting
„Push and Twist“

Operator components
Captive parts (plunger, spring and silencer)

No tools
Assembling without tools

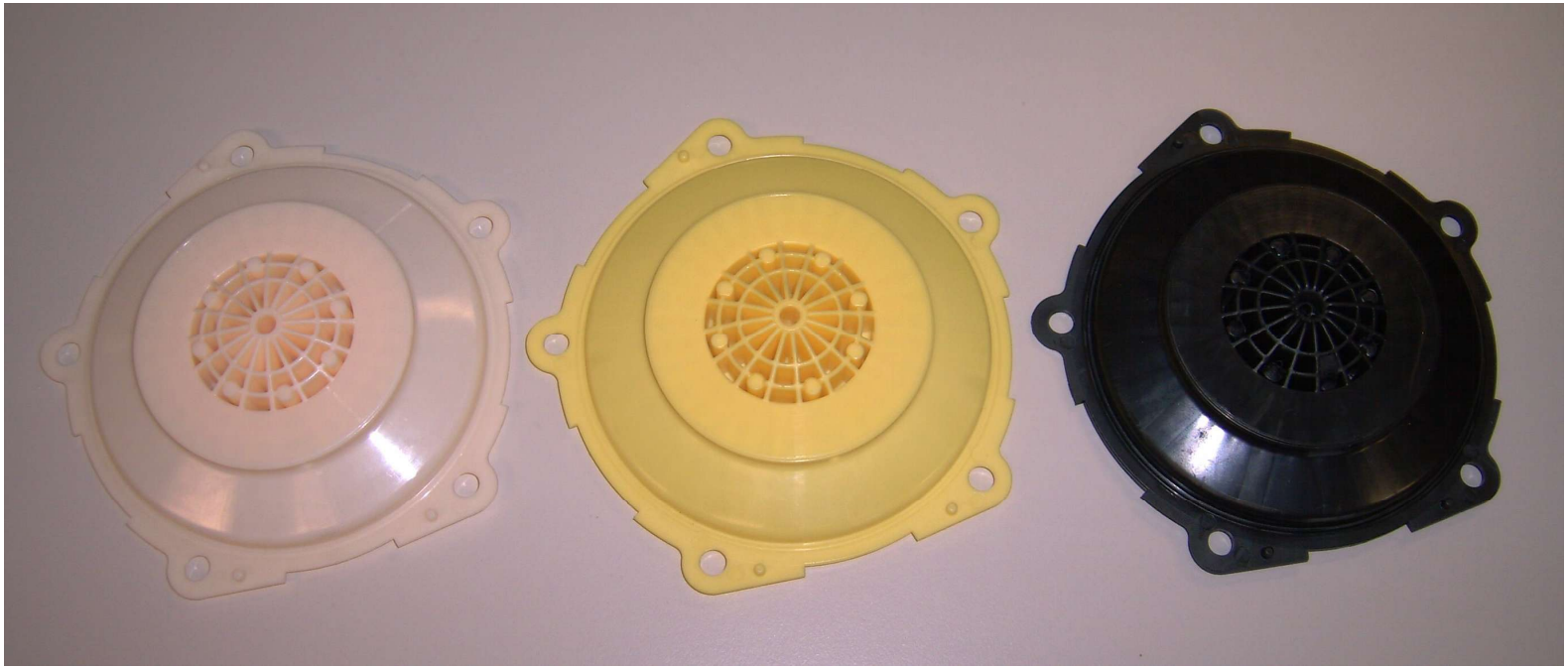


Innovative Design

Small construction size

Silencer
for noise abatement
also acts as a rugged dust cover

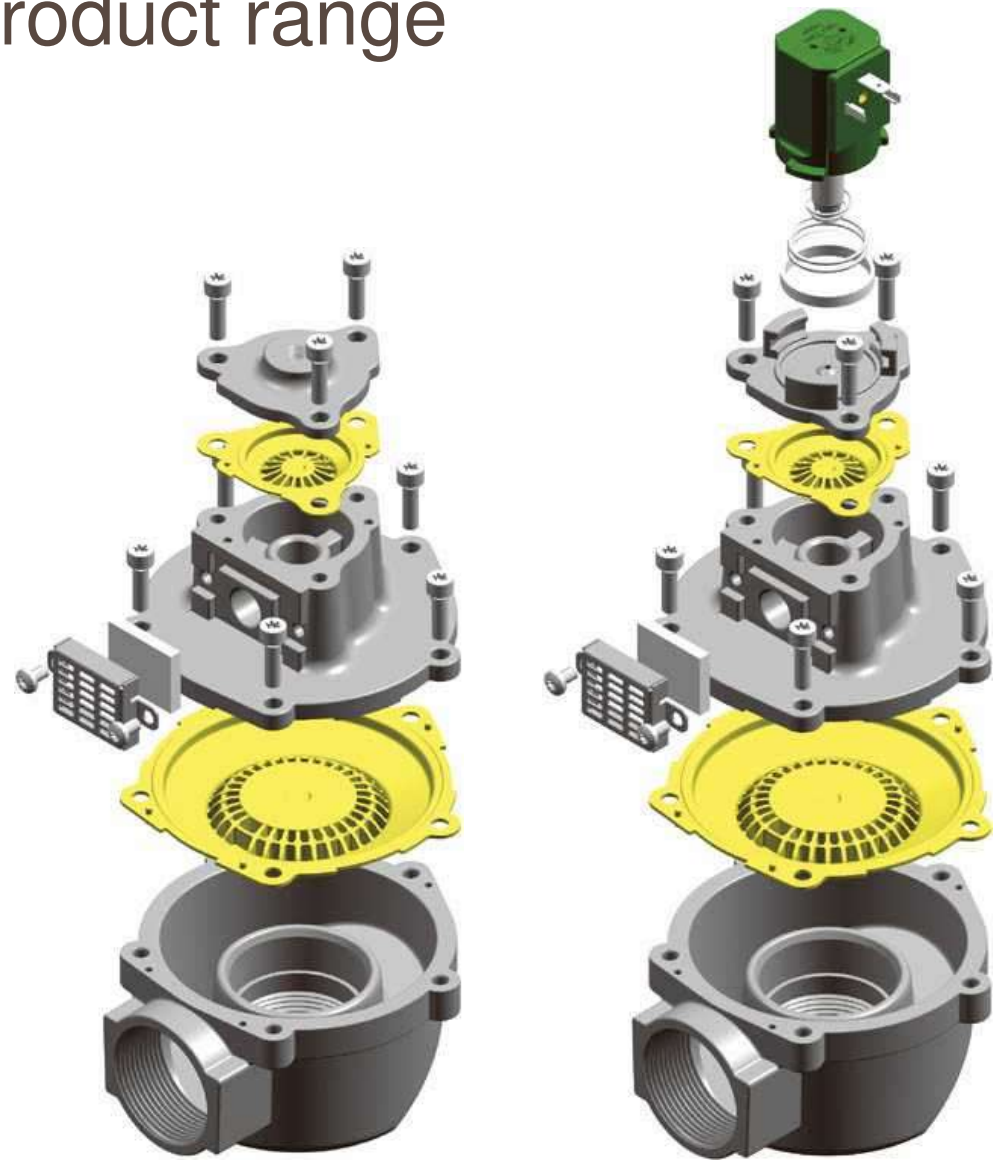
Diaphragm Options



Standard	Temperature 100 °C respectively 140 °C	Low pressure / vacuum 0,1 ... 0,8 bar

ENERGY AND ENVIRONMENT

APC – Product range



ENERGY AND ENVIRONMENT

APC – Product range

Like all Buschjost-solenoids:

Also available for zone 1/21 and 2/22 acc. to ATEX – 94/9/EC

Classification of Gas-Ex-Apparatus

Zone	Category	Classification
0	1	II 1 G
1	2	II 2 G
2	3	II 3 G

Classification of Dust-Ex-Apparatus

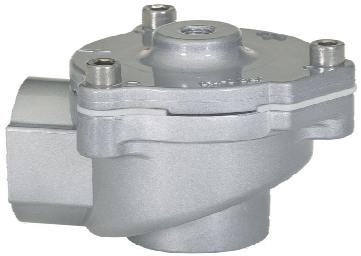
Zone	Category	Classification
20	1	II 1 D
21	2	II 2 D
22	3	II 3 D

ENERGY AND ENVIRONMENT

APC – Product range

ENERGY AND ENVIRONMENT

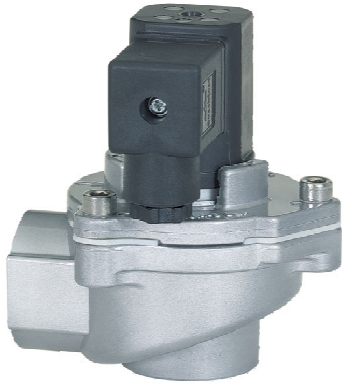
APC – Product range / Stainless Steel



83300

Technical Data and Specifications:

Operating Pressure	: 0,4 - 8 bar
Size	: ¾", 1", 1 ½"
Switching function	: normally closed (NC)
Flow Direction	: determined
Fluid Temperature	: - 40°C to + 85°C
Ambient Temperature	: - 20°C to + 85°C



83320

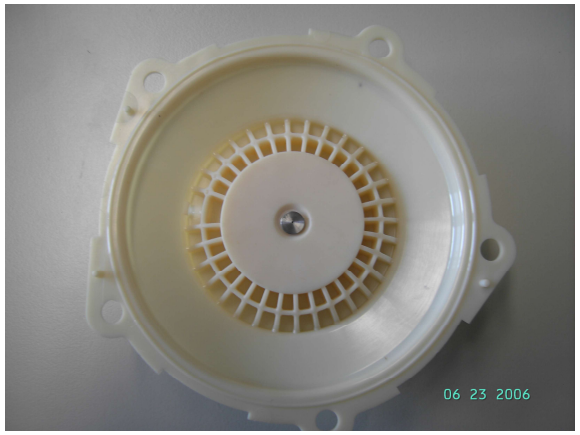
Material:

Body Material	: **Stainless steel**
Diaphragm	: Thermoplastic Polyester
Internal parts	: Stainless Steel

ENERGY AND ENVIRONMENT

APC – Product range / Aggressive Gases

- Alternative to stainless steel
- WEMA Kor coated bodies
- Stainless steel seat / tube
- Small orifice in the diaphragm



ENERGY AND ENVIRONMENT

APC – Product range / Compression Fitting

Technical Data and Specifications:

Operating Pressure	: 0,4 - 8 bar
Size	: DN 25, DN 40
Switching function	: normally closed (NC)
Flow Direction	: determined
Fluid Temperature	: - 40°C to + 85°C
Ambient Temperature	: - 20°C to + 85°C

83640

Material:

Body Material	: Aluminium
Diaphragm	: Thermoplastic elastomer
Internal parts	: Stainless Steel

83670

ENERGY AND ENVIRONMENT

APC – Product range

- 3” Tank valve
- More details on data sheet

ENERGY AND ENVIRONMENT

APC – Product range

- No freezing problems
- TPE diaphragm instead of fabric diaphragm avoids leakage through the material
  no problems to start a dust collector
- No complaints
- No spare part selling
- Dust filter valves for low temperatures – 40 °C
- Dust filter valves for temperatures up to + 140 °C
- „Small solenoid“

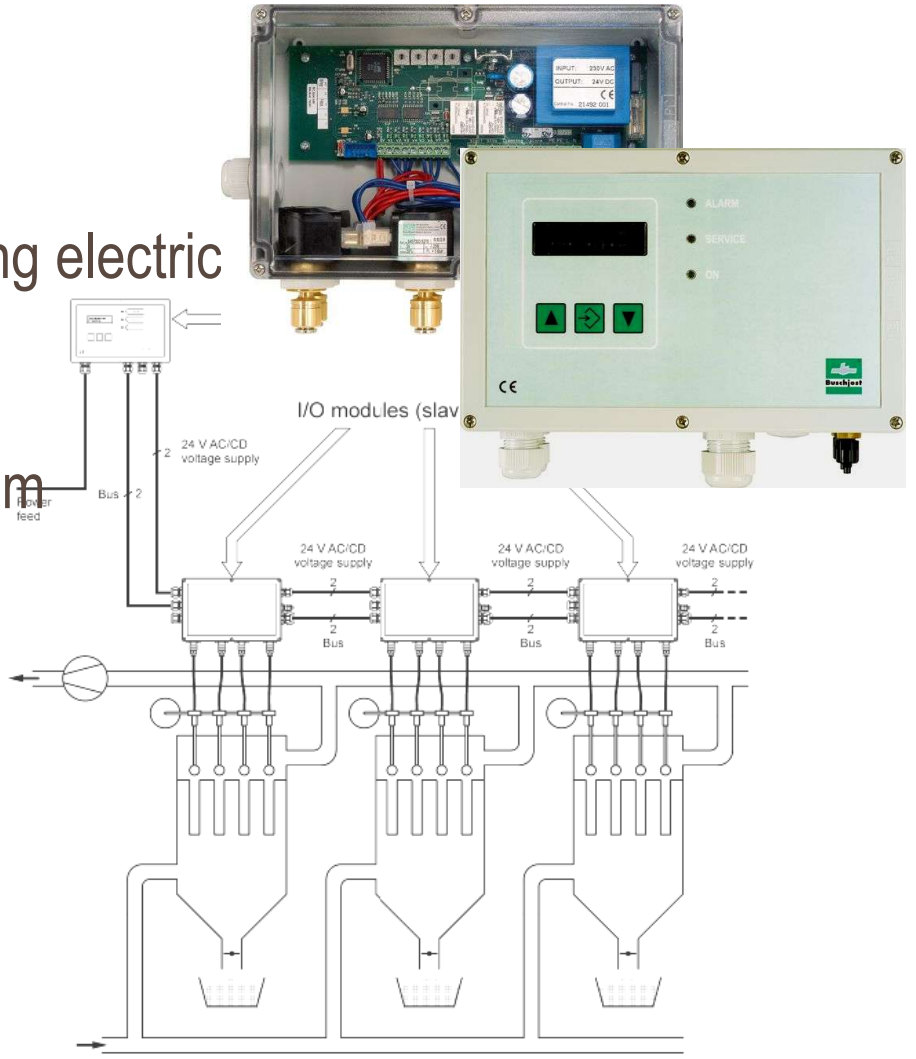
ENERGY AND ENVIRONMENT

APC – Product range

Facts

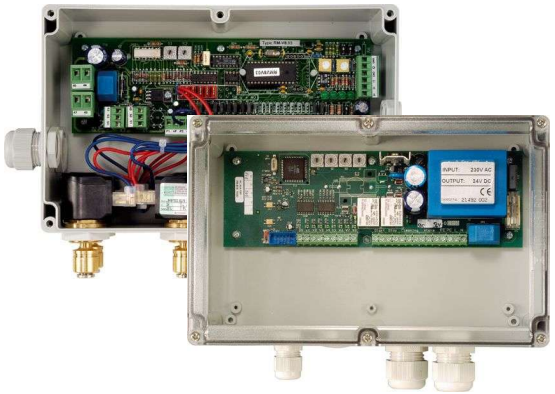
➢Control unit concept helps reducing electric assembling time up to 75%

Integrated pilot valves and bussystem reduce assembling time per valve by 12 to 15 minutes



ENERGY AND ENVIRONMENT

APC – Product range

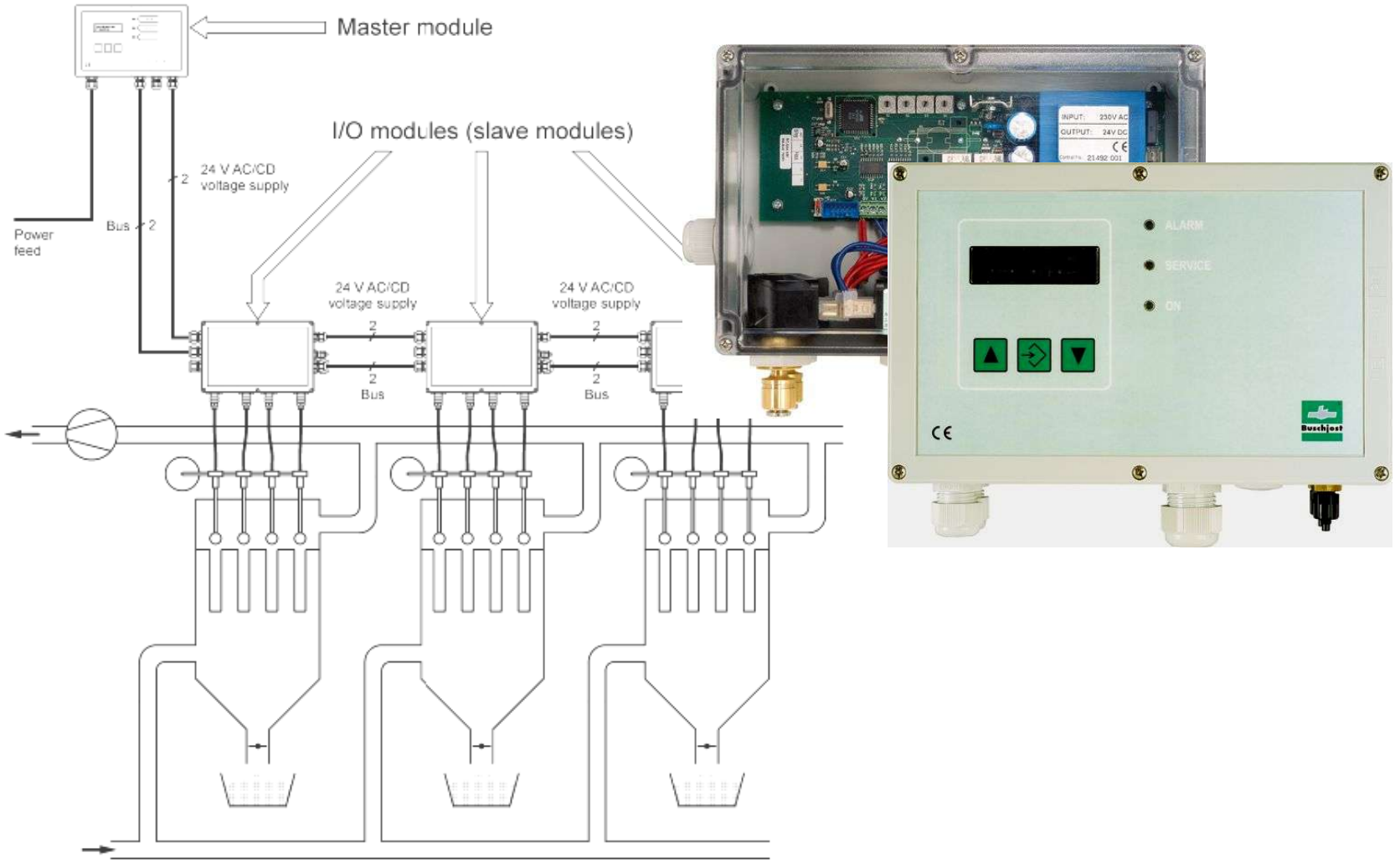


Tailormade solutions with

- **4 controller types**
- **3 extension types for**
- **Stand alone and**
- **Master Slave operation**
- **Up to 240 valves**

ENERGY AND ENVIRONMENT

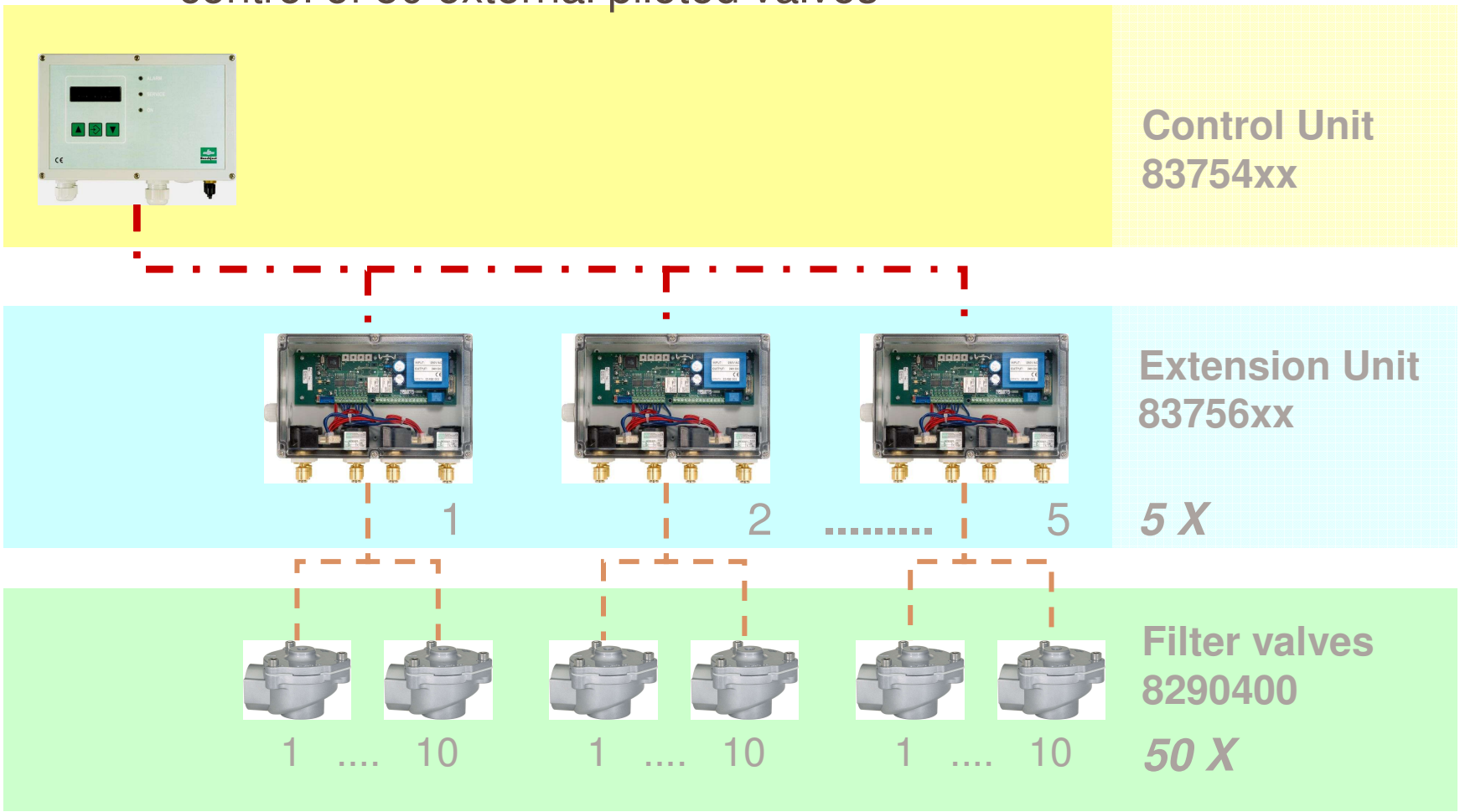
APC – Product range



ENERGY AND ENVIRONMENT

APC – Product range

- control of 50 external piloted valves



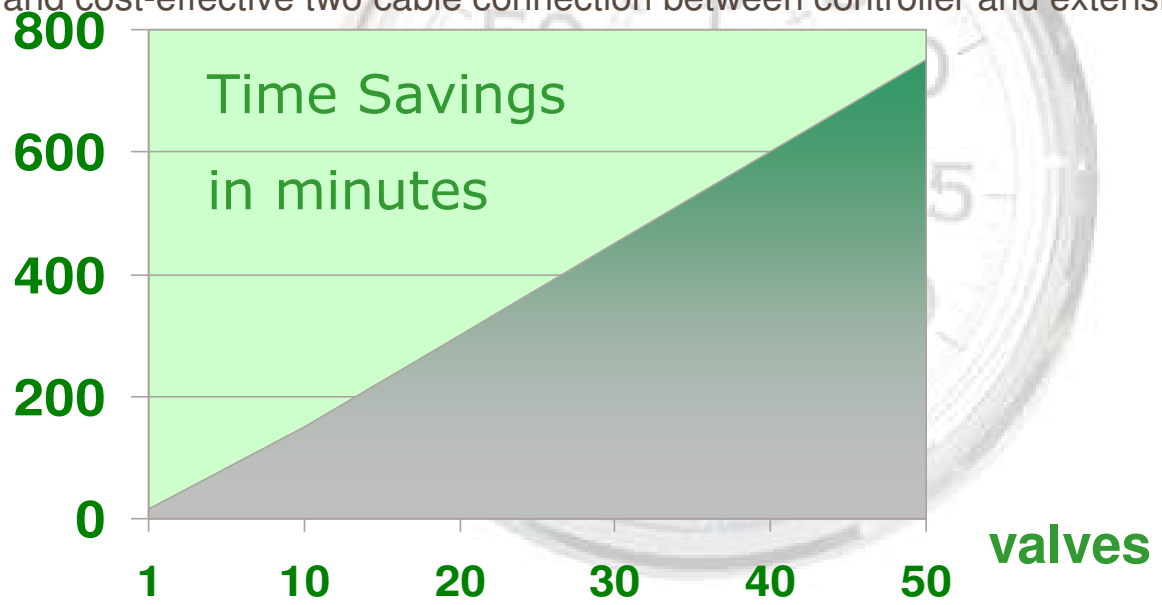
ENERGY AND ENVIRONMENT

APC – Product range

- Time and cost savings **(example for 50 valves)**
- (savings of 12 to 15 min. per valve)

  by

  - pre-assembled pilot boxes
  - easier and cost-effective two cable connection between controller and extensions



Steel Industry (Largest application)

-Material System
  Ore-smash
  Sieve
  Belt conduction
-Ore-sintering
-Iron refining
-Steel refining
-Steel rolling
-Ferroalloy
-Coking
-Lime

-Blast furnace
-Blast Furnace tapping
-Molten Iron pretreatment
-Cast iron machinery
-Converter dust cleaning process
-Electric furnace of Steel refining

Basically each steps of production in steel industry could apply bag house dust filtration equipment technology

Cement Industry (2nd Largest application)

-Smashing machine
-Grinding machine
-High potency powder picking machine
-Feeding
-Material warehouse
-Top of warehouse
-Bottom of warehouse
-Packing system
-Drying machine
-Drying grinding
-Coal grinding
-Cooling
-Standing Cave

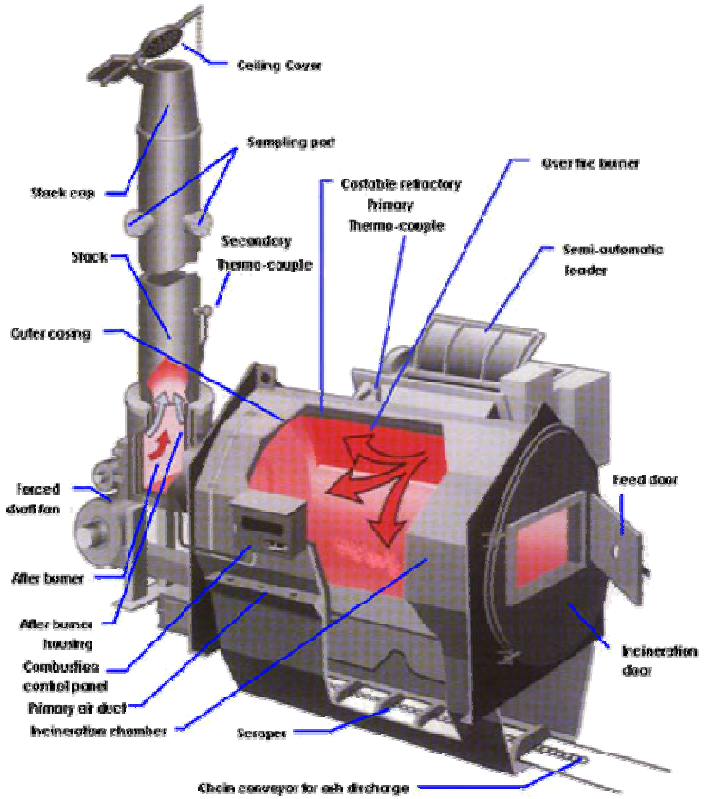
Aluminum Electrolysis/Aluminum Oxidation

Electrolytic Bath

Power Industry

-Coal-Burning Boiler
-Power Generating System
-Heat Power system
-Heating System
-Industrial Boiler

Incinerator



Waste Burning Power Industry

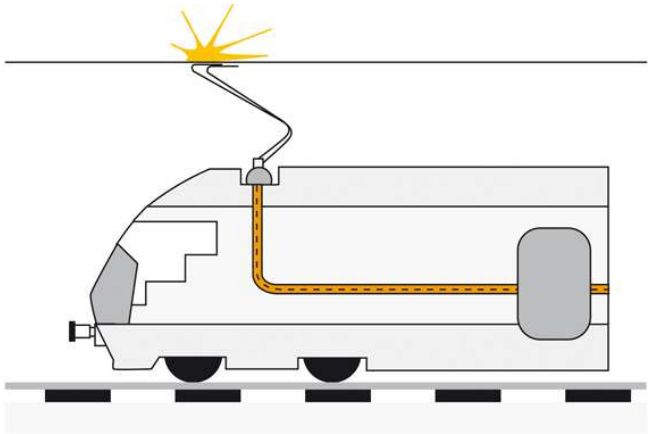
Waste Burning Furnace

Feed/Grain production and process industry

Large Scale Grain Storage Warehouse
Cleaning System for Grain Transportation
Cleaning System for Ventilation system
Smoke Steam System
Vacuum Cleaning System
Compressed Air System

Railway Application

Filter valves are used for the Chinese Railway!



ENERGY AND ENVIRONMENT

NORGREN FLUID CONTROLS

Thank you for your attention!