

KSI ECOCLEAN APF

Compressed Air Filtration



Rev 03_1222_CAN

High performance filtration and separation for processing of compressed air and compressed gases in industrial supplier quality



High quality through manufacturer competence

KSI develops and manufactures compressed air filters and filter elements. This ensures complete control to ensure certified KSI industrial equipment quality. Our compressed air treatment components exceed customer expectations. Many years of cooperation with specialists in the market, research institutions as well as our internal development work ensure continuous improvement and technological advancement.

The KSI ECOCLEAN approach

The combination of operational safety and energy efficiency in one product – this is the **KSI ECOCLEAN** approach, perfectly implemented also for high-performance filter elements.

The KSI ECOCLEAN APF | APE Plus-Effects +++

- + up to **55 %** less differential pressure loss
 - ▶ significantly reduced energy requirements and thus significantly reduced energy costs
- + **NEW:** high-density deep-bed pleating, made possible by new pleating machines, narrower pleating and new filter medium
 - ▶ approximately 250% larger filtration surface compared to a conventional pleated element
 - ▶ about 25% larger filtration surface compared to a conventional deep-bed pleated element

The significant reduction in flow velocity within the filtration medium makes the APF series the market leader in efficiency and lowest pressure drop.

Distributed by





A World Powered by Clean Energy

By providing both high-performance and innovative technological solutions for the purification of renewable gas and by offering a wide range of equipment for the conditioning, compression, and filtration of air and gas, Ivys is part of the great line of companies aiming to decarbonize the planet. A sustainable development model that integrates economic growth with social and environmental responsibility.

Our slogan, "Purely Driven," reflects our vision of a cleaner planet, our continued search for more efficient solutions, and our dedication to building an organization of excellence together that stays true to its values.

Industrial Compressed Air and Gas Treatments are at the Core of Ivys' Technology

At Ivys, we design, engineer, manufacture, and service industrial equipment for compressed air dedicated to a wide variety of industrial applications around the world.



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APF / ADVANCED
PREMIUM
FILTRATION



High quality through manufacturing competence

The increasing demands of modern production processes place ever higher demands on the quality of compressed air. By compressing ambient air the concentration of harmful substances like particles, moisture and oil mist rises and therefore jeopardizes compressed air applications in industry and many other fields. In addition, impurities such as fine dust, oil droplets, rust particles, scale, parts of sealing material etc. from the compressed air network are added – and of course condensate (water). Filtration technology of the **KSI ECOCLEAN** series protects pneumatic production plants, machines, tools, measuring instruments or products against contamination by means of high-performance filtration.

The heart of a compressed air filter is its filter insert (element), which must be optimally adapted to the respective requirement, as compressed air filters ensure, among other things, that solid particles, oil components, condensate, oil vapour, odours and much more are safely removed from the air or gas stream.



An enormous service simplification: the internal condensate drain, which is inserted into the filter housing with the adapter.

The KSI ECOCLEAN APF | APE Plus-Effects +++

- + highly efficient polyester drainage layer to improve performance and reduce differential pressure
 - anti-re-entry layer favors coalescence and drainage
- + cathodic dip coating (KTL) of the housing
 - prevents corrosion and thus offers optimal protection
- + housings made in aluminum die casting process
 - solid and at the same time very light filter housing
 - easy handling during installation and service
- + element optimized in length and diameter
 - lowest differential pressures and best filtration / separation at full flow capacity
- + coloured end caps for easy recognition of filter grades



The functional principle

Water separation

To ensure highest compressed air quality, a water separator should be installed before using a compressed air filter. This separates condensate using a simple physical principle: centrifugal force.

The installation of a water separator not only increases the quality of the compressed air, but also the service life of the downstream filter elements.

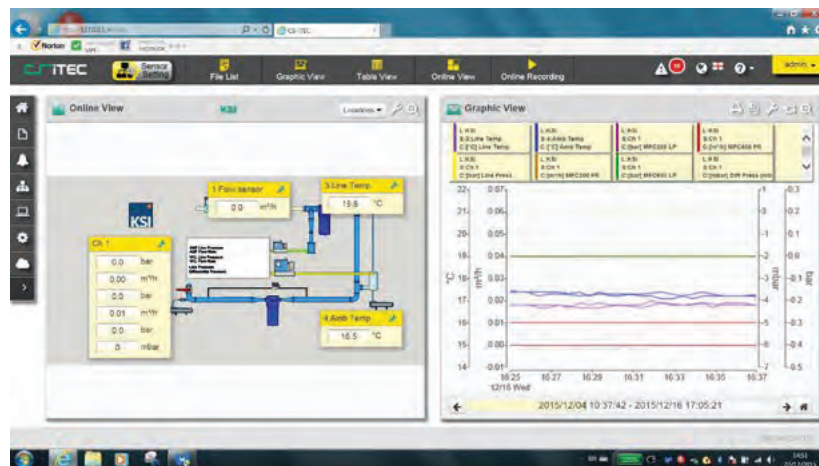
Compressed air filtration

Due to the arc-shaped compressed air inlet, the flow distribution in the filter is optimized, resulting in 75% less flow resistance than comparable elbow shapes.

Filtration takes place through the various layers of the filter element, which is passed through from the inside to the outside, thus removing the unwanted components. After the compressed air filter, high-quality compressed air is now ready for further use.

Lowest Differential Pressure at Highest Performance

Moisture, residual oil, particles: The performance of a compressed air system and the service life of the downstream components depend to a large extent on filtration. In recent years, we have continuously developed our **KSI ECOCLEAN** filters and filter elements in our own well-equipped test centre (photo) in order to further increase performance, reliability and operational safety without affecting competitive pricing.



Our KSI-owned test center provides us with all relevant data at the push of a button and offers the best conditions for product development.

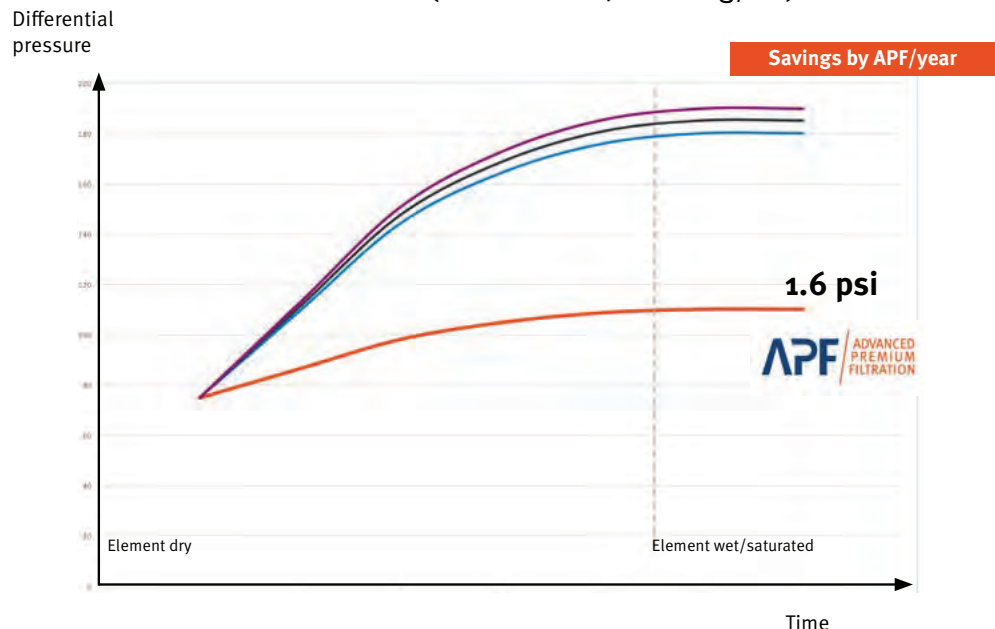
1.6 psi differential pressure thanks to high-density deep-bed pleating

Up to 55 % less differential pressure, significantly lower energy requirements and thus radically reduced energy costs – these out-standing properties of the **KSI ECOCLEAN APF** series are made possible by high-density deep-bed pleating.

Innovative pleating machines, tighter pleating and new filter media, in combination with new filter housings enable optimized flow distribution through the filtration layers, making the APF series the market leader in efficiency and mini-mum pressure loss.

Differential pressure by comparison

SMA Submicrofilter (0.01 micron, 0.01 mg/m³)



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Highest quality standards for most reliable operation

KSI ECOCLEAN compressed air filters meet the highest quality requirements and are extremely economical in operation, purchase and maintenance. The housing is made of die-cast aluminium, protected inside and outside with a cathodic dip coating (KTL) and powder-coated outside.

- + connections: 3/8" to 3"
- + capacities 35 - 1,300 cfm
- + protects production & processes
 - extended machine & system service life
- + minimizes operating costs ▸ saves energy
- + maximizes operational safety
 - protection against production or machine failure
- + best industrial equipment quality ▸ long service life
- + high service friendliness ▸ minimized service costs

Product range standard filtration

- | | |
|------------------------|--|
| Threaded filter | 14 types: APF35-38 with 35 cfm and 3/8" connection up to APF1300 with 1,300 cfm and 3" connection |
| Flanged filter | 8 types: APFF825-3-01 with 825 cfm and DN80 connection up to APFF7415-8-09 with 7,415 cfm and DN200 connection |
- Higher capacities available on request.

- + fast and safe installation ▸ fast commissioning
- + user-oriented filtration (25, 5, 1, 0.1 and 0.01 micron, as well as activated carbon) ▸ optimum choice
- + activated carbon, molecular sieve & hopcalite cartridges
 - individually combinable
- + best quality due to 100% leak test
- + **KSI ECOCLEAN** filters are equipped with an automatic condensate drain

Further filter types:



Cartridge Filters

Activated carbon cartridge
Molecular sieve cartridge
Catalyst cartridge



Flanged Filters

up to 7,415 cfm, DN 200
Flanged Water Separators
up to 4,950 cfm, DN 150



Water Separators

up to 1,300 cfm, 3"



High-Pressure Filters

725 psi – 7,250 psi



Medical Sterile Filters

Up to 765 cfm, 2"



Stainless Steel Filters

Sterile stainless steel filters and process filters



Vacuum Filters

Vacuum pump protection filters
Vacuum pump exhaust filters



Vacuum Filters

Medical vacuum filters

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Operational safety and product efficiency

- The **KSI ECOCLEAN** combines operational safety and economy in one product:
- through the clever design of the internal and external support frame up to 55% less differential pressure compared to conventional support cylinders
 - maximum filter area due to the specially optimized pleating ► for maximum surface filtration
 - special component adhesive securely fixes the end caps
 - plastic end caps prevent blooming and bacterial growth
 - filter drainage layer made of special fleece stabilizes the filter medium and protects against inflating effects and crack formation
 - high-performance filter fleece is chemically, mechanically and thermally (up to 248°F) resistant and technically silicone-free
 - filter depth enables highest filtration capacity



Compressed air quality with KSI ECOCLEAN filter elements according to ISO 8573.1*

Element Type	SMA					MF1					MFO					FF5					VF25					CA				
max. particle Ø [micron]																														
Compressed air class	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
max. residual oil content																														

*KSI ECOCLEAN high performance filter elements exceed ISO 8573.1 by far.



For KSI filter housings:
 CAK activated carbon cartridge
 MSK molecular sieve cartridge



APF-high performance element:
 high-density deep-bed pleating

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Scope of supply

Compressed air filter including:

KSI ECOCLEAN Filter housing incl. filter element

D150 Automatic condensate drain for APF35-38 - APF410

D200 Automatic condensate drain for APF470 - APF1300

Replacement element

Type	Capacity*	Dimensions (inch)				Connection	Grp.	Element	Qty	Grp.
	cfm	A	B	C	D					
APF35-38▶	35	9.21	0.71	3.15	2.95	3/8"	010	APE35▶	1	110
APF35-12▶	35	9.21	0.71	3.15	2.95	1/2"	010	APE35▶	1	110
APF55▶	55	9.21	0.71	3.15	2.95	1/2"	010	APE55▶	1	110
APF70-12▶	70	12.91	0.91	4.09	3.86	1/2"	010	APE70▶	1	110
APF70-34▶	70	12.91	0.91	4.09	3.86	3/4"	010	APE70▶	1	110
APF130-34▶	130	12.91	0.91	4.09	3.86	3/4"	010	APE130▶	1	110
APF130-1▶	130	12.91	0.91	4.09	3.86	1"	010	APE130▶	1	110
APF210▶	210	24.09	1.34	6.06	5.91	1"	010	APE210▶	1	110
APF320▶	320	24.09	1.34	6.06	5.91	1 1/4"	010	APE320-410▶	1	110
APF410▶	410	24.09	1.34	6.06	5.91	1 1/2"	010	APE320-410▶	1	110
APF470▶	470	29.29	1.77	7.72	7.68	2"	010	APE470▶	1	110
APF765▶	765	29.29	1.77	7.72	7.68	2"	010	APE765▶	1	110
APF885▶	885	28.82	2.20	8.46	8.27	2 1/2"	010	APE885▶	1	110
APF1300▶	1300	35.39	2.20	8.46	8.27	3"	010	APE1300▶	1	110

*calculated at 14.5 psi (abs.) and 68°F at 101.5 psi working pressure

▶ = filtration grade

Example order code for APF55 with 1 micron efficiency: APF55MFO

With flanged connection:

Type	Capacity*	Dimensions (inch)					Connection	Grp.	Element	Qty	Grp.
	cfm	A	B	C	D	E					
APFF825-3-01 ▶	825	34.33	4.57	14.17	11.22	20.08	DN 80	011	APE825 ▶	1	110
APFF1685-3-02 ▶	1,685	45.35	6.97	21.65	15.94	20.08	DN 80	011	APE825 ▶	2	110
APFF1685-4-02 ▶	1,685	45.35	6.97	21.65	15.94	20.08	DN 100	011	APE825 ▶	2	110
APFF2475-4-03 ▶	2,475	45.35	6.97	21.65	15.94	20.08	DN 100	011	APE825 ▶	3	110
APFF3300-6-04 ▶	3,300	48.11	8.15	24.41	18.11	21.26	DN 150	011	APE825 ▶	4	110
APFF4950-6-06 ▶	4,950	51.85	8.78	26.77	22.83	24.65	DN 150	011	APE825 ▶	6	110
APFF6590-8-08 ▶	6,590	67.17	11.34	31.50	28.15	29.92	DN 200	011	APE825 ▶	8	110
APFF7415-8-09 ▶	7,415	67.17	11.34	31.50	28.15	29.92	DN 200	011	APE825 ▶	9	110

*calculated at 14.5 psi (abs.) and 68°F at 101.5 psi working pressure

▶ = filtration grade

Example order code for APFF150-04 with 0.01 micron efficiency: APFF150-04SMA

Other connections and capacities on request

Correction factors

Working pressure	psi	29	44	58	73	87	101	116	131	145	160	174	189	203	218	232
factor		0.38	0.50	0.63	0.75	0.88	1.00	1.12	1.25	1.37	1.49	1.62	1.74	1.86	1.98	2.10






Multiply the capacity of the filter with the correction factor in the table above. Example for capacity of Type APF55 at 145 psi: capacity nominal (55 cft/min) x factor (1.37) = capacity corrected (75.35 cft/min).



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Specifications	25 	5 	1 	0.1 	0.01 
	VF25	FF5	MFO	MF1	SMA
Particle removal	25 micron	5 micron	1 micron	0.1 micron	0.01 micron
Residual oil content at 68°F	10 mg/m³	5 mg/m³	0.5 mg/m³	0.1 mg/m³	0.01 mg/m³
Differential pressure dry*	0.7 psi	0.7 psi	0.8 psi	0.9 psi	1.1 psi
Diff. pressure wet. saturated*	0.7 psi	1.1 psi	1.2 psi	1.3 psi	1.6 psi
Max. working pressure	APF35-38 - APF765: 232 psi APF885: 195.75 psi APF1300: 152.25 psi				
Max. temperature	Elements: 248°F				
Min. temperature	34°F				
Housing material	Aluminum, inside and outside cathodic dip-paint coating				
Colour	blue powder coated / RAL 5010				

Specifications	1 	0.01 
	DMF	DSF
Particle removal	1 micron	0.01 micron
Differential pressure*	0.8 psi	1.1 psi
Max. working pressure	APF35-38 - APF765: 232 psi APF885: 195.75 psi APF1300: 152.25 psi	
Max. temperature	Housings: 248°F · Elements: 248°F	
Min. temperature	34°F	
Housing material	Aluminum, inside and outside cathodic dip-paint coating	
Colour	blue powder coated / RAL 5010	

Specifications	CA
Residual oil content at 68°F	0.003 mg/m³
Differential pressure*	1.5 psi
Max. working pressure	APF35-38 - APF765: 232 psi APF885: 195.75 psi APF1300: 152.25 psi
Max. temperature	Housings: 248°F Elements: 122°F; recommended: 77°F
Min. temperature	34°F
Housing material	Aluminum, inside and outside cathodic dip-paint coating
Colour	blue powder coated / RAL 5010

* only valid for threaded filters



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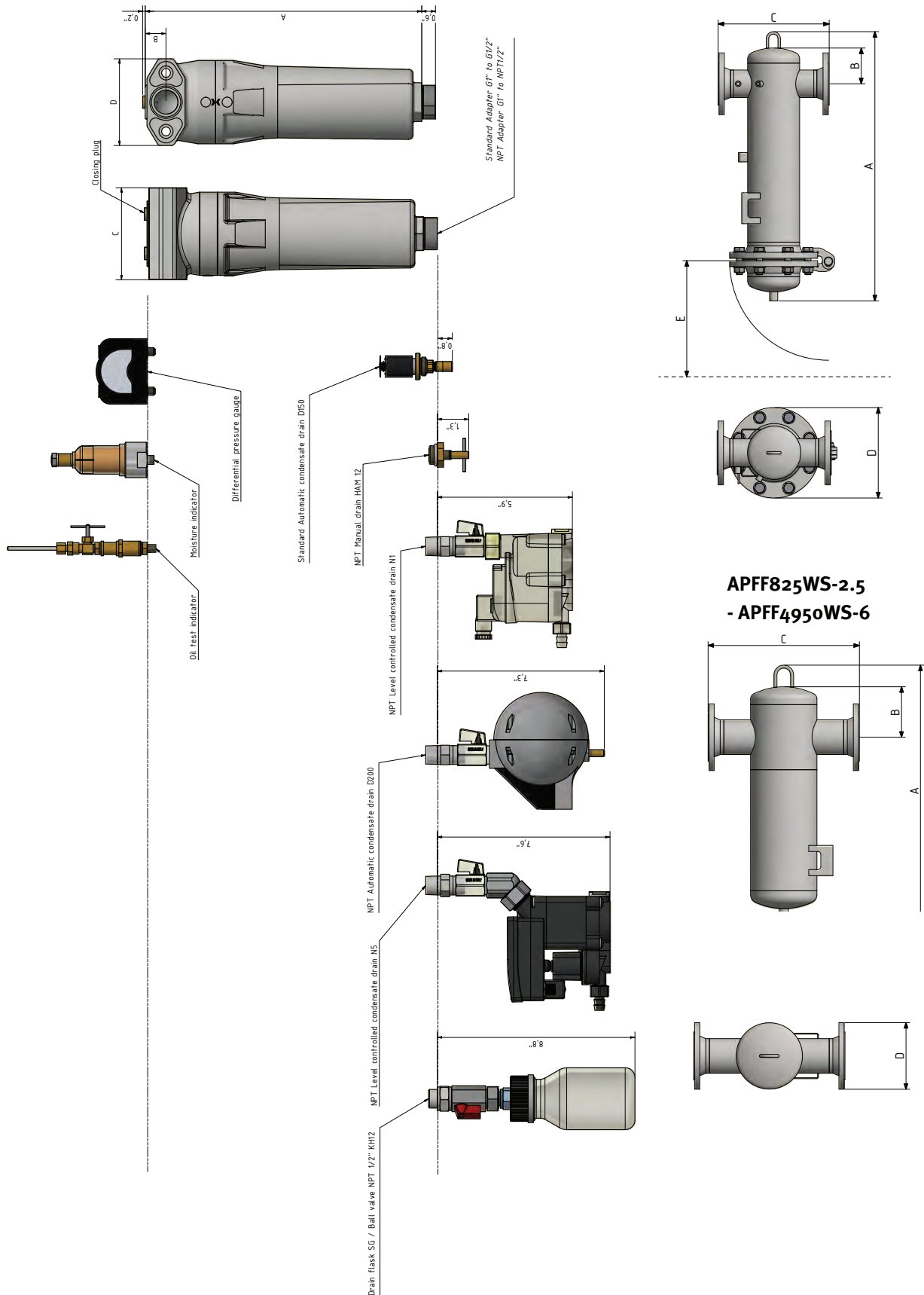
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Dimensional Drawing

APFF825-3-01 - APFF7415-8-09



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Approvals for pressure equipment

EU	Approval for fluid group 2 according to Pressure Equipment Directive 2014/68/EU, module B+D (category IV)
North America	CRN (certificates on request)

Quality assurance

Development/production	DIN EN ISO 9001
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Air purity class according to ISO 8573-1:2010

Solid particles	vary by filter element, see page 7
Moisture (gaseous)	vary by filter element, see page 7
Total oil	vary by filter element, see page 7

Options



Differential pressure indicator



Potential-free, digital differential pressure manometer



Moisture indicator



Oil indicator



Compressed air heater



Filter connection set



Wall mounting incl. filter connection set

Condensate drain



automatic drain D150



automatic drain D200



level-controlled condensate drain **KONDRAIN** KN350 (option for **KSI ECOCLEAN** standard filter)



manual drain HAM12, standard in CA activated carbon filters and in all cartridge filters

Service

WE SUPPORT YOU FOR ALL YOUR
EQUIPMENT NEEDS!

Ivys is committed to providing you with top-quality services and a complete range of replacement parts, and spares for your compressed air and gas equipment of all makes and models.

- ◆ Fully certified technicians on call
- ◆ Onsite commissioning
- ◆ Preventative maintenance
- ◆ Servicing and upgrading
- ◆ Replacements and spares for all makes and models

AFTERMARKET SERVICES

- ◆ Custom Service/Maintenance Contracts
- ◆ Desiccants
- ◆ Parts — Filters, Separators, Elements, Drains, Hygrometers, Probes
- ◆ Training — Workshops, Webinars, Certification



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our website at **ivysads.com**



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📍 QUEBEC

Head Office and Manufacturing Division

730 Industriel Boulevard
Blainville, Quebec J7C 3V4
CANADA

☎ 450-979-8700 📠 1-877-469-3232

Industrial Division

1120 Michele-Bohec Boulevard, Suite 100
Blainville, Quebec J7C 5N5
CANADA

☎ 450-979-8700 📠 1-877-469-3232

📍 ONTARIO

Ontario Head Office

60 Haist Avenue, Unit 1
Woodbridge, Ontario L4L 5V4
CANADA

☎ 905-850-9888

Guelph Office

5477 Highway 6 North
Guelph, Ontario N1H 6J2
CANADA

☎ 519-837-0450