

TECHNICAL GUIDE

## Self-dehydrating breathers type eSDB





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# Application

Technology	Condition Based	Condition Based	Condition Based	Condition Based
eSDB type	eSDB XS	eSDB S	eSDB M	eSDB L
Application				
Tap-changers	●	-	-	-
Arc suppression coil (Petersen coil)	●	-	-	-
Air-filled cable boxes	●	-	-	-
Traction transformers	●	-	-	-
Network transformers ≤ 60 MVA	-	●	-	-
Network and generator step-up transformers > 60 MVA ≤ 200 MVA	-	-	●	-
Generator and network intertie transformers > 200 MVA	-	-	-	●
Phase shifting transformers ≤ 60 MVA	-	●	-	-
Phase shifting transformers > 60 MVA ≤ 200 MVA	-	-	●	-
Phase shifting transformers > 200 MVA	-	-	-	●
Shunt reactors ≤ 60 Mvar	-	●	-	-
Shunt reactors > 60 Mvar ≤ 200 Mvar	-	-	●	-
Shunt reactors > 200 Mvar	-	-	-	●
HVDC transformers	-	-	-	●
Furnace transformers	-	-	-	●
Cavern transformers	-	-	-	●
Quantity of oil	≤ 40t	≤ 40t	> 40 ≤ 80t	≤ 100t

# Technical data

Type	Power consumption <sup>(1)</sup>	Silica gel (main tank)	Weight
eSDB XS	320 W	1.5 kg / 3.3 lb	14 kg / 30.9 lb
eSDB S	320 W	1.5 kg / 3.3 lb	15 kg / 33.1 lb
eSDB M	640 W	2.5 kg / 5.5 lb	20 kg / 44.1 lb
eSDB L	640 W	3.0 kg / 6.6 lb	22.5 kg / 49.6 lb

Comem eSDB	Technical data		
<b>Material</b>	All the external part are resistant to transformer oils, salt fog and UV rays – Aluminum and stainless steel <sup>(1)</sup>		
<b>Four types of installation environment</b>	Indoor/Outdoor/Tropical proof Offshore	Corrosion class: C5-Medium Corrosion class: C5-High / CX	Grey RAL 7035 (on request)
<b>Standard</b>	IEC 60076-22-7		
<b>Ambient temperature</b>	From -40 °C to 80 °C (from -40 °F to 176 °F)		
<b>Degree of protection</b>	IP55 according to EN 60529		
<b>Degree of protection of terminal box</b>	IP65 according to EN 60529		
<b>Ventilation valve</b>	To prevent the formation of condensation		
<b>Desiccant</b>	Colorless, non-poisonous silicagel; amount according application table above		
<b>Cable glands</b>	3 x M25x1.5		
<b>Functional test</b>	Standard		
<b>Overvoltage protection</b>	Standard (replaceable varistor and fuse)		
<b>Heating element protection</b>	Standard (replaceable fuse)		
<b>Redundancy</b>	Double feedback signal - Humidity sensor and load cell (for M & L types)		
<b>Display</b>	User-friendly – Quick access menu		
<b>Flange type</b>	DIN or EN flange		

(1) For critical environmental conditions, please contact us: [customerservice@it.comem.com](mailto:customerservice@it.comem.com)

# Technical data

## Power supply<sup>(1)</sup>

Rated Voltage	From 115 to 230 V ac/dc $\pm$ 10% 50/60 Hz
Current consumption	Max 100 mA (during normal operation) Maximum current during regeneration < 3 A (during regeneration)
Heating element insulation	2.0 kV 50/60 Hz, 1 min
External protection	Automatic circuit breaker 16 A – 20 A, characteristic: C – K – Z

## Signal contacts<sup>(1)</sup>

Braking capacity (relays on the electronic card)	Voltage	Current	Braking capacity	
	230V AC	2A	500 VA	cos $\Phi$ >0,5
	30/110/220V DC	0,83/0,23/0,11 A	500 VA	L/R<40 ms
Dielectric strength of contacts	Between contacts and ground: 2kV (60 sec)			
	Between contacts in open position: 1kV (60 sec)			
Configuration	Standard		Special	
	1 x change over contact: POWER FAILURE (terminals 22-24-21 – Relay 2) 1 x change over contact: SYSTEM FAILURE (terminals 12-14-11 – Relay 1)		1 x normally closed contact: POWER FAILURE (terminals 22-21 – Relay 2) 1 x change over contact: HEATER ON (terminals 12-14-11 – Relay 1)	

## Outputs<sup>(1)</sup>

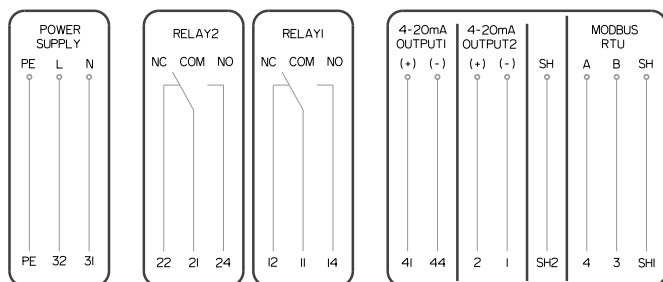
Analog outputs	2 x 4 – 20 mA (Max 30 m / 98 ft)
Digital outputs	Modbus RTU – Serial port RS485 (Max 30 m / 98 ft) Modbus TCP/IP – Ethernet port Data logger – USB port

## Recommended wires<sup>(1)</sup>

Power supply	14 AWG
Relay	18 AWG
4-20 mA	2 x 18 AWG (shielded twisted cable)
Modbus RTU	2 x 18 AWG (shielded twisted cable)
Modbus TCP/IP	Category 5e straight cable

(1) For more information contact us: [customerservice@it.comem.com](mailto:customerservice@it.comem.com)

# Electrical scheme and Status indicators



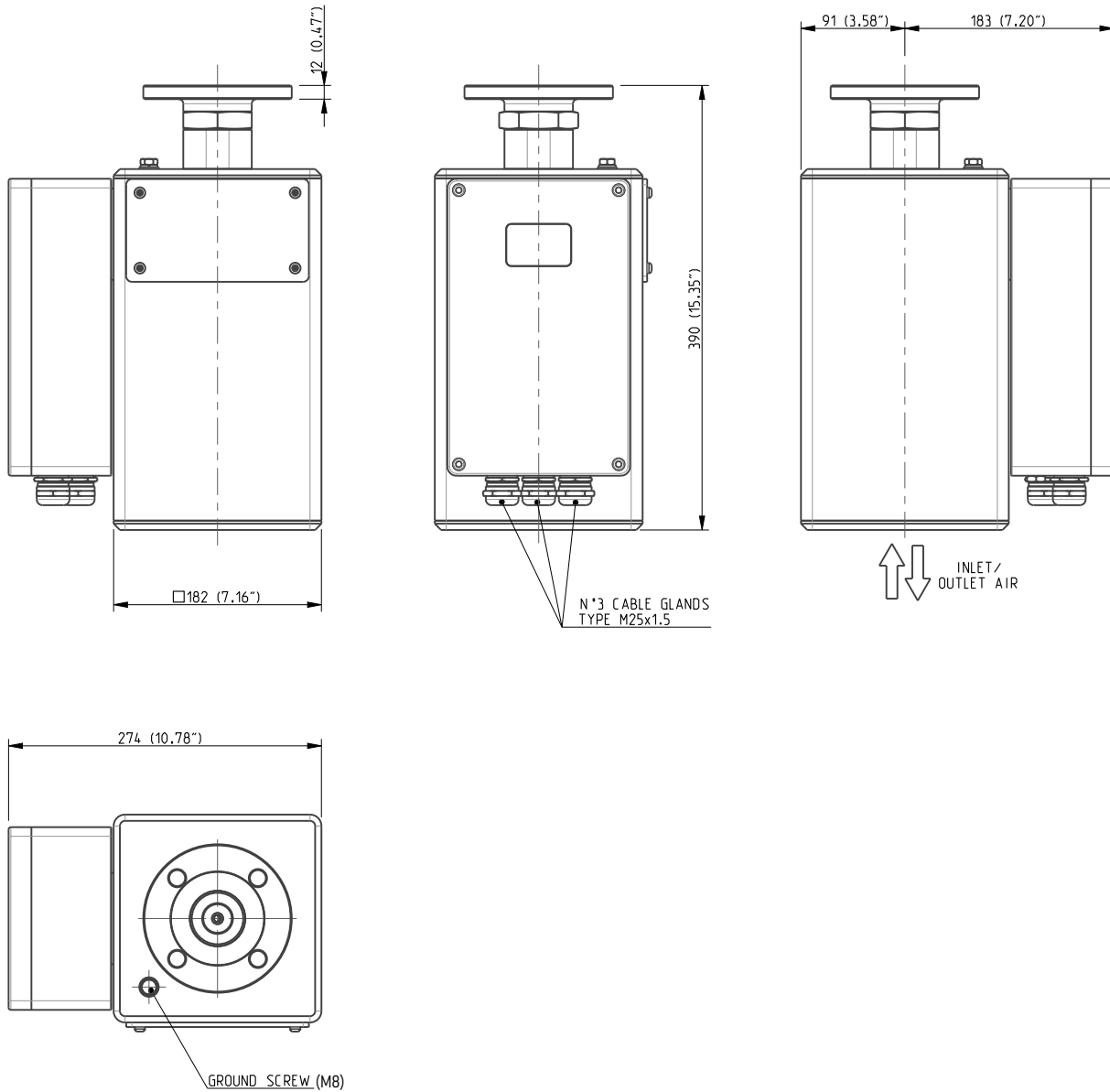
\* In case of DC power supply, 32 or L' corresponds to the positive "+", 31 or N" corresponds to the negative "-".

	Idle - Green
	Warning - Yellow (Fixed tank 1, Blinking tank 2)
	Drying - Yellow (Fixed tank 1, Blinking tank 2)
	Cooling - Yellow (Fixed tank 1, Blinking tank 2)
	USB active - Blue
	Electronic board failure - Red
	Heater failure - Red
	Solenoid valve Failure - Red
	Drying failure - Red
	Sensors Reading - White

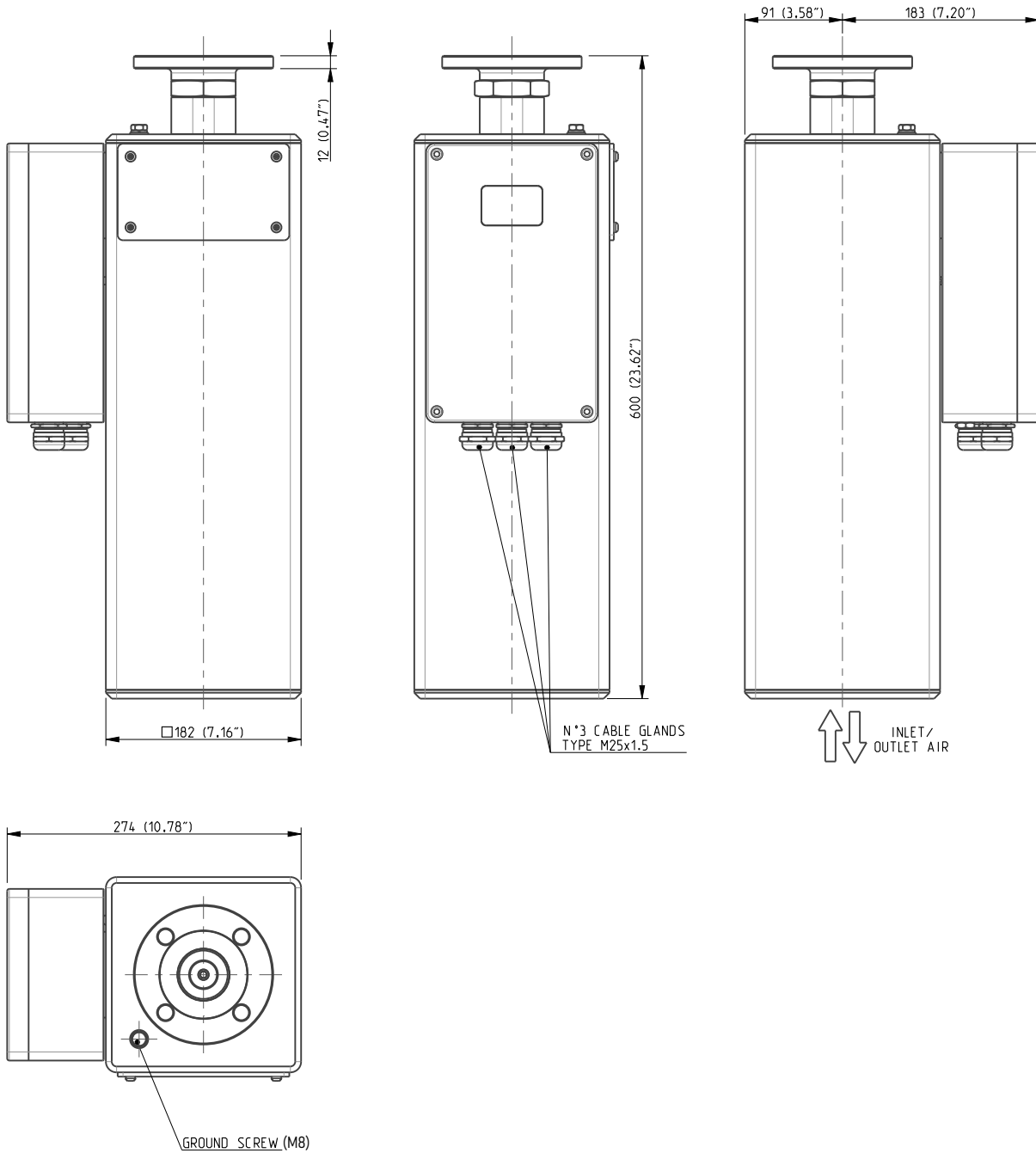
For more information contact us:  
[customerservice@it.comem.com](mailto:customerservice@it.comem.com)

# Dimensions

## eSDB XS/S

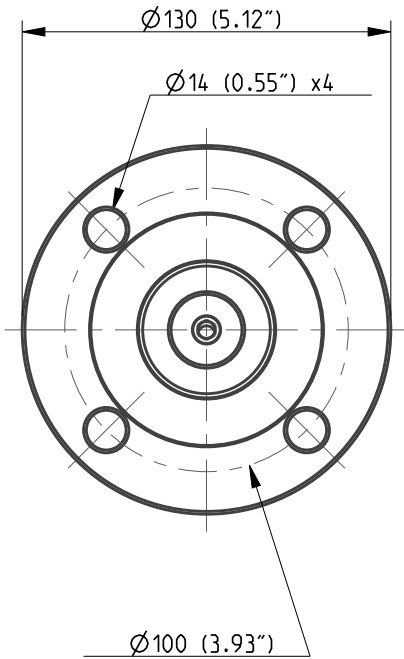


eSDB M/L

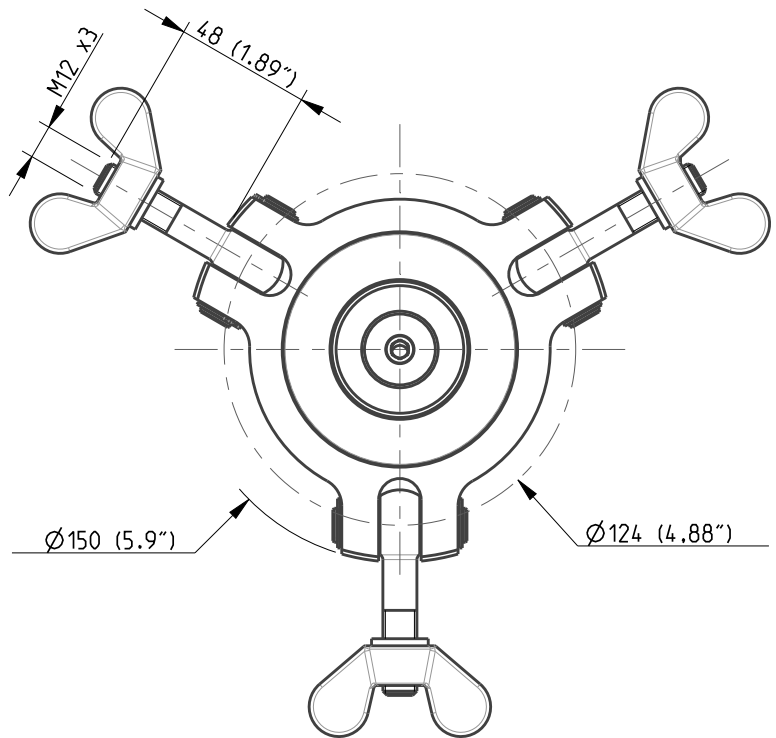


# Dimensions

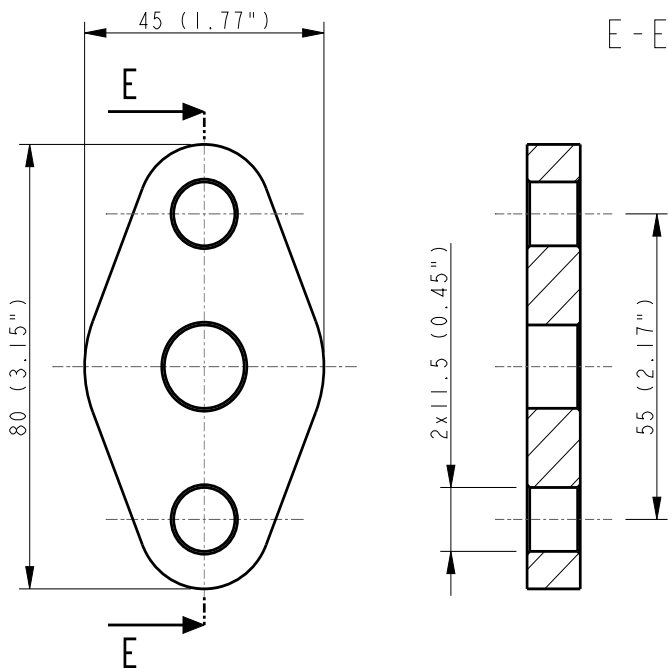
DN40 flange - EN 1092-1



DIN flange - DIN 42 562



DIN flange - DIN 2558



For further information or clarification, please contact our support team at: [customerservice@it.comem.com](mailto:customerservice@it.comem.com)

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# Order sheet

Date	
Rev.	
Customer reference	

**Type**

<input type="checkbox"/>	eSDB XS
<input type="checkbox"/>	eSDB S
<input type="checkbox"/>	eSDB M
<input type="checkbox"/>	eSDB L

**Flange**

<input type="checkbox"/>	EN flange
<input type="checkbox"/>	DIN 42562 flange
<input type="checkbox"/>	DIN 2558 flange (only eSDB XS/S)

**Corrosion protection class**

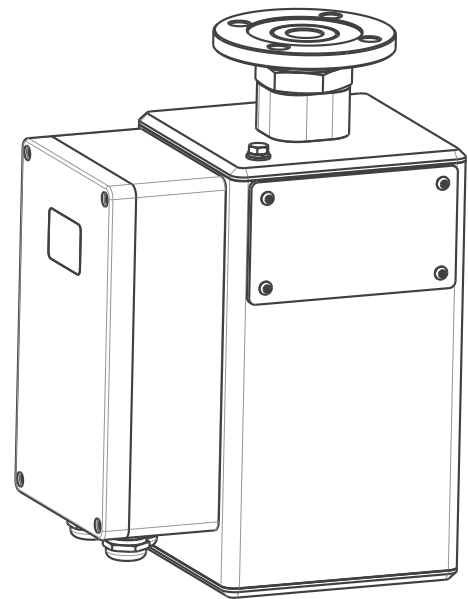
<input type="checkbox"/>	C5-Medium (not paintable)
<input type="checkbox"/>	CX acc.to 12944 (RAL 7035)

**Communication**

<input type="checkbox"/>	Standard (2xRelay)
<input type="checkbox"/>	Special (2xRelay, 2x4-20 mA, Modbus RTU, Modbus TCP/IP, Data logger)

**Electrical scheme**

<input type="checkbox"/>	Standard (Power failure – System failure)
<input type="checkbox"/>	Special (Power failure – Heater on)



Notes: For different configuration / options, please contact us: [customerservice@it.comem.com](mailto:customerservice@it.comem.com)

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