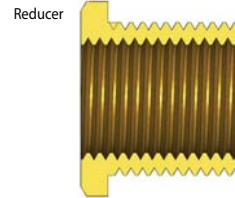
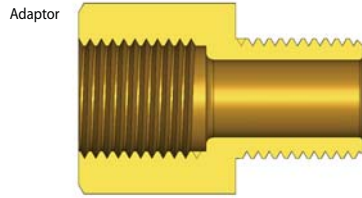


Adaptors and Reducers Type: 476

Flameproof Exd & Increased Safety
Exe Certified ATEX



ADAPTOR AND REDUCERS SELECTION TABLE

		Male Thread															
		Metric								NPT*							
		M16	M20	M25	M32	M40	M50	M63	M75	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Female Thread	Metric	M16															
		M20															
		M25															
		M32															
		M40															
		M50															
		M63															
		M75															
	NPT*	1/2"															
		3/4"															
		1"															
		1 1/4"															
		1 1/2"															
		2"															
2 1/2"																	
3"																	

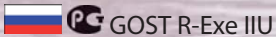
All dimensions in millimetres (except * where dimensions are in inches). All metric threads are 1.5mm pitch as standard.

Application

- Provides a means of connection between the equipment and cable glands with dissimilar thread sizes or types.
- See technical section for installation rules and regulations.

Technical Data Group I

- Flameproof & Increased Safety Exde IIC M2.
- Certificate No's: Sira 06ATEX1240U.
- Suitable for use in Mines.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: IP66.
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 377.
- Alternative certification options available:



Ordering Information

Format for ordering is as follows:

Adaptor Type	Male Thread	Female Thread
M476/1A	M32	M40
Reducer Type	Male Thread	Female Thread
M476/1	M32	3/4"

Features

- Manufactured in Brass (standard), Nickel Plated Brass, 316 Stainless Steel or (Aluminium) - none mining only.
- Brass NPT entries are nickel plated as standard.
- Available for both Group I & Group II applications.

Technical Data Group II

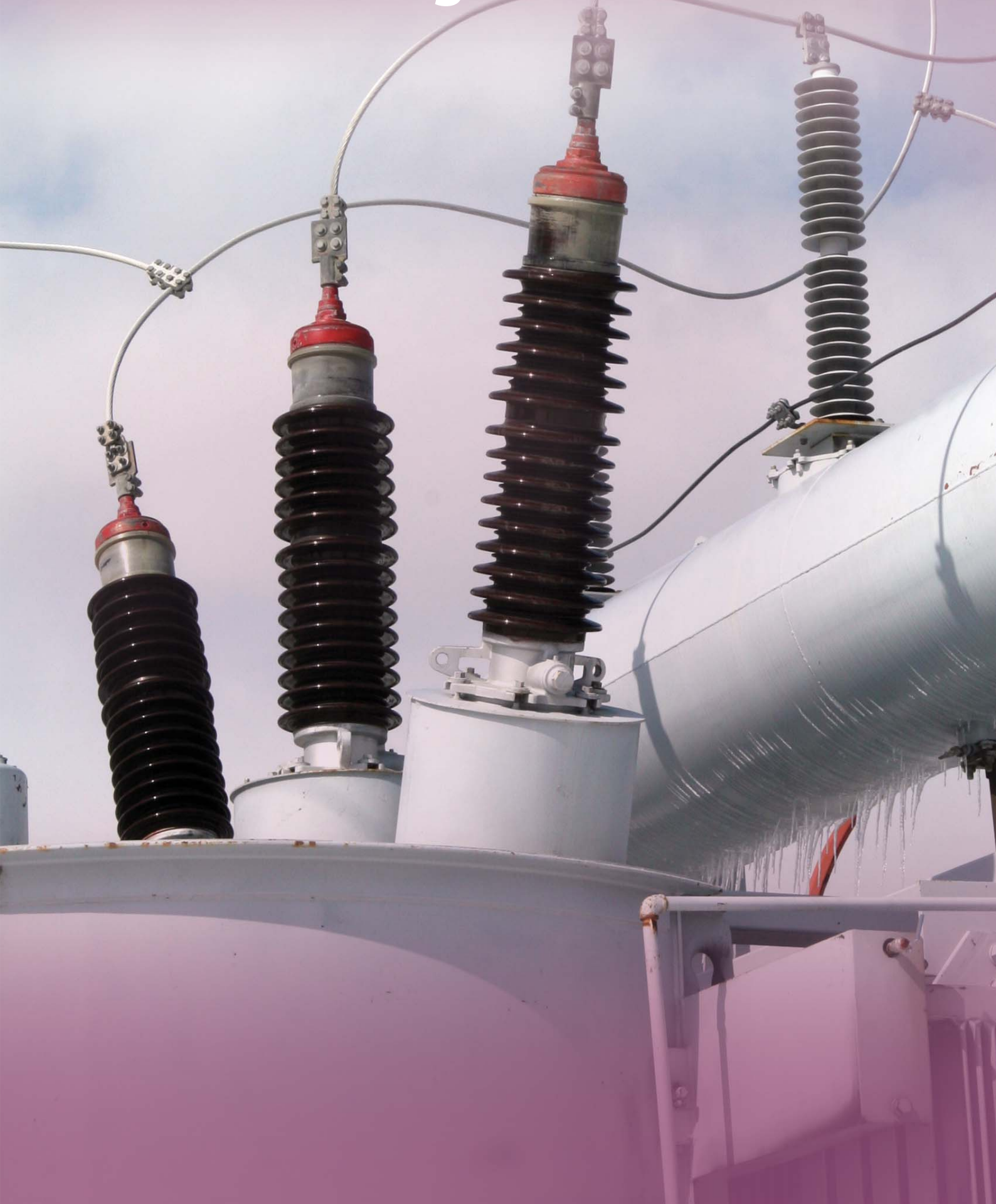
- Flameproof & Increased Safety Exde IIC II 2 GD IP66.
- Certificate No's: Sira 06ATEX1240U.
- Suitable for use in Zone 1, Zone 2, Zone 21, Zone 22 and in Gas Groups IIA, IIB and IIC.
- Construction and Test Standards: IEC/EN 60079-0, IEC/EN 60079-1 and IEC/EN 60079-7.
- Ingress Protection: IP66.
- Operating Temperature Range: -60°C to +80°C.
- Assembly Instruction Sheet: AI 377.

Ordering Information

Format for ordering is as follows:

Adaptor Type	Male Thread	Female Thread
476/1A	M32	M40
Reducer Type	Male Thread	Female Thread
476/1	M32	3/4"

Desiccant Breather Range



HBP & HB Types

Transformer Breather
Units & Accessories

Desiccant Breather Range

Why Choose Hawke?

When specifying products used in critical electrical supply applications you need the utmost confidence, Hawke has many years of experience in the manufacture and supply of Desiccant Breathers to the electrical supply industry where control of humidity ingress is essential for the safe operation of large transformers. Hawke products comply with the latest international quality standard (EN ISO 9001).



The Purpose of a Hawke Desiccant Breather

The purpose of a Hawke Desiccant Breather is to effectively remove water vapour from air entering Transformers or similar equipment, where without such controls reduced efficiency or possible failure could result. Therefore, it is imperative that the level of humidity in the air space in the top of the conservator tank is kept to a minimum, to avoid any reduction in the effectiveness of the cooling/insulating medium. Temperature gradients can result in a change in the volume of the cooling medium and/or air space. The Hawke Desiccant Breather provides the customer with the most effective and reliable method of preventing moisture entering the equipment during such changes.

Why Choose A Hawke Desiccant Breather?

Hawke Desiccant Breathers are made up of four basic parts, making assembly as simple as possible and therefore keeping servicing time down to an absolute minimum.

Hawke Breathers are filled with a Desiccant gel which changes colour from orange to clear as it absorbs water vapour. Attached to every Hawke Breather is a Desiccant colour change indicator, which allows easy assessment of the breather's status. When the desiccant becomes saturated it can be reactivated or replaced, dependant on the type of breather.

The HB range of Desiccant Breathers have a strong metal shield giving maximum protection to the polycarbonate charge, spare charges are available on request.

Independent extensive testing of the oil seal has proved that it is more effective than mechanical seals. Making the Hawke Desiccant Breather the best on the market.

Principle of Operation

When the charge is screwed into the top casting, it automatically produces a seal, this method is also used to create a seal between the cartridge and the oil cup.

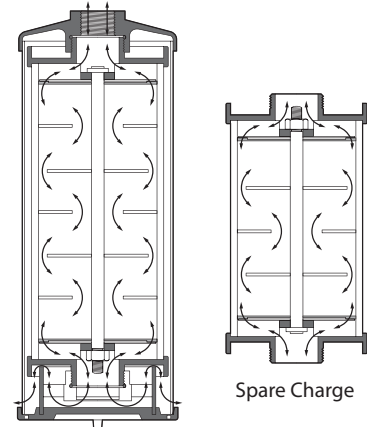
All threaded portions are enclosed, this eliminates the danger of corrosion.

The positioning of the annular baffles ensure that any air passing through the charge circulates through the maximum quantity of Desiccant gel. This eliminates the problem of the air "channelling" through the centre, hence giving a clear indication of the Desiccant state at the periphery.

The lower casting acts as an oil cup as well as a protective screen retainer.

Whilst the red line on the transparent tube gives a clear indication of the required oil level.

Principle of Operation



Complete Unit

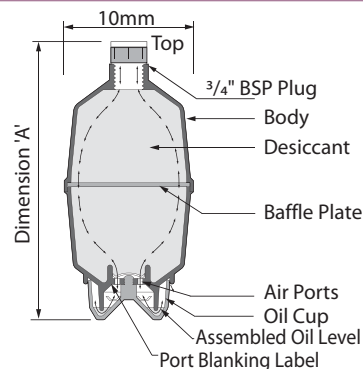
Spare Charge

HBP General Description

The HBP Desiccant Breather has been specially designed to provide an economical protection device for smaller transformers having a low oil content. The Breather body and oil seal cup are moulded in high strength polycarbonate, which offers mechanical strength and weather resistance, the transparent material also allows all round visibility of the Desiccant at a distance.

The design of the HBP Desiccant Breather allows the capacity to be increased for use on larger transformers. This is known as the HBP/2.

Hawke Desiccant Breather types HBP and HBP/2 are refillable.



HBP & HBP/2 TRANSFORMER BREATHERS

Ref No.	Transformer Total Oil Content Litres	Maximum weight of Desiccant Kg.	Length of Assembly Dimension "A"	Diameter of Charge Container	Length of Charge Container
HBP	Up to 1250	0.65	215	100	190
HBP/2	Up to 2500	1.00	310	100	290

All dimensions in millimetres (approximate).

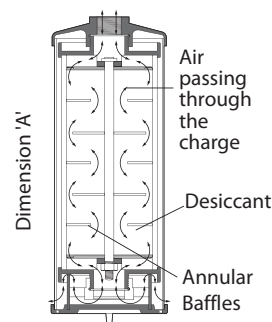
Full installation and maintenance instructions are supplied with each Hawke desiccant breather.

HB General Description

The HB Desiccant Breather is ideal for a large range of transformer sizes. The charge is constructed from high strength polycarbonate with the additional protection of a polythene coated metal screen, its identical die cast end plates are sealed in position to form a very strong unit.

Sizes 1,2,3 and 4 tapped to accept 3/4" B.S.P.P.

Sizes 5 and above supplied with standard hole positions to accept a flanged fixing to BS10 table D (1" pipe).



HB TRANSFORMER BREATHERS

Ref No.	Transformer Total Oil Content Litres	Maximum weight of Desiccant Kg.	Length of Assembly Dimension "A"	Diameter of Charge Container	Length of Charge Container
HB1	Up to 1115	0.70	230	105	170
HB2	From 1115 up to 2230	1.20	330	105	300
HB3	From 2230 up to 4455	2.40	530	105	470
HB4	From 4455 up to 11150	5.00	350	215	280
HB5	From 11150 up to 22230	8.50	500	215	430
HB6	From 22230 up to 33420	12.00	650	215	600
HB7	From 33420 up to 44550	15.00	800	215	730
HB55	From 33420 up to 44550	17.00	850	215	430
HB66	From 44550 up to 66840	24.00	1000	215	600
HB77	From 66840 up to 89120	30.00	1150	215	730
HB777	From 89120 up to 133680	45.00	1150	215	730

All dimensions in millimetres (approximate).

Full installation and maintenance instructions are supplied with each Hawke desiccant breather.

HB Types

Multiple Breather Units & Accessories

Desiccant Breather Range

Multiple Breather Units Types: HB55, HB66, HB77 & HB777

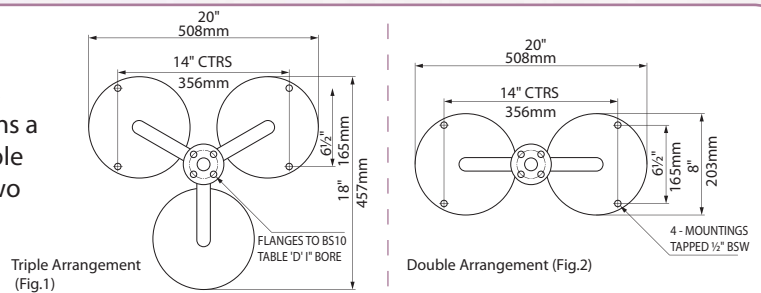
The design of the Hawke Desiccant Breather in its single unit form (i.e. HB2) has been limited to weights and dimensions which enable easy handling during initial installation and subsequent charge replacement. However, parallel arrangements are available for those situations where the oil volume of the transformer requires larger volumes of Desiccant gel.

Please see table on page 129 for more information.



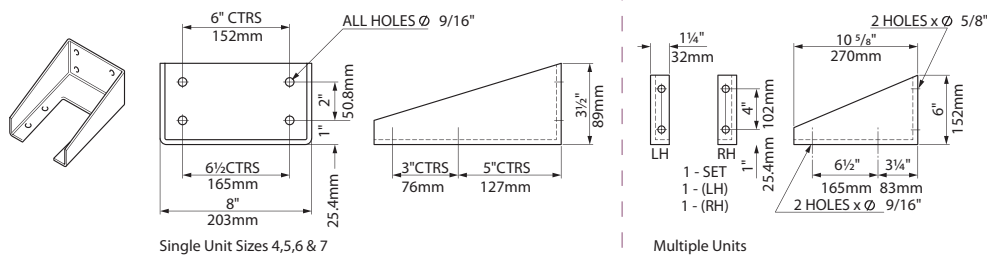
Where Breather charges are operated in parallel, it is essential that only one oil valve is used, this maintains a balanced air flow through each branch of the multiple arrangement. The pipework for the connection of two and three breathers in parallel are standard fittings.

See Fig. 1 and Fig. 2 for dimensional drawings.



All interconnecting pipework is polythene coated to provide protection where installations are located outdoors.

Accessories for Hawke Transformer Breather Units



Transformer Breather Dryer Unit

Hawke have designed a new, highly efficient, specialist drying unit that can be used on all HB products. This portable unit will dry out and recharge saturated charges. This exercise can be carried out 3 times prolonging the working life of each charge.

The unit comprises of :

- A (240 volt or 110 volt) Blower Motor complete with thermal protection.
- 1/2 Kw Heater element.
- Pressure release valve and air filter.
- Stainless Steel two way connecting pipework and manifold with adaptors accepting up to two breather charges.
- Substantial mild steel black enamel coated framework.

