

3M™ Versaflo™ Powered Air Turbo TR-800

Technical Data Sheet



Description

The 3M™ Versaflo™ Powered Air Turbo TR-800 is an IECEx certified belt-mounted air purifying device that can be used in certain potentially explosive atmospheres. When combined with a 3M approved headtop, it forms a power-assisted system for respiratory protection against particles, nuisance odours (where applicable) and gases and vapours. The TR-800 Powered Air Turbo can be used with the 3M™ Versaflo™ S-Series and M-Series headtops.

Features

- Approved to Zone 0 requirements so may be suitable for areas where potentially explosive atmospheres are expected and permanent in normal operations (see technical specifications for more information).
- Three user selectable flow rates
- Controlled airflow delivers steady flow as battery discharges or filter loads with particulates
- Display shows battery charge status and particulate loading status during use
- No user calibration of the turbo is required
- Electronic audible and visual alarm in case of low battery and/or low air flow
- Simple, intuitive, easy to use two-button operation
- Four filter options available:
 - P3
 - P3 plus nuisance level* organic vapours and acid gas which also offers protection against hydrogen fluoride up to 10 x Workplace Exposure Standard
 - A1P3
 - A1B1E1HgP3
- Lithium ion battery with LED to indicate charge status
- Two belt options:
 - Easy-clean belt
 - High durability belt
- Suitable for shower decontamination (IP54) when using filter cover and temporary submersion (IP67) when fitted with cleaning plugs.



Standards

When used as part of an approved 3M Respiratory system, the TR-800 Powered Air Turbo has been shown to meet the performance requirements of AS/NZS 1716:2012

IECEx

EN 60079-0:2011 – Explosive atmospheres, Equipment – General Requirements
EN 60079-11:2011 – Explosive atmospheres, Equipment protection by intrinsic safety “i”

EMC

EN 61000-6-4:2007+A1:2011 - Generic standards. Emission standard for industrial environments
EN 61000-6-2:2005 Generic standards. Immunity standard for industrial environments

Ingress protection

IEC 60529:1989+A1:1999+A2:2013 Degrees of protection provided by enclosures (IP Code)

RoHS

EN 50581:2012 Technical documentation for assessment of electrical/electronic products for RoHS

Safety in Mines Testing and Research Station (Simtars)
IECEX SIM 19.0013

* Nuisance level refers to concentrations below the Occupational Exposure Limit

Limitation

The 3M™ Versaflo™ Powered Air Turbo TR-800 should not be used in the following conditions:

- In atmospheres containing less than 19.5% oxygen
- Confined spaces (lack of ventilation)
- When the risk is considered to be immediately dangerous for life or health (IDLH)
- Where the contaminant concentration is above the Workplace Exposure Standard defined for the headtop used (see relevant user instructions for the headtop)

Specifications

3M™ Versaflo™ Powered Air Turbo

IECEx

Non-mining gas atmospheres (Group II)

EN 60079-11 Ex ia IIB T4 Ga

ia – intrinsic safety for Equipment protection level Ga

IIB – Gas apparatus group

T4 – Max. surface temperature 135°C (-20°C ≤ Ta* ≤ 55°C)

Non-mining dust atmospheres (Group III)

EN 60079-11 Ex ia IIIC 135°C Da

ia – intrinsic safety for Equipment protection level Da

IIIC – Dust apparatus group

135 °C – Max surface temperature (-20°C ≤ Ta* ≤ 55°C)

Outlet flow characteristics

- Manufacturer's Minimum Design Flow (MMDF) 170 l/min
- Nominal Standard flow = 185 lpm
- Nominal Mid Flow = 205 lpm
- Nominal High Flow = 225 lpm

Minimum battery duration (hours)**

Standard flow - 5.5 – 7.5
Medium flow - 4 – 6.5
High flow - 2*** – 5.5

Battery charge time

Less than 3.5 hours

IP rating

IP 54 (5 = dust protected, 4 = sprayed water from all directions) when using filter cover)
IP67 when fitted with cleaning plugs (6 = dust tight, 7 = temporary submersion to a depth of 1m).

Storage conditions

-30°C to +50°C < 90%RH

Operating temperature

-5°C to +55°C
Note: This is the operating temperature range for the 3M™ Versaflo™ Powered Air Turbo TR-802E when used as part of an AS/NZS 1716 compliant respirator.

Shelf life****

3M™ Versaflo™ Powered Air Turbo TR-800 and Filters = 5 years
Battery = 6 months (if unused beyond this period, batteries may not provide approximately 750 charge/discharge cycle equivalents during the first year of use while maintaining 80% of their original capacity)

Materials

Turbo body = Polycarbonate / Polydimethylsiloxane blend
Filter cover = Polyamide
Battery casing = Polycarbonate / Polydimethylsiloxane blend

Weight (including battery but excluding belt and filters)

Turbo = 1360g

*Ta defines the ambient temperature range within which the Temperature (T) class is defined, according to EN-60079-11

** Estimated system duration based on testing with a new battery and a new, clean filter at 20°C. Actual system duration may be extended or shortened depending on system configuration and environment.

*** To conserve battery power in high airflow setting, in some headtop/filter configurations, the Powered Air Turbo may automatically step down at this time to the medium airflow setting. If this occurs, a 4hr duration will be achieved. The step down feature can be overridden by the user by pressing the flow control button to move the airflow back to the high flow. The low battery alarm and low flow alarm will always operate as described in this user instruction. When either alarm sounds, users must immediately exit the contaminated area.

**** The shelf life as defined above remains an indicative and maximum data, subject to many external and non controllable factors. It may never be interpreted as a warranty.

Ordering Information

The TR-800 Powered Air Turbo is available to buy as:

3M Code	Model #	Description
70071732666	TR-819A	TR-819A IS PAPR Starter Kit including Turbo Unit, BT-30 hose, battery and TR-641A charger, TR-971 Air flow indicator and pre-filter
70071730900	TR-802E	PAPR Motor/Blower 1/CS
70071697117	TR-830	Battery, intrinsically safe, 1/CS (includes TR-838 battery attachment tool)
70071697133	TR-851	Filter latch assembly
70071697125	TR-838	Battery attachment tool

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Spare Parts

3M Code	Model #	Description
UU008996199	TR-6710ANZ	P3 Particulate Filter
UU008996207	TR-6820ANZ	P3 Particulate Filter plus nuisance level organic gases and vapours below WES (Workplace Exposure Standards) nuisance level acid gases below WES and hydrogen fluoride gas up to 10 x WES
UU008996215	TR-6310ANZ	A1P3 – Organic gases and vapours (bp > 65°C) and particulates
UU008996223	TR-6580ANZ	A1B1E1HgP3 – Organic gases and vapours (bp > 65°C), inorganic, acid gases, mercury vapour and particulates
70071622065	TR-6300FC	Filter cover for TR-6310ANZ Filter
70071622073	TR-6500FC	Filter cover for TR-6580ANZ Filter
70071618261	TR-6700FC	Filter cover for TR-6710ANZ Filter
70071622040	TR-6800FC	Filter cover for TR-6820ANZ Filter
70071618246	TR-6600	Pre-filter
70071618253	TR-662	Spark arrestor
52000053570	TR-641A	Single station battery charger kit
52000053588	TR-644A	4-station battery charger kit
52000053521	TR-626	High durability belt
78815045279	TR-627	Easy clean belt
XA007706618	BPK-01	Backpack
70071651692	TR-655	Backpack adaptor
AT019167745	TR-329	Braces
70071668076	TR-971	Air flow indicator
70071697133	TR-851	Filter latch assembly
70071618428	TR-653	Cleaning and storage kit



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