
Data Sheet: SE40 CBRN



Positive-pressure demand respirator for CBRN environments

Description

Fan-supplied, positive-pressure, breath-responsive demand respirator for CBRN (chemical, biological, radiological, nuclear) atmospheres. The respirator is microprocessor controlled and supplies positive pressure breathing air even at very hard work. The SE40 features in-mask communication, a comprehensive warning system, and a usage log which can be downloaded to a personal computer for further analysis.

Usage

Used for SCBA-level protection (with full face mask) in filtrable, non-IDLH atmospheres with an oxygen content suitable for human breathing. Intended for CBRN applications.

Face pieces

Full face mask in halo-butyl rubber with hard-coated polycarbonate visor and natural rubber head harness.

The face pieces contain no electrical parts, and feature an internal pressure sensor, internal non-electric microphone, and a warning light in the wearer's field of vision. (Electronics for pressure sensor, microphone and warning LED are contained within the fan unit.)

Regulator

- Flow capability of peak inhalation air flow in the inner ori-nasal mask of 400 l/min or higher
- Breath responsive: air supply continuously adjusts itself to user's air requirements
- 7 to 14 mbar supply pressure
- Easy service — no tools
- Tested for equivalent of 3 years' harsh conditions
- Acts as negative pressure filter respirator if the fan unit is not operating

Voice communication

All face pieces have an in-built microphone which connects through the fan unit to an external miniature amplifier/loudspeaker

Fan unit

- Single button operation
- Auto power-off when removing mask

- LED light indicators
- Com-port for loudspeaker or personal computer
- Brush-less DC motor
- Continuous monitoring of motor function
- Microprocessor controlled motor
- Demist mode provides the user rapid supply of extra air for 20 seconds that not only cools the user's face but also demists the visor of the full face mask

Chemical agent permeation resistance

SE40 with 125-CBRN1 filter tested on a breathing machine against distilled sulphur mustard (HG) and sarin (GB as per table below:

| Compound | Conc. (ppm) | B'thru (ppm) | Serv. life (min) |
|----------------|-------------|-----------------------------------|------------------|
| Ammonia | 2,500 | 12.5 | >15 |
| Cyanogen chl. | 300 | 2 | >45 |
| Cyclohexane | 2,600 | 10 | >15 |
| Formaldehyde | 500 | 1 | >45 |
| Hydr. cyanide | 940 | 4.7* | >45 |
| Hydr. sulphide | 1,000 | 5 | >45 |
| Nitr. dioxide | 200 | 1 (NO ₂) or 25 (NO)** | >15 |
| Phosgene | 250 | 1.25 | >45 |
| Phosphine | 300 | 0.3 | >45 |
| Sulph. dioxide | 1,500 | 5 | >15 |

*) Sum of HCN and C₂N₂

**) Nitrogen dioxide breakthrough is monitored for both NO₂ and NO. The breakthrough is determined by which quantity, NO₂ or NO, reaches breakthrough first.

User alarms

The user immediately receives both audible and visual alarms (through a siren and a warning light in the user's field of vision) upon a range of events, such as:

- Filter change required
- Low battery power
- Mask pressure dip
- Various other system alerts

Power supply

- 2-hour battery recharge
- Ni-Mh battery technology — no memory effect
- Approximately 4 hours' operation at medium work load
- Microprocessor controlled battery charger for long life and battery maintenance
- One battery supplied with unit

Data log

Software

Fan unit continuously records and time-stamps all vital system information, including:

- All alarms issued
- Total air volume drawn through the filters
- Power on/off
- Mask removed

NOTE: The use of the data log feature is completely optional, and is in no way necessary for the general operation of the SE40

Data log and real-time system monitoring software is included as a simple-to-use Windows application

Completely optional — see NOTE under 'Data log'

Computer interface

Standard serial port

Carry devices

The unit is worn on a back pack with padded shoulder straps and waist harness. The unit may also be worn on a conventional waist belt.

Weight

- SE40 with back pack, single battery and CBRN filters: 5.0 kg

CBRN components

- Exhalation valve shield
- Tychem F disposable breathing hose cover

Transport case

The unit is supplied with a robust canvas carry case for protection during storage and transport.

Warranty

The SE40 is supplied with a comprehensive warranty, covering the motor and the main circuit board for three years or 6,000 operating hours, whichever comes first. Other parts are covered for 12 months for manufacturing faults (not including wear and tear). Some exclusions apply.