

Product Overview

Aluminium EMC & dust filter ventilation panel consist of 3 layers of pleated aluminium woven mesh trapped between an expanded aluminium kick-plate then held in a rigid extruded aluminium mounting frame, The 3 layers of pleated wire mesh are separated by the pleats being of different height enabling the vent to have a high dust holding capacity. The vent panel can be used dry or air filter oil can be applied to the aluminium filter media to assist in dirt and dust retention.

The frame can be supplied in a range of sizes and profiles and panels can be treated with a variety of finishes to provide corrosion protection or improve conductivity.

Panels can be provided with additional EMI gasketing or environmental sealing if required.

Applications

Ventilation panels are designed for use in electronic enclosures where good air flow is required for cooling and ventilation but where EMC compliance and dust filtration must be ensured. Typical commercial applications are:

- Electronic Enclosures
- Air Conditioning Units
- Fan housings
- EMC Racks

Availability

A large selection of Aluminium, extruded profiles are available from stock offering a variety of fixing and gasketing options.

Custom sizes manufactured with no additional cost. Frames can be supplied with fixing holes or captive threaded inserts to aid mounting.

These ventilation panels can be supplied with a Kempass (RoHS) Aluminium passivation finish.

Design Considerations

Any environmental conditions such as moisture and dust control including

- Air Flow requirement (Generally requires assisted air flow)
- External louvers for rain protection
- Drain holes
- Any additional gasketing
- Cleaning: Vacuum or blow clean with an airline for dry panels or easily cleaned in detergent solution prior to re oiling.

Constructional requirements and finishes including

Rigidity of vent frame and enclosure so as to prevent bowing of either surface when compressing the gasket Fixing requirements e.g. holes or threaded inserts ensuring appropriate position and size of hole-centres. (Holes in the corners of the frame should be avoided.)

If specifying captive inserts in both sides of the frame off-set the positions by 10mm minimum.

Round vents tend to be an expensive option due to the complexity of manufacturing method.

Product Overview (Continued)

Gaskets for vents

- Knitted wire mesh = Frames with a gasket groove
- Orientated wire in silicone
- Knitted Monel wire mesh with a Neoprene sponge carrier 2.4mm thick
- Beryllium Copper finger stock

Other gasket options are available

Production Capabilities

Kemtron manufacture its range of EMC vent panels using the latest technology and, with the exception of painting and plating, all processes are kept in house, giving us flexibility and total control over quality. Kemtron has invested heavily in this area making us the market leaders for price, delivery, quality and availability.

Fully programmable CNC machines for the notching & cutting of the frame extrusions and drilling of exact and repeatable holes combined with the latest TIG welding equipment allows Kemtron to offer a fast delivery of its competitive range of aluminium vent panels produced to customer designs. This advanced technology also eliminates the need for additional tooling and set-up charges. Kemtron holds a large range of aluminium extrusions and aluminium honeycomb in stock. In addition to vent panels, Kemtron manufactures a huge range of EMI shielding products, including conductive Elastomers, oriented wire, knitted wire mesh, connector gaskets.

Vent panels made with styles 1701, 1703, are supplied with 3 corners notched and the 4th joined corner welded and have an external corner radii of 3mm.

Finishes

Vent panels can be supplied with a range of finishes including:

- Painted (frame only for dust panels)
- Electro less plated Tin or Nickel
- Kempass (RoHS) Aluminium Passivation process
- Trivalent chromium (RoHS compliant)
or Hexavalent chromium

Kemtron's standard finish (KEM-PAS) for aluminium vent panels fully meets the RoHS directive and replaces Alocrom1200, which is a hexavalent chromium process. Kemtron's in-house process applies a permanganate passivation which is a chromate free, inorganic and non toxic coating. The process produces a dense, uniform coating consisting of aluminium and reduced manganese oxides giving a light yellow colour to the surface. The surface finish is conductive with a low contact resistance equalling Alocrom 1200. It also meets all requirements of MIL-C-5541E for corrosion and electrical conductivity.

We are also able to offer a comprehensive range of painted finishes to complement our standard Kempass finish. Using industry leading wet paint solutions from Trimite, we offer full painting and preparation to DEF STAN specifications including matt and gloss finishes. In addition we can also offer Infra Red Reflecting (IRR) matt finishes complying with DEF STAN 00-23, 80-166 and STANAG 2338.

For less critical / commercial applications requiring a protected finish we recommend polyester powder coating. This is tough material that offers excellent resistance to fresh and saltwater, petrol, linseed and penetrating oils, along with limited resistance to various acids. We are happy to advise on specific examples if required. With both processes, we are able to offer a full range of colours to RAL/BS charts.

Technical Specifications

Tolerances

Standard tolerances for overall finished vent dimensions are +/- 0.8mm

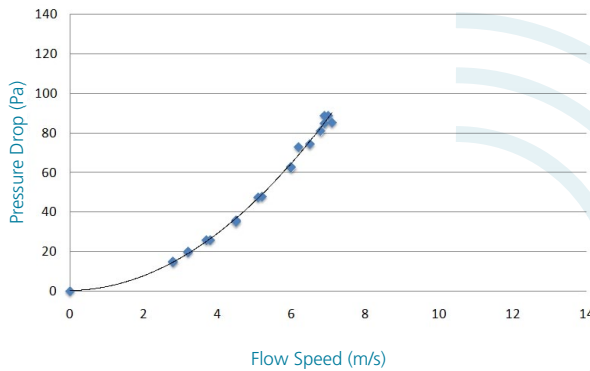
Standard tolerances on hole centres are +/- 0.4mm

Typical corner radii on frame styles 1701 and 1703 are R3.0mm

Specifications

| | |
|---------------------------|-------------------------------|
| Aluminium frame | 6063-T6 |
| Aluminium filter material | wire dia 0.28mm open area 66% |
| Monel wire gasket | BS3075 NA13 |
| Neoprene sponge | ASTM D1056 (84) SCE 42 |
| Beryllium copper | alloy 25 (CA172) |
| Silicone rubber | ZZ-R-765 Class 2 Grade 40 |
| Aluminium wire | 5056 |

Air Flow Results Graph

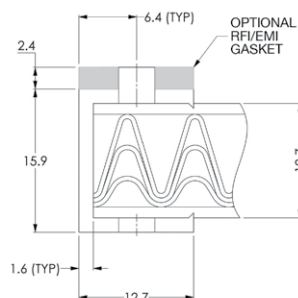


EMC Performance (db)

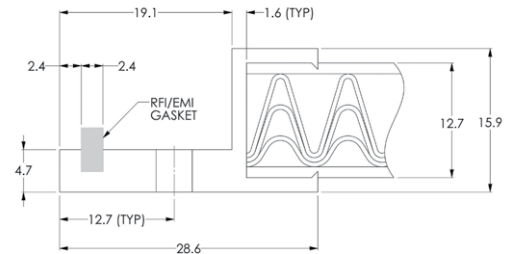
| Frequency | db |
|-----------|----|
| 0.01MHz | 42 |
| 0.1MHz | 53 |
| 1.0MHz | 61 |
| 10.0MHz | 81 |
| 100MHz | 60 |
| 1,000MHz | 52 |
| 10,000MHz | 43 |

Frame Styles

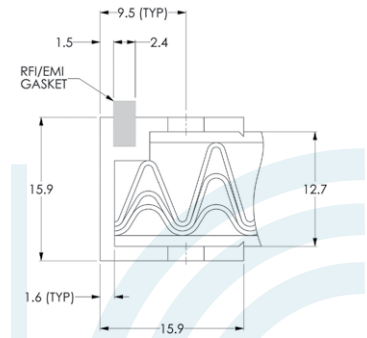
1701



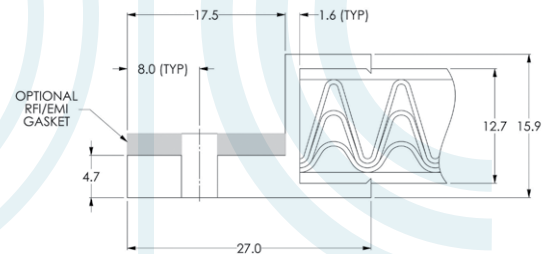
1702



1703



1704



Notice

Information supplied in these data sheets is based on independent and laboratory tests which Kemtron believes to be reliable. Kemtron has no control over the design of customer's product which incorporates Kemtron's products, therefore it is the responsibility of the user to determine the suitability for his particular application and we recommend that the user make his own test to determine suitability.

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