



When product integrity counts...

Manufacturers of laboratory calibrated temperature and humidity data loggers, real-time monitoring and cold chain solutions

IP Number ratings explained

IP (Ingress Protection) numbers are used to specify the environmental protection of enclosures used to house finished products etc. These ratings refer to specific tests and are composed of two numbers. The first number is the protection from solid objects, and the second is the protection from liquids. To work out the protection that a particular number represents, see the summary below for IP Number ratings explained.

FIRST NUMBER – Protection against solid objects

0 No protection (No special protection)

1 Protected against solid objects up to 50mm e.g. accidental touch by hands (Large foreign bodies diameter. >50mm)

2 Protected against solid objects up to 12mm e.g. fingers (Medium sized foreign bodies, diameter. >12.5mm)

3 Protected against solid objects up to 2.5mm (tools and wires) (Small foreign bodies, diameter. >2.5mm)

4 Protected against solid objects up to 1mm (Small tools and wires / Granular foreign bodies, diameter. >1mm)

5 Protected against dust, limited ingress (Dust deposits are permitted, their volume must not affect the functionality of the unit)

6 Totally protected against dust (Dust-proof)

SECOND NUMBER – Protection against liquids

0 No protection (No special protection)

1 Protection against vertically falling drops of water e.g. condensation (Water dripping vertically)

2 Protection against direct sprays of water up to 15 degrees from vertical (Water dripping at an angle)

3 Protection against direct sprays of water up to 60 degrees from vertical (Spray water, up to 60 degrees)

4 Protection against water sprayed from all directions – limited ingress permitted (Spray water from all directions)



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5 Protected against low-pressure jets of water from all directions – limited ingress permitted (Water jets from a nozzle in all directions)

6 Protected against low-pressure jets of water (such as use on ship decks) – limited ingress permitted (High-pressure jets)

7 Protected against the effect of immersion between 15cm and 1m (Temporary immersion)

8 Protected against long periods of immersion under pressure (Permanent immersion)

Note that there is a third number, which is commonly omitted, which refers to protection against mechanical impacts.