

IRISYS OUTDOOR COUNTER - IP RATING

The IP Code (or International Protection Rating, sometimes also known as Ingress Protection Rating) consists of the letters IP followed by two digits and an optional letter. As defined in international standard IEC 60529, it classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in electrical enclosures. The standard aims to provide users more detailed information than vague marketing terms such as "waterproof".

Irisys outdoor counters are rated as IP66. This means that they are protected completely from dust and foreign objects (the first 6), and will withstand strong jets of water from all directions (the second 6).

The full IP ratings system is shown below:

First Number (Protection against Solid Objects)	Definition	Second Number (Protection against Liquids)	Definition
IP0x	0 = Not Protected	IPx0	0 = Not Protected
IP1x	1 = Protected against solid foreign objects of 50mm in diameter and greater (e.g. accidental touch by hands)	IPx1	1 = Protected against vertically falling drops of water
IP2x	2 = Protected against solid foreign objects of 12mm in diameter and greater (e.g. fingers)	IPx2	2 = Protected against water sprayed up to 15° from the vertical
IP3x	3 = Protected against solid foreign objects of 2.5mm in diameter and greater (e.g. tools and wires)	IPx3	3 = Protected against water sprayed up to 60° from the vertical
IP4x	4 = Protected against solid foreign objects of 1mm in diameter and greater (e.g. tools wires and small wires)	IPx4	4 = Protected against water sprayed from all directions – (Limited ingress permitted).
IP5x	5 = Protected against dust - Limited to ingress (no harmful deposit)	IPx5	5 = Protected against low pressure jets of water from all directions (Limited ingress permitted).
IP6x	6 = Totally protected against dust	IPx6	6 = Protected against strong jets of water from all directions (Limited ingress permitted).
		IPx7	7 = Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes.
		IPx8	8 = Protected against the effects of long periods of immersion under pressure.
IP69K	6 = Totally protected against dust	IP69K	9 = Protected against the effects of steam jet cleaning.

In North America, the NEMA rating system is used instead of the IP ratings system. This considers protection against ingress of solid foreign objects and ingress of water (like the IP rating does) but also considers other items such as corrossions and construction details. For this reason it is possible to say that a NEMA Type is equivalent to an IP rating but it is not possible to state that an IP rating is equivalent to a NEMA Type.

If you refer to the information on the NEMA web site you will see that a Type 4 and a Type 4X is equivalent to an IP 66. Therefore, although the Irisys outdoor counter has not been tested against the NEMA system, it can be said to be equivalent to a NEMA rating 4 or 4X.

The full rating system is shown below:

NEMA Rating	IP Equivalent	NEMA Definition
1	IP10	Enclosure, indoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment and a degree of protection against falling dirt
2	IP11	Enclosure, indoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment, to provide a degree of protection against falling dirt, and a degree of protection against dripping and light splashing of liquids
3	IP54	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will be undamaged by external formation of ice on the enclosure
3R	IP14	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by external formation of ice on the enclosure
3S	IP54	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and in which the external mechanism(s) remain operable when ice laden.
4	IP 56	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water; and that will be undamaged by the external formation of ice on the enclosure
4X	IP56	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion; and that will be undamaged by the external formation of ice on the enclosure
5	IP52	Enclosure, indoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt; against settling airborne dust, lint and fibres; and a degree of protection against dripping and light splashing of liquids.
6	IP67	Enclosure, indoor or outdoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt; against hose-directed water and the entry of water during occasional temporary submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure.
6P	IP67	Enclosure, indoor or outdoor use, to provide a degree of protection to the personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt; against hose-directed water and the entry of water during prolonged submersion at a limited depth; and that will be undamaged by the external formation of ice on the enclosure
12 and 12K	IP52	Enclosure (without knockouts), indoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt; against circulating dust, lint and fibres; and against dripping and light splashing of liquids
13	IP54	Enclosure, indoor use, to provide a degree of protection to personnel against incidental contact with the enclosed equipment; a degree of protection against falling dirt; against circulating dust, lint and fibres; and against the spraying, splashing, and seepage of water, oil, and noncorrosive coolants.