

FIRST NUMBER (SOLID)	
0	No protection
1	Protection against touch by hands > 50 mm
2	Protection against touch by fingers > 12 mm
3	Protection against tools and wires > 2.5 mm
4	Protection against small tools and wires > 1 mm
5	Limited dust ingress protection
6	Total dust ingress protection
SECOND NUMBER (LIQUID)	
0	No protection
1	Protection against condensation
2	Protection against water spray <15 deg from vertical
3	Protection against water spray <60 deg from vertical
4	Protection against water spray from any direction
5	Protection against low pressure water jet - any direction
6	Protection against high pressure water jet - any direction
7	Protection against immersion - 15 cm to 1 mtr deep
8	Protection against long term immersion under specified pressure
9	Protection against steam jet cleaning

IP	Ingress (Entry) Protection
1st digit	Protection for persons Protection for equipment
2nd digit	Protection against water

Protection	Protection for persons	Protection for equipment	Protection against water
IP20	Protection against a finger touching dangerous parts A test finger jointed, 12mm diameter and 80 mm long must have sufficient distance from dangerous parts	Protection against a solid foreign body 12.5 mm dia or more must not enter	No protection
IP30	Protection against a tool touching dangerous parts Body 2.5 mm diameter should not enter	Protection against a solid foreign body 2.5 mm dia or more must not enter	No protection
IP40	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Protection against a solid foreign body Body 1 mm diameter should not enter	No protection
IP50	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Protection against dust Dust is not prevented altogether Dust should not enter to prevent the equipment from operating satisfactorily	No protection
IP54	Protection against a wire touching dangerous parts	Protection against dust	Protection against water spray

	Body 1 mm diameter should not enter	Dust is not prevented altogether Dust should not enter to prevent the equipment from operating satisfactorily	Water splashes on the enclosure from any direction must not have any harmful effects
IP65	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Sealed against dust Dust must not enter at all	Protection against water jet Water jets from nozzle 6.3 mm diameter at enclosure from any direction, must not have any harmful effects
IP66	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Sealed against dust Dust must not enter at all	Protection against powerful water jet A strong water jet from nozzle 12.5 mm diameter at enclosure from any direction, must not have any harmful effect
IP67	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Sealed against dust Dust must not enter at all	Protection against immersion - 15 cm to 1 meter deep Water must not enter in a quantity that could have harmful effects in enclosure is kept permanently under water
IP68	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Sealed against dust Dust must not enter at all	Protection against effects of constant submersion of water under pressure Water must not enter in a quantity that could have harmful effects in enclosure is kept permanently under water
IP69	Protection against a wire touching dangerous parts Body 1 mm diameter should not enter	Sealed against dust Dust must not enter at all	Protection against steam jet cleaning Water must not enter in a quantity that could have harmful effects in enclosure is kept permanently under water