



# PROTECTION CLASSES

WHETHER FOR ROBUST APPLICATIONS AS A TABLETOP OR WALL-MOUNTED DEVICE OR FOR MOBILE APPLICATIONS – OKW GEHÄUSESISTEME OFFERS A HIGH QUALITY STANDARD TO PROTECT YOUR ELECTRONICS.

## IP PROTECTION CLASSES

Our standard enclosures have been tested under standardised conditions (as a unique VDE object and/ or according to IEC 529) for protection against contact as well as against the ingress of foreign bodies and water. The IP protection classes specified for OKW enclosures refer to the goods in stock without any machining or accessories fitted. We cannot assume any guarantee for compliance with these protection classes in the subsequent customer application areas, as these are not known to us and depend on a large number of variables, such as use outdoors with constant changes in ambient conditions. In addition, the IP standard test conditions do not take into account the ageing processes in the products and the extent of subsequent modifications to the products themselves. We therefore recommend that you certify your finished products in order to be absolutely certain.

The protection classes are indicated by a code with the letters IP and the two following codes for the respective protection class. Here are some examples:

What does IP54 mean? If the standard enclosure has protection class IP54, it has complete protection against accidental contact, whereby dust can penetrate in small quantities. In addition, it is protected against harmful quantities of splash water from all sides.

The high protection class IP65 means that dust cannot penetrate into the standard enclosure under standard conditions. The electronics are protected against harmful quantities of water jets from any direction, and complete protection against accidental contact is guaranteed.

## PROTECTION AGAINST MECHANICAL IMPACT


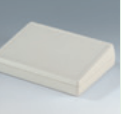













The impact strength mark is a measure of the resistance of an enclosure to mechanical impacts. It is standardised according to the international DIN EN 50102 standard, and describes how much impact energy the standard enclosure must at least withstand. The test classes for impact strength are composed of the code letters IK and a reference number for the impact force.

Example: IK08 means that the enclosure has successfully passed a standard test with impact energy of 5 joules.

The following pages show the minimum protection classes achieved by standard OKW enclosures, explanations of the individual degrees of protection in accordance with IP and NEMA, as well as of impact strength.

# PROTECTION CLASSES OF OKW ENCLOSURES













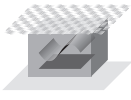
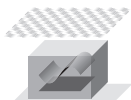
ACCORDING TO DIN VDE 0470 TEIL 1 / EN 60529 / IEC 529

<b>&lt; IP 40</b>	 EURO CASE	 HAND-HELD-BOX	 POTTING BOX	 DIN MODULAR CASE TYPE A	 DESK CASE	 RAILTEC B	 RAILTEC C	 SHELL-TYPE CASE V/D; G without sealing	 PLUG CASEE	<b>&lt; IP 40</b>		
<b>IP 40</b>	 ART-CASE	 COMTEC	 CONNECT	 DIATEC	 ERGO-CASE L with display trim	 EVOTEC without sealing	 FLAT-PACK CASE N, H and A with front panel	 MINI-DATA-BOX without sealing	 MEDITEC	 MOTEC with front and rear panel / sloping control panel and rear	<b>IP 40</b>	
<b>IP 41</b>	 DATEC-COMPACT without sealing	 DATEC-POCKET-BOX without sealing	 MINITEC DROP S and M with intermediate ring in TPE	 MINITEC EDGE M with intermediate ring in TPE	 SENSO-CASE					 ERGO-CASE XS with intermediate ring in TPE	<b>IP 42</b>	
<b>IP 54</b>	 BLOB with sealing	 CARRYTEC enclosure with sealing	 DATEC-CONTROL M & L with sealing kit	 DATEC-POCKET-BOX S, M and L with sealing	 DATEC-TERMINAL with sealing	 ERGO-CASE S, M & L with sealing kit (except size L with display trim)	 INTERFACE-TERMINAL with sealings	 SMART-TERMINAL with plastic side covers	 SOFT-CASE with intermediate ring in TPE, without battery comp.	<b>IP 54</b>		
<b>IP 55</b>	 SMART-CONTROL with sealing				 BODY-CASE	 DATEC-COMPACT with sealing	 DATEC-CONTROL XS & S with sealing	 DATEC-MOBIL-BOX with sealing kit	 EASYTEC with sealing	 EVOTEC with sealing	 HAND-TERMINAL with sealing kit (case, front panel)	<b>IP 65</b>
<b>IP 65</b>	 MINI-DATA-BOX with sealing	 NET-BOX with sealing kit	 PROTEC with sealing	 SHELL-TYPE-CASE G with sealing kit without battery compartment	 SMART-BOX with sealing (width 170)	 SMART-CASE L & XL vers. II-IV with sealing, without battery comp.	 SNAPTEC with sealing	 STYLE-CASE with sealing kit	 SLIM-CASE with sealing	<b>2</b>		
<b>IP 66</b>	 IN-BOX	 ROBUST-BOX with sealing	 SMART-BOX with sealing (width 90/110/130/150)	 SOLID-BOX with sealing	<p><b>The IP protection classes specified for OKW enclosures refer to the goods in stock without any machining or accessories fitted.</b></p>				 IN-BOX	 SOLID-BOX with sealing	<b>IP 66</b>	
<b>IP 67</b>					<b>IP 67</b>	<b>IP 67</b>	<b>IP 67</b>					
ACCORDING TO DIN EN 50102/A1												
<b>IK 07</b>	 IN-BOX (ABS)					<b>IK 08</b>	 IN-BOX (PC)	 SOLID-BOX with sealing	<b>IK 07</b>			
<b>IK 08</b>					<b>IK 08</b>							

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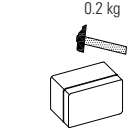
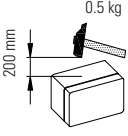
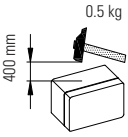
# PROTECTION CLASSIFICATIONS

## DEFINITION OF INDEXES

DEGREES OF CONTACT PREVENTION AND GUARDING AGAINST FOREIGN MATTER			DEGREES OF WATER PROTECTION		
First index digit	protection	explanation	Second index digit	protection	explanation
0	no protection	–	0	no protection	–
1	against large foreign bodies 	Protection of persons from accidental large-area direct contact with active or internal moving parts (e.g. hand contact), but no guard against intentional access to such parts. Protection of the object from access of solid foreign matter larger than 50 mm in diameter.	1	against water dripping vertically 	Water drops falling vertically must not have any harmful effect.
2	against medium-size foreign bodies 	Protection of persons from finger contact with active or internal moving parts. Protection of the object from access of solid foreign matter larger than 12 mm in diameter.	2	against water dripping up to 15° 	Water drops falling vertically at any angle up to 15° must not have any harmful effect.
3	against small foreign bodies 	Protection of persons from touching active or internal moving parts with tools, wires or similar foreign bodies thicker than $\varnothing$ 2.5 mm. Protection of the object from access of solid foreign matter larger than 2.5 mm in diameter.	3	against spray water 	Water hitting the object at any angle up to 60° with the vertical must not have any harmful effect.
4	against granular foreign bodies 	Protection of persons from touching active or internal moving parts with tools, wires or similar foreign matter > than $\varnothing$ 1.0 mm.	4	against splash water 	Water splashing against the object from all directions must not have any harmful effect.
5	from deposit dust 	Total protection of persons from touching voltage-carrying or internal moving parts. Protection of the object from harmful deposit of dust. Access of dust is not completely prevented, but dust is prevented from access in a quantity impairing the functioning.	5	against jet water 	A jet of water nozzled against the object from all directions must not have any harmful effect.
6	from access of dust 	Total protection of persons from touching voltage-carrying or internal moving parts. Protection of the object from access of dust.	6	against strong jet water 	A strong jet of water nozzled against the object from all directions must not have any harmful effect.
			7	in dipped state 	If the object is dipped into water (0.15-1 m) under the defined conditions of pressure and time, water must not enter in any harmful quantity.
			8	in submerged state 	If the object is submerged in water under defined extremely conditions, water must not enter in any harmful quantity.

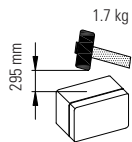
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## DEFINITION OF INDEXES

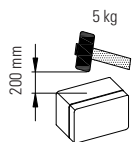
PROTECTION AGAINST MECHANICAL IMPACT		NEMA (STANDARD 250) ENCLOSURE PROTECTION CLASSIFICATIONS			
IK-class	protection	NEMA-CODE	AREA	PROTECTION	COMPARABLE IP-CODE
<b>IK 00</b>	no protection	<b>1</b>	<b>Indoor</b>	Falling dirt	<b>IP 10</b>
<b>IK 01 – IK 05</b>	impact energy < 1 joule	<b>2</b>	<b>Indoor</b>	Dirt and dripping water	<b>IP 11</b>
		<b>3</b>	<b>Outdoor</b>	Windblown dust, rain and sleet; against damage from external formation of ice	<b>IP 54</b>
		<b>3R</b>	<b>Outdoor</b>	Rain and sleet; against damage from external formation of ice	<b>IP 14</b>
		<b>3S</b>	<b>Outdoor</b>	Windblown dust, rain and sleet; external mechanisms remain operable when ice laden	<b>IP 54</b>
<b>IK 06</b>	impact energy 1 joule	<b>5</b>	<b>Indoor</b>	Dust, falling dirt, dripping non-corrosive liquids	<b>IP 52</b>
		<b>6</b>	<b>Indoor/Outdoor</b>	Hose-directed water, temporary submersion at a certain depth	<b>IP 67</b>
		<b>6P</b>	<b>Indoor/Outdoor</b>	Hose-directed water, temporary submersion at a certain depth; against damage from external	
<b>IK 07</b>	impact energy 2 joule	<b>12, 12K</b>	<b>Indoor</b>	Circulating dust, falling dirt, non-corrosive coolants	<b>IP 52</b>
		<b>13</b>	<b>Indoor</b>	Dust, splash water, oil, non-corrosive liquids	<b>IP 54</b>

**Notice: The Nema-Codes are only approximately comparable with the IP-Codes.**

**IK 08** impact energy 5 joule



**IK 09** impact energy 10 joule



**IK 10** impact energy 20 joule

