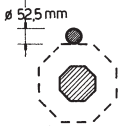
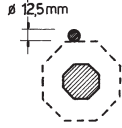
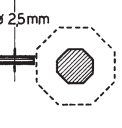
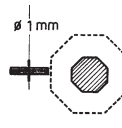
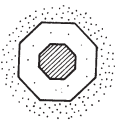
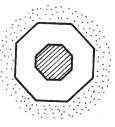


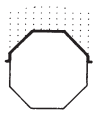
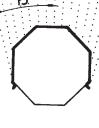
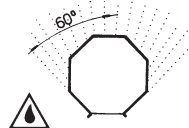
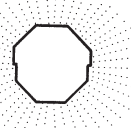

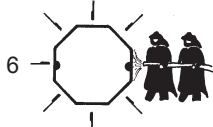
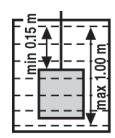
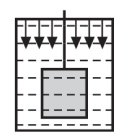
Technical Precautions for Design, Installation and Maintenance

31) International Protection (IP) Ratings

Protection against solid bodies

IP	Symbol	Test Definition
0		Not Protected
1		Protected against touch with the flat of the hand and large solid objects greater than 50mm
2		Protected against finger-touch and solid objects greater than 12mm.
3		Protected against solid objects greater than 2.5mm
4		Protected against solid objects greater than 1.0mm.
5		Dust-protected! Dust shall not penetrate in a quantity to interfere with the satisfactory operation of the apparatus.
6		Dust-tight

Protection of internal equipment against harmful ingress of water

IP	Symbol	Test Definition
0		Not Protected!
1		Protected against dripping water.
2		Protected against dripping water when tilted up to 15°.
3		Protected against spraying water.
4		Protected against splashing water.
5		Protected against water jets (P1 nozzle 6.3mm, water delivery rate 12.5 l/min ± 5%)
6		Protected from projections of water similar to marine swells (P2 nozzle 12.5mm, water delivery rate 100 l/min ± 5%)
7		Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily (30 min.) immersed 1 meter in water under standardized conditions of pressure and time
8		Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under conditions, which shall be agreed between manufacturer and the user, but are more severe than for no. 7