

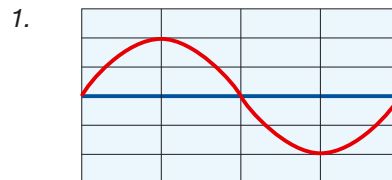
DW-series detuned filter capacitor bank



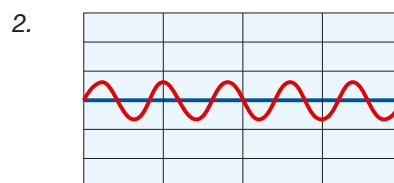
Nokian Capacitor DW-series automatic capacitor banks with blocking reactors are intended for power factor correction in systems where harmonic distortion is present.

New modular and compact design provide space saving and flexible mounting options for wall or floor mounting. DW-series is available in two variants, standard and extension. Extension types includes space for fast and easy power extension. Reactive power compensation is controlled with high performance reactive power controller N-6.

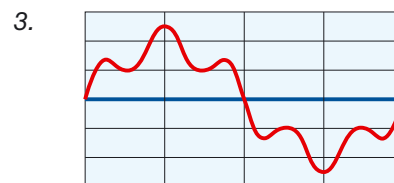
Power factor correction by means of conventional capacitor banks is not possible in systems affected by harmonics. This is because the harmonic currents are amplified in the parallel resonant circuit formed by the capacitor and the network. As a result current and voltage distortion are further increased.



Pure 50 Hz sine wave



5th harmonic (250 Hz)



*Voltage waveform distorted
by 5th harmonic*

Power factor correction in distorted network

Each step of the bank consists of a capacitor unit with a blocking reactor. These form a series resonant circuit tuned to a frequency below that of the lowest harmonic, normally the 5th.

The step is designed to be capacitive - i.e. the capacitor is dominant – at the fundamental frequency (50/60 Hz), and it thus provides power factor correction at this frequency.

At harmonic frequencies the blocking reactor is dominant and the step is therefore inductive. There is no amplification of the harmonics, because there is no parallel resonant circuit between the blocking reactor bank and the network. The bank also acts as a detuned filter removing a certain amount (15...50 %) of lower harmonic currents from the network.

The steps of the automatic capacitor banks, are controlled by a high performance reactive power controller N-6.

Wall mounted detuned filter capacitor banks are manufactured for 400 V/50 Hz network having tuning frequency, 141 Hz and 189 Hz. Other configurations available on request.

1. Power factor controller
2. Fuses
3. Contactor
4. Reactor
5. Capacitor unit
6. Cable connection



TECHNICAL DATA

Network voltage:	400 V
Rated power:	15...75 kvar
Mounting of bank:	Indoor
Temperature category:	Min 0°C Max +40°C - average (24 h) +30°C - average (1 year)+20°C
Dimensions (w x d x h):	750 x 320 x 1200 mm
Degree of protection:	IP20C
Standard:	IEC 60831
Colour:	Light grey RAL 7032

Can be mounted either on wall or floor.

STANDARD TYPES (400 V, tuning frequency 189 Hz)

Type	Reactive Power/kvar	Steps	Weight/ kg	Dimensioning Current/A	Fuse/ A
DW16/3+6+6-400-50/189	15.6	3+6+6	80	27	3x35
DW22/3+6+12-400-50/189	21.9	3+6+12	83	37	3x50
DW25/6+6+12-400-50/189	25	6+6+12	84	42	3x50
DW34/3+6+12+12-400-50/189	34.4	3+6+12+12	96	58	3x63
DW38/6+6+12+12-400-50/189	37.5	6+6+12+12	97	64	3x80
DW44/6+12+25-400-50/189	43.8	6+12+25	94	74	3x80
DW44/6+12+12+12-400-50/189	43.8	6+12+12+12	100	74	3x80
DW47/3+6+12+25-400-50/189	46.9	3+6+12+25	103	79	3x100
DW50/12+12+25-400-50/189	50	12+12+25	97	85	3x100
DW63/12+25+25-400-50/189	62.5	12+25+25	105	106	3x125
DW69/6+12+25+25-400-50/189	68.8	6+12+25+25	114	116	3x125
DW75/25+25+25-400-50/189	75	25+25+25	111	127	3x160
DW75/12+12+25+25-400-50/189	75	12+12+25+25	117	127	3x160

Support frame on request.

Other configurations available on request. The data and illustrations are not binding. In line with our policy of on-going product development we reserve the right to alter specification.

EXTENSION TYPES

Type	Reactive Power/kvar	Steps	Weight/ kg	Extension kvar	Dimensioning Current/A	Fuse/ A
DW16/3+6+6+E-400-50/189	15.6	3+6+6+E	80	6	27/37	3x35
DW22/3+6+12+E-400-50/189	21.9	3+6+12+E	83	25	37/79	3x50
DW25/6+6+12+E-400-50/189	25	6+6+12+E	84	25	42/85	3x50
DW44/6+12+25+E-400-50/189	43.8	6+12+25+E	94	25	74/116	3x80
DW50/12+12+25+E-400-50/189	50	12+12+25+E	97	25	85/127	3x100