

## Service Bulletin-55

# Type Designation System for Vacuum and Gas Capacitors

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## 1 Introduction

When COMET started the production of vacuum capacitors in 1965 a system was established to designate the different types. Over the years the type designation got increasingly complicated. New types were developed, parts enhanced and it became impossible to distinguish the different capacitor types, or identify specifications or options at a glance. Therefore, since 1st of January 2004, a new type designation system is operative.

All capacitors (vacuum + gas) which have been designed after the 1st of January 2004 have a type designation based on the new system **Type Designation 2004**. Capacitors which have been designed before the 31st of December 2003 will have both: a type designation based on the system [Type Designation 1965](#) and one on **Type Designation 2004**.

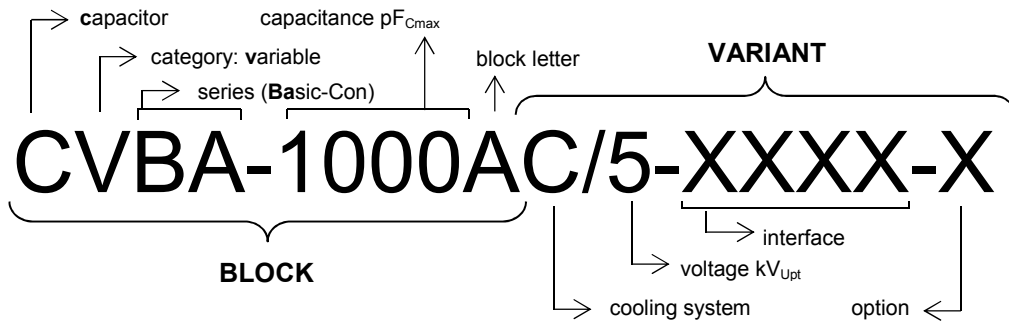
## 2 Type Designation 2004

The **Type Designation 2004** is divided into two parts: *Block* and *Variant*. The *Block* part identifies capacitors of the same block. The *Variant* part defines the capacitor's *interface* and possible customer *options* (slam index, optical sensor etc.).

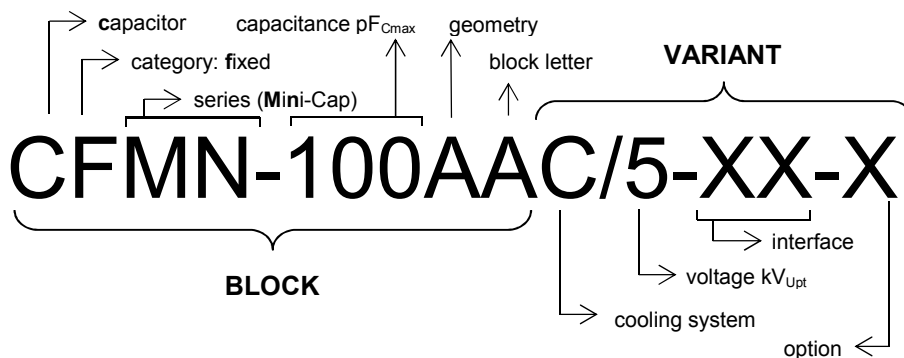
The *Variant* part is used to identify the specific features of the capacitor and consists of letters describing the *interface* and *optional* features. This concept allows the name to be a

unique identifier which can easily be deciphered and instantly gives away the features of any capacitor type. For detailed explanation of the letter code defined please refer to chapter [4](#). Type Designation 2004 (Explanation of Letter Indicators).

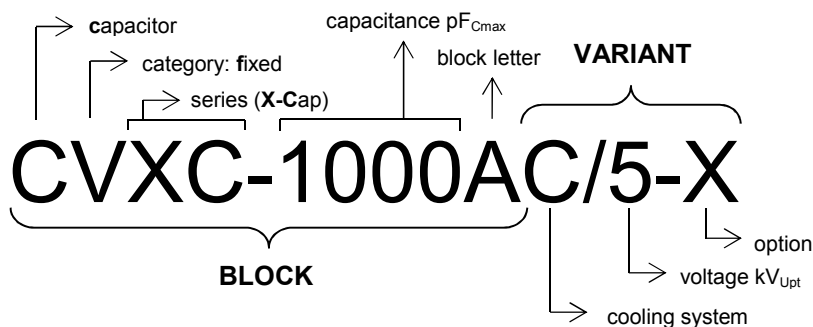
## 2.1 Variable Vacuum Capacitors



## 2.2 Fixed Vacuum Capacitors



## 2.3 Variable Gas Capacitors



## 2.4 Interface

For variable capacitors, *interface* means the drive system (lead-screw / shaft), which is the explicit identifier for a variable capacitor type. The distinctive feature of fixed vacuum capacitors is the type of mounting system (both sides relevant; flanges, mounting plates etc.). This is, what the *interface* defines for fixed vacuum capacitors.

## 2.5 Optional Letters

These letters indicate the *option* (additional features) of a capacitor. They give information about any additional features of the corresponding capacitor, like a tighter capacitance tolerance. If a capacitor doesn't have any additional features and it is uniquely identified by its *interface* letters, then there is no need for option letters. Whenever a capacitor is equipped with a feature which is not part of the basic configuration specified for this type, this option must be indicated by an option letter.

The option letters are to be given in alphabetic order.

For example: CVBA-1000AC/15-AEDB-**CFMT**

The option letters K and V are exceptions in that they are not used in all cases, when the designated option is present:

- **K** is only used, when the Anti-Corona-Rings are not a standard series feature. For example:
  - CVMI-400AC/15-ZJP-**KM** → according to standard, the series Midi-Con is without Anti-Corona-Rings. Therefore, if they are equipped with Anti-Corona-Rings as an option, it is indicated by adding “**K**”
  - CVMA-450DW/50-AAB-**V** → the series MAMi-Con is standardized with Anti-Corona-Rings, therefore there is no need for specifying this fact within the type designation → no option letter added
- **V** is only used for unambiguous identification of two or more capacitors which are identical except for the cooling supply (water fitting). For example:
  - CVMA-250DW/50-AAB
  - CVMA-250DW/50-AAB-**V** → (same capacitor as above but is equipped with a different kind of cooling supply)

Specific capacitance tolerances are differentiated by means of option letters as well. Capacitors usually have a capacitance tolerance of 10%. If a tighter tolerance is specified, this is indicated by the option letters **E** to **H**. The letters E, F and G are used for an exact tolerance value (E = 1%, F = 3% or G = 5%). For any other tolerance values and/or a special C-curve, the option letter **H** is used.

For example:

- CVBA-1000AC/15-AEDB-**F** (capacitor with 3% capacitance tolerance)
- CVBA-1000AC/15-AEDB-**H** (capacitor with special tolerance or C-curve e.g. a capacitance tolerance of 1pF or 2%, 4%, from >5% to <10%)

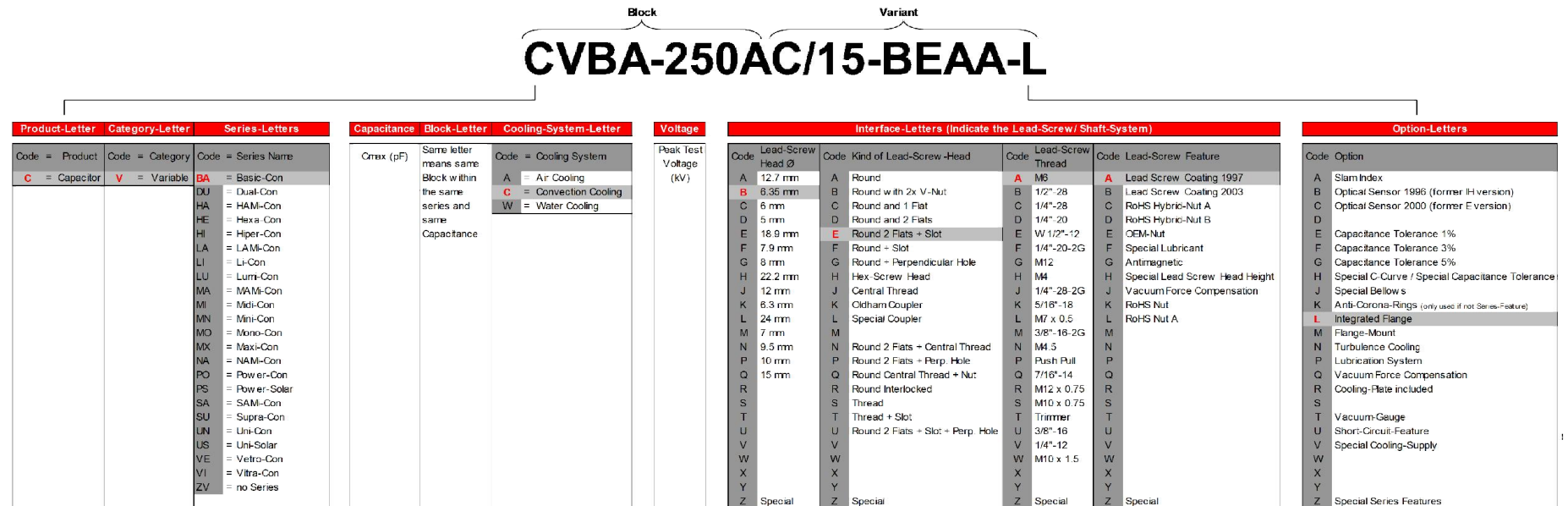
If two or more capacitors have an identical type designation but the capacitors differ from each other in some detail, for example in the positioning of the cooling supply, then they are distinguished by an additional number. Again, this is necessary to identify each capacitor by his type designation unambiguously.

For example:

Type designation 2004		Type designation 1965
○ CVMA-450CW/50-AAB-R	△	CV3W-450E
○ CVMA-450CW/50-AAB-R <b>1</b>	△	CV3W-450G
○ CVMA-450CW/50-AAB-R <b>2</b>	△	CV3W-450P

### 3 Type Designation 2004 (Explanation of Letter Indicators)

#### 3.1 Variable Vacuum Capacitors



Please note: while positions 1 to 3 of the *interface* indicators are mandatory, position 4 is optional.



### 3.2 Fixed Vacuum Capacitors

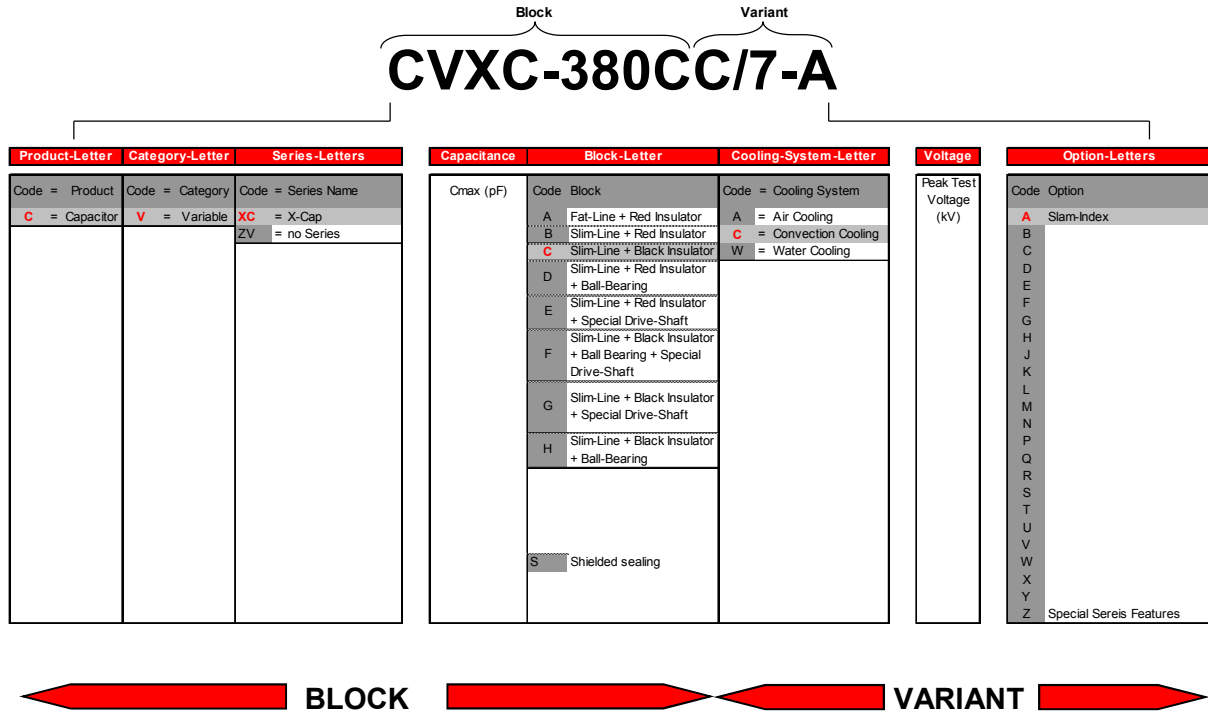
Block Variant

# CFMN-100CAC/15-AF-G

Product-Letter	Category-Letter	Series-Letters	Capacitance	Geometry-Letter	Block-Letter	Cooling-System-Letter	Voltage	Interface-Letters (Indicate the Mounting System)	Option-Letters	
Code = Product <b>C</b> = Capacitor	Code = Category <b>F</b> = Fixed <b>T</b> = Trimmer	Code = Series Name LA = LAM-Cap MA = MAM-Cap <b>MN</b> = Mini-Cap NA = NAM-Cap SA = SAM-Cap ZV = no Series	Cmax (pF)	Code = Geometry Size LAM-Cap A = 204.8 mm Ø / 182 mm Height B = 204.8 mm Ø / 153 mm Height NAM-Cap A = 179.8 mm Ø / 62 mm Height B = 179.8 mm Ø / 138 mm Height C = 179.8 mm Ø / 164.4 mm Height Mini-Cap A = 47 mm Ø / 52 mm Height (MC05C) B = 74 mm Ø / 52 mm Height (MC08C) <b>C</b> = 47 mm Ø / 52 mm Height (MC1C) D = 47 mm Ø / 62 mm Height (MC2C) E = 63 mm Ø / 87 mm Height (MC3C) F = 15.5 mm Ø / 66 mm Height G = 34 mm Ø / 43 mm Height NAM-Cap A = 114 mm Ø / 140 mm Height B = 114 mm Ø / 190 mm Height C = 114 mm Ø / 111 mm Height D = 114 mm Ø / 174 mm Height SAM-Cap A = 140 mm Ø / 60 mm Height B = 114.8 mm Ø / 60 mm Height C = 114.8 mm Ø / 71 mm Height D = 140 mm Ø / 71 mm Height E = 114.8 mm Ø / 64 mm Height	Same letter means same Block within the same series and same Capacitance	Code = Cooling System A = Air Cooling <b>C</b> = Convection Cooling W = Water Cooling	Peak Test Voltage (kV)	Code Mounting Ø <b>A</b> M4 B 127 mm C 38.1 mm D M6 E 20.6 mm F 57 mm G 86.4 mm H 88.9 mm J 60 mm K 100 mm L 40 mm M 51.5 mm N 22.1 mm P 152.4 mm Q 80 mm R 50.8 mm S 160 mm T 89 / 86.4 mm U M5 V M12x0.75 / M5 W M12x0.75 / M6 X 59.7 mm Y Z	Code Kind of Mounting A Flange Mount B Mounted on Envelop C Mounting Ring D Integrated Flange E Mounting-Plate with Central-Thread <b>F</b> Mounting-Plate with Central-Broach and Thread G Mounting-Ring with mounted Mounting-Plate H Mounting-Plate with Central-Thread and Holes J Mounting-Plate with Thread-Rod K Mounting-Plate with Thread-Rod / Central-Broach w. Thread L Mounting-Plate with Thread-Rod / Central-Thread and Holes	Code Option A B C D E Capacitance Tolerance 1% F Capacitance Tolerance 3% <b>G</b> Capacitance Tolerance 5% H Special C-Curve / Special Capacitance Tolerance J Special Bellow s K Anti-Corona-Rings (only used if not Series-Feature) L M N Turbulence Cooling P Q Cooling-Plate included R S Vacuum-Gauge T U Special Cooling-Supply V W X Y Z Special Series Features



### 3.3 Variable Gas Capacitors



**Please note:** Gas capacitors do not have any interface-letters in their type designation (see also chapter [3.3 Variable Gas Capacitors](#)).