

# SOLENOIDS, COILS & ACCESSORIES

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(1) Consult our other catalogues at: [www.asco.com](http://www.asco.com)

## COIL CHARACTERISTICS

Coils in the catalogue pages are identified by their electrical characteristics such as:

- "Coil insulation class", generally F or H;
- Type of "Connector", mostly with a spade plug or flying lead;
- "Connector specification" with applicable standards;
- "Electrical safety" to IEC 335 / EN 60730-1 standard
- "Electrical enclosure protection": epoxy moulded coil and ingress protection rating of, generally, IP65 or IP67 to EN 60529/ IEC 529
- Available "Standard voltages": for details see "Standard voltages" on the following page;

A table with:

- "power ratings" (Pn):

For alternating current (~),

. the **inrush** power expressed in VA (Volt-Amps),

. the **holding** power expressed in VA and W,

For direct current (~) coils,

. the power rating in the **hot** state (coil under continuous duty) and in the **cold** state (at inrush of power)

- The min./max. values of the solenoid **operator ambient temperature range** (including the influence of the fluid temperature within the minimum and maximum limits given on the catalogue pages).

Example:

| prefix option | power ratings |          |          |          | operator ambient temperature range (TS) (C°) | replacement coil |            | type <sup>(1)</sup> |
|---------------|---------------|----------|----------|----------|--|------------------|------------|---------------------|
|               | inrush        | holding  | hot/cold | =        |  | ~                | =          |                     |
|               | (VA)          | (VA) (W) | (W)      | (W)      |  | 230 V/50 Hz      | 24 V CC    |                     |
| SC            | 34            | 15,6     | 6        | 7 / 9,7  | -20 to + 75                                  | 400325-117       | 400325-142 | 01                  |
|               | 30            | 22,5     | 9        | 9,5/15,3 | -20 to + 50                                  | 400325-217       | 400325-242 | 01                  |

## COIL IDENTIFICATION

ASCO offers coils in the following main sizes:

- **XM5, M6, MXX, M12**
- **CM22, C22, C22A, C25A, CM25, JMX, ANX, AMX, BMX**

Please note: Posiflow solenoid valves (Section B) have special coils, please contact us for details.

Coil sizes can be identified from the power ratings given in the table under "Electrical characteristics" on the catalogue pages.

For an example, see Section C, page V313:

| prefix option | power ratings |          |             |                 | operator ambient temperature range (TS) (C°) |
|---------------|---------------|----------|-------------|-----------------|--|
|               | inrush        | holding  | hot/cold    | =               |  |
|               | (VA)          | (VA) (W) | (W)         | (W)             |  |
| SC            | 5             | 23       | <b>10,5</b> | 9/ <b>11,2</b>  | -20 to + 75                                  |
|               | 78            | 35       | <b>16,7</b> | -               | -20 to + 50                                  |
|               | 110           | 33,6     | <b>15,4</b> | -               | -20 to + 75                                  |
|               | 240           | 43       | <b>20</b>   | 16,8/ <b>23</b> | -20 to + 50                                  |

See corresponding values in the table of AC nominal power ratings

See corresponding cold-state values in the table of DC nominal power ratings

The nominal power ratings (Pn) on the catalogue pages are indicated in bold letters (see tab. A). They allow you to identify the coil size.

| power ratings (Pn) <span style="float: right;">tab. A</span> |               |    |     |     |      |      |      |      |                     |                            |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     |     |
|--|---------------|----|-----|-----|------|------|------|------|---------------------|----------------------------|---------------------|-----|-----|-----|-----|----|-----|-----|---------------------|-----|------|------|------|-----|-----|
| holding power (W)  |               |    |     |     |      |      |      |      |                     | cold state (W)             |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     |     |
| alternating current (AC) ~                                   |               |    |     |     |      |      |      |      |                     | direct current (DC) =      |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     |     |
| Pn (W)   | solenoid size |    |     |     |      |      |      |      | Ref. <sup>(2)</sup> | Pn (W)                     | solenoid size       |     |     |     |     |    |     |     | Ref. <sup>(2)</sup> |     |      |      |      |     |     |
|  | XM5           | M6 | MXX | M12 | CM22 | C22A | C25A | CM25 |                     |                            | JMX                 | ANX | AMX | BMX | XM5 | M6 | MXX | M12 |                     | C22 | C22A | C25A | CM25 | JMX | ANX |
| insulation class F (155°C)                                   |               |    |     |     |      |      |      |      |                     | insulation class F (155°C) |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     |     |
| 1,2 <sup>1)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 1,3                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 1,5 <sup>1)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 1,7                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 1,5 <sup>1)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 1,8                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 2,5  |               |    |     |     |      |      |      |      |                     | -                          | 3                   |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 2,5 <sup>7)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 3 <sup>7)</sup>     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 3,5 <sup>11)</sup>   |               |    |     |     |      |      |      |      |                     | -                          | 3 <sup>10)</sup>    |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 3,7 <sup>1)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 3,6                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 4 <sup>4)</sup>  |               |    |     |     |      |      |      |      |                     | T                          | 5,7                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 4  |               |    |     |     |      |      |      |      |                     | T                          | 5,7                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 4 <sup>8)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 6,9 <sup>8)</sup>   |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 5 <sup>9)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 5 <sup>9)</sup>     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 5,8 <sup>1)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 6,9                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 6  |               |    |     |     |      |      |      |      |                     | T                          | 7 <sup>11)</sup>    |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 6 <sup>3)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 8,6                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 6 <sup>3)</sup>  |               |    |     |     |      |      |      |      |                     | B                          | 9 <sup>6)</sup>     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 6,3  |               |    |     |     |      |      |      |      |                     | B                          | 9,7                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 8 <sup>6)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 10,7                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 8 <sup>5)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 10,8 <sup>5)</sup>  |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 8,1 <sup>12)</sup>   |               |    |     |     |      |      |      |      |                     | T                          | 11                  |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 9  |               |    |     |     |      |      |      |      |                     | B                          | 11,2                |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 10 <sup>1)</sup>   |               |    |     |     |      |      |      |      |                     | -                          | 11,6 <sup>12)</sup> |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 10,1 <sup>12)</sup>  |               |    |     |     |      |      |      |      |                     | T                          | 14                  |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 10,5   |               |    |     |     |      |      |      |      |                     | T                          | 15,3                |     |     |     |     |    |     |     |                     |     |      |      |      |     | B   |
| 10,8 <sup>1)</sup>   |               |    |     |     |      |      |      |      |                     | -                          | 16,8                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 11,1 <sup>12)</sup>  |               |    |     |     |      |      |      |      |                     | B                          | 19,7                |     |     |     |     |    |     |     |                     |     |      |      |      |     | F   |
| 13,4 <sup>1)</sup>   |               |    |     |     |      |      |      |      |                     | -                          | 23                  |     |     |     |     |    |     |     |                     |     |      |      |      |     | B   |
| 15,4   |               |    |     |     |      |      |      |      |                     | T                          |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 16,5   |               |    |     |     |      |      |      |      |                     | -                          |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 16,7   |               |    |     |     |      |      |      |      |                     | B                          |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 17,1 <sup>12)</sup>  |               |    |     |     |      |      |      |      |                     | B                          |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 20   |               |    |     |     |      |      |      |      |                     | B                          |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| insulation class H (180°C)                                   |               |    |     |     |      |      |      |      |                     | insulation class H (180°C) |                     |     |     |     |     |    |     |     |                     |     |      |      |      |     |     |
| 4 <sup>4)</sup>  |               |    |     |     |      |      |      |      |                     | -                          | 5,5 <sup>4)</sup>   |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 6  |               |    |     |     |      |      |      |      |                     | P                          | 9,7                 |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 9  |               |    |     |     |      |      |      |      |                     | -                          | 10,6 <sup>12)</sup> |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 10,5   |               |    |     |     |      |      |      |      |                     | T                          | 11,2                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 15,4   |               |    |     |     |      |      |      |      |                     | -                          | 11,6 <sup>12)</sup> |     |     |     |     |    |     |     |                     |     |      |      |      |     | T   |
| 16,7   |               |    |     |     |      |      |      |      |                     | -                          | 13,3                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
| 20   |               |    |     |     |      |      |      |      |                     | -                          | 15,3                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 16,8                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 17,4                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 18,6 <sup>12)</sup> |     |     |     |     |    |     |     |                     |     |      |      |      |     | B   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 19,7                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 20,8                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 22,6 <sup>12)</sup> |     |     |     |     |    |     |     |                     |     |      |      |      |     | B   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 23                  |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 26,6                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |
|  |               |    |     |     |      |      |      |      |                     | -                          | 29,5                |     |     |     |     |    |     |     |                     |     |      |      |      |     | -   |

- 1) Rectified coil construction.
- 2) Additional reference identification letter for coil types: XM5, M6, MXX, M12 (Example: FT, FB, FF, HT)
- 3) Section H, series 340, page V901-21
- 4) Series 238 (...C..., page V316) and 256/356 1/8-1/4
- 5) Section C/series 272 and Section E/series 374-370
- 6) Section C/series 238, page V316
- 7) Section C/series 108, page V295; Sect. D/series 189/banjo, page V439; Sect. E/series 189-109, pages V585-V590.
- 8) Section C/series 238, page V316 (type 01)
- 9) Series 256/356, 238, 552/553
- 10) Section E/series 189, page V585 (type 06): M12 connection
- 11) Series 238 (...C..., page V316) and 256/356 1/4
- 12) Series 262/263/314 (pages V223/V253/V542)

### COIL SUBSTITUTION

- Replacement coils:

The catalogue numbers of the main coils in this catalogue are listed on pages 4, 5 and 6.

Please note:

- Page 4: Select the catalogue number for the replacement coils for coil types XM5, CM5 etc. (all coils other than type CM6/CMXX/CM12 coils) from the table on page 4. Example: 400125-142 for coil type XM5
- page 5: For coil types M6/MXX, select the catalogue number for the replacement coils from the table. Example: 238513-006 for coil type M6
- Page 6: See page 6 for coil types CM22, C22, C22A, CM25, C25A, JMX, ANX, AMX, BMX. Example: 43005421

Some coils are identified by a letter placed before their size reference:

Letter C = coil with spade plug connector = for example, CMXX.

Letter L = coil with flying lead = for example, LMXX.

Letter S = coil with screw terminals = for example, SMXX

- To change from AC operation (~) to DC operation (=): First check whether the AC and DC ratings listed in the "coil power" columns in the "Specifications" table correspond to a coil of identical size.

At the example of Section C, page V313, we can check whether a DC coil can be fitted to a catalogue number "SCE210C093" solenoid valve initially fitted with an AC coil.

| power coil (W) | catalogue number |                 |
|----------------|------------------|-----------------|
|                | brass            | stainless steel |
|                | ~                | =               |
| 10,5           | 11,2             | SCE210C093 -    |

The values 10,5 W and 11,2 W are given in the **same row** in the "Electrical characteristics" table. So, for a valve with the catalogue number "SCE210C093", coil type MXX with an AC power rating of 10,5W can be substituted by coil type MXX with a DC power rating of 11,2W.

| prefix option | power ratings |           |             | operator ambient temperature range (C°) |
|---------------|---------------|-----------|-------------|---|
|               | inrush ~      | holding ~ | hot/cold =  |   |
|               | (VA)          | (VA)      | (W)         |   |
| SC            | 5             | 23        | 10,5 / 11,2 | -20 to + 75                             |

Coil power: 10,5 W at alternating current    Coil power: 11,2 W at direct current

- In case of higher ambient temperatures, the graph (fig 1) shows an example of a coil identified FT which can be replaced by a coil identified HT. For more details, please contact us.

- To obtain higher differential pressure ratings, please contact us as changing the internal parts of a valve (stronger springs etc.) may require a modification of the product.

### STANDARD VOLTAGES

The standard voltages indicated in the catalogue are as follows:

Alternating current (AC): 24 V, 48 V, 115 V, 230 V

(50 Hz frequency)

Direct current (DC): 24 V, 48 V

Other voltages and 60 Hz on request.

The catalogue numbers for the coils that can be operated at two frequencies (50Hz and 60Hz) are identified on page 5 by the symbol (♣).

### COILS WITH SPADE PLUG CONNECTORS

Most coils in the catalogue are provided with spade terminals to mount a connector.

- Example for an alphanumeric catalogue number:

The prefix "SC" in the "prefix option" column identifies a coil with spade plug connection.

| prefix option | power ratings |           |            | operator ambient temperature range (TS) (C°) | replacement coil |            | type (1)   |    |
|---------------|---------------|-----------|------------|--|------------------|------------|------------|----|
|               | inrush ~      | holding ~ | hot/cold = |  | ~                | =          |            |    |
|               | (VA)          | (VA)      | (W)        |  | 230 V/50 Hz      | 24 V CC    |            |    |
| SC            | 34            | 15,6      | 6          | 7 / 9,7                                      | -20 to + 75      | 400325-117 | 400325-142 | 01 |
|               | 30            | 22,5      | 9          | 9,5/15,3                                     | -20 to + 50      | 400325-217 | 400325-242 | 01 |

Example: SCE210C073»

- Example for a numerical catalogue number:

With a numerical catalogue number (series 107, 108, 109, 302), there is no prefix in the corresponding column, and therefore no identification as to whether it is a coil with a spade plug connector or not. To identify whether the coil has a spade plug connector, look for the specification "**Connector: spade plug connector**" under "Electrical characteristics".

| prefix option | power ratings |           |            | operator ambient temperature range (TS) (C°) | replacement coil |            | type (1)   |    |
|---------------|---------------|-----------|------------|--|------------------|------------|------------|----|
|               | inrush ~      | holding ~ | hot/cold = |  | ~                | =          |            |    |
|               | (VA)          | (VA)      | (W)        |  | 230 V/50 Hz      | 24 V CC    |            |    |
| -             | 15            | 7         | 5          | 5/5  | -10 to + 60      | 400727-117 | 400727-185 | 01 |

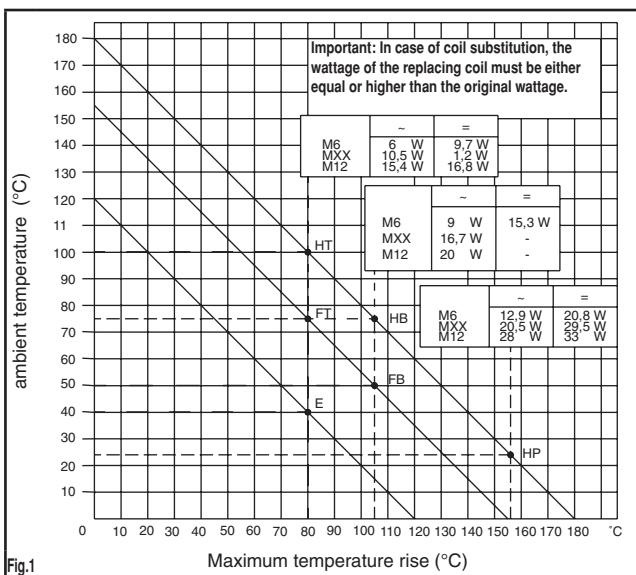
### COILS WITH FLYING LEADS

Coils can be supplied with either 2 or 3 leads, according to the version selected. For more details, please contact us.

### OPERATING VOLTAGE

All coils are designed to operate at 15% or 10% below the nominal voltage (Un) and at 10% above the nominal voltage (Un). [Applicable standards: IEC 335, EN 60730- 1, UL 429]

The coils are rated for continuous duty within the maximum ambient temperature limits (100% ED).



## COIL IDENTIFICATION

400 0 0 0 - 0 0 0 - D Z

400 ← BASIC NUMBER

|   |            |        |    |     |        |        |   |   |     |
|---|------------|--------|----|-----|--------|--------|---|---|-----|
| 0 | 1          | 2 (**) | 3  | 4   | 5      | 6      | 7 | 8 | 9   |
|   | CM22 (XM5) | CM5    | M6 | MXX | M12 AC | M12 DC |   |   | (*) |

← SIZE

|                          |        |                       |                |                         |              |   |   |   |   |
|--------------------------|--------|-----------------------|----------------|-------------------------|--------------|---|---|---|---|
| 0                        | 1      | 2                     | 3              | 4                       | 5            | 6 | 7 | 8 | 9 |
| embedded screw terminals | leaded | spade plug connection | spade terminal | leaded with ground wire | PV cable end |   |   |   |   |

← TYPE / TERMINATION

|   |   |   |   |   |   |   |   |   |     |
|---|---|---|---|---|---|---|---|---|-----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9   |
|   |   | A | E | B | F | H |   |   | (*) |

← INSULATION CLASS

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| - | T | B | F | C | P | I |   |   |   |

← TEMPERATURE CLASS

|    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07  | 08  | 09  | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  |
| 12 | 24 | 26 | 36 | 42 | 48 | 64 | 110 | 120 | 127 | 220 | 240 | 380 | 415 | 440 | 100 | 200 | 230 | 115 | 400 |

← 50 Hz

|    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |
|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|
| 20 | 21 | 22 | 23 | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35 | 36 | 37 | 38 | 39 |
| 12 | 24 | 42 | 48 | 100 | 120 | 208 | 220 | 240 | 380 | 550 | 480 | 110 | 200 | 230 |    |    |    |    |    |

← 60 Hz

|    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |    |    |    |    |
|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47  | 48  | 49  | 50  | 51  | 52  | 53  | 54  | 55  | 56 | 57 | 58 | 59 |
| 6  | 12 | 24 | 32 | 48 | 60 | 64 | 100 | 110 | 120 | 125 | 180 | 187 | 220 | 240 | 250 |    |    |    |    |

← DC (=) VOLTAGE

|         |       |        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---------|-------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 60      | 61    | 62     | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| 21,6 DC | 99 DC | 207 DC |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

← SPECIAL

|    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87  | 88  | 89  | 90  | 91  | 92  | 93  | 94  | 95  | 96  | 97  | 98  | 99  |
| 12 | 24 | 26 | 36 | 42 | 48 | 64 | 110 | 120 | 127 | 220 | 240 | 380 | 415 | 440 | 100 | 200 | 230 | 115 | 400 |

← 50-60 Hz bifrequency

|   |   |   |     |   |   |   |   |   |      |
|---|---|---|-----|---|---|---|---|---|------|
| A | B | C | D   | E | F | G | H | J | K    |
|   |   |   | 457 |   |   |   |   |   | 1829 |
|   |   |   | 18  |   |   |   |   |   | 72   |

← CABLE LENGTH (mm) (inch)

Standard

(\*) Customer special (these coils deviate from the identification system)

(\*\*) Obsolete

Z ← UL STANDARDS

UL

## CATALOGUE NUMBERS OF REPLACEMENT COILS

|         | 24 V =     | 48 V =     | 24 V ~     | 48 V ~     | 115 V ~    | 230 V ~    |
|---------|------------|------------|------------|------------|------------|------------|
| CM6-FT  | 400325-142 | 400325-144 | 400325-101 | 400325-105 | 400325-118 | 400325-117 |
| CM6-FB  | 400325-242 | 400325-244 | 400325-201 | 400325-205 | 400325-218 | 400325-217 |
| CMXX-FT | 400425-142 | 400425-144 | 400425-101 | 400425-105 | 400425-118 | 400425-117 |
| CMXX-FB | -          | -          | 400425-201 | 400425-205 | 400425-218 | 400425-217 |
| CMXX-FF | 400425-342 | 400425-344 | -          | -          | -          | -          |
| CM12-FT | 400625-142 | 400625-144 | 400525-101 | 400525-105 | 400525-118 | 400525-117 |
| CM12-FB | 400625-242 | 400625-244 | 400525-201 | 400525-205 | 400525-218 | 400525-217 |

| EMBEDDED SCREW TERMINAL COIL<br>Example: 400505-110<br>SM12-FT-220/50 | SPADE PLUG CONNECTION COIL<br>Example: 400425-342<br>CMXX-FF-24 DC | LEADED COIL (2 LEADS)<br>Example: 400315-111D<br>LM6-FT-240/50-457 mm | LEADED COIL WITH GROUND WIRE<br>Example: 400145-201D<br>LM22-FB-24/50- 457 mm |
|---|--|---|---|
|   |  |   |   |

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## COIL IDENTIFICATION

238 0 10 - 0 0 0 - D

238 ← BASIC NUMBER

|                   |                  |                  |                  |                  |                       |                   |                       |                   |
|-------------------|------------------|------------------|------------------|------------------|-----------------------|-------------------|-----------------------|-------------------|
| 1                 | 2                | 3                | 4                | 5                | 6                     | 7                 | 8                     | 9                 |
| MXX AC<br>class F | M6 AC<br>class F | M6 DC<br>class F | M6 AC<br>class H | M6 DC<br>class H | MXX/M12 AC<br>class F | MXX DC<br>class F | MXX/M12 AC<br>class H | MXX DC<br>class H |

← SIZE, SERVICE & CLASS

|        |   |                   |                                 |                                  |
|--------|---|-------------------|---------------------------------|----------------------------------|
| 0      | 1 | 2                 | 3                               | 4                                |
| leaded | - | spade<br>terminal | spade plug<br>(DIN /<br>Europe) | leaded<br>explosionproof<br>(EF) |

← TYPE / CONSTRUCTION

|        |        |        |    |    |   |   |   |                    |     |
|--------|--------|--------|----|----|---|---|---|--------------------|-----|
| 0      | 1      | 2      | 3  | 4  | 5 | 6 | 7 | 8                  | 9   |
| FT, HT | FB, HB | FF, HF | HC | HP | - | - | - | foreign<br>winding | (*) |

← INSULATION CLASS / TEMPERATURE CLASS

|    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 02 | 06 | 10 | 12 | 14 | 16 | 27  | 29  | 31  | 33  | 35  | 37  | 51  | 53  | 55  | 57  | 59  | 63  | 81  | 83  |
| 12 | 24 | 32 | 36 | 42 | 48 | 100 | 110 | 115 | 120 | 125 | 127 | 200 | 208 | 220 | 230 | 240 | 277 | 380 | 400 |

← 50 Hz

|    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 01 | 05 | 09 | 11 | 13 | 15 | 26  | 28  | 30  | 32  | 34  | 36  | 50  | 52  | 54  | 56  | 58  | 62  | 80  | 82  |
| 12 | 24 | 32 | 36 | 42 | 48 | 100 | 110 | 115 | 120 | 125 | 127 | 200 | 208 | 220 | 230 | 240 | 277 | 380 | 400 |

← 60 Hz

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 02 | 03 | 04 | 05 | 06 | 08 | 10 | 12 | 13 | 15 | 17 | 18 | 20 | 21 | 31  | 32  | 33  | 34  | 50  | 52  |
| 6  | 9  | 12 | 15 | 24 | 28 | 32 | 36 | 38 | 42 | 48 | 50 | 60 | 64 | 100 | 110 | 115 | 120 | 220 | 230 |

← DC (=) VOLTAGE

|   |   |   |     |   |   |   |   |   |      |
|---|---|---|-----|---|---|---|---|---|------|
| A | B | C | D   | E | F | G | H | J | K    |
|   |   |   | 457 |   |   |   |   |   | 1829 |
|   |   |   | 18  |   |   |   |   |   | 72   |

← CABLE LENGTH  
(mm)  
(inch)

Standard  
 (\*) Customer special

## CATALOGUE NUMBERS OF REPLACEMENT COILS

|        | 24 V =     | 48 V =     | 24 V ~     | 48 V ~     | 115 V ~                   | 230 V ~                   |
|--------|------------|------------|------------|------------|---------------------------|---------------------------|
| M6-HT  | 238513-006 | 238513-017 | -          | -          | -                         | -                         |
| M6-FT  | -          | -          | 238213-006 | 238213-016 | 238213-033 <sup>(b)</sup> | 238213-059 <sup>(a)</sup> |
| M6-HB  | 238513-106 | 238513-117 | -          | -          | -                         | -                         |
| M6-FB  | -          | -          | 238213-106 | 238213-116 | 238213-133 <sup>(b)</sup> | 238213-157                |
| MXX-HT | 238913-006 | 238913-017 | -          | -          | -                         | -                         |
| MXX-FT | 238713-006 | 238713-017 | 238613-006 | 238613-016 | 238613-033 <sup>(b)</sup> | 238613-059 <sup>(a)</sup> |
| MXX-HB | 238913-106 | 238913-117 | -          | -          | -                         | -                         |
| MXX-FB | -          | -          | 238613-106 | 238613-116 | 238613-133 <sup>(b)</sup> | 238613-159 <sup>(a)</sup> |

<sup>(a)</sup> 230 V/50 Hz - 250 V/50 Hz  
<sup>(b)</sup> 115 V/50 Hz - 120 V/50 Hz

|  |  |
|--|--|
| <b>SPADE PLUG CONNECTION COIL</b><br>Example: 238513-006<br>CM6-HT-24 DC | <b>SPADE PLUG CONNECTION COIL</b><br>Example: 238613-059<br>CMXX-FT-230 AC |
|  |  |

CATALOGUE NUMBERS OF REPLACEMENT COILS

| solenoid valve series   | coil type               | alternating current , AC (~) 50 Hz |                |                              |                      |                | direct current , DC (=) |            |            |            |
|---|-------------------------|------------------------------------|----------------|------------------------------|----------------------|----------------|-------------------------|------------|------------|------------|
|   |                         | 24 V                               | 48 V           | 115 V                        | 230 V                | 240 V          | 12 V                    | 24 V       | 48 V       | 110 V      |
| 189   | C22A - 2,5 W            | 43004416 (❖)                       | 43004417 (❖)   | 43004419 (❖)                 | 43004422 (❖)         | 43004423 (❖)   | 43004149                | 43004166   | 43004167   | 43004168   |
|   | C22-2,5 W-M12           | -                                  | -              | -                            | -                    | -              | -                       | 43005523   | -          | -          |
| 256 - 356 (1/8-1/4)<br>238 G3/8 to 1  | CM22-4W/6,9W F          | 400127-181 (❖)                     | 400127-185 (❖) | 400127-198 (115V/50-120V/60) | 400127-197 (❖)       | -              | 400127-141              | 400127-142 | 400127-144 | 400127-148 |
| 108 - 109 - 189 banjo - 551   | CM22 - 2,5/3 W          | 400127-081 (❖)                     | 400127-085 (❖) | 400127-098 (115V/50-120V/60) | 400127-097 (❖)       | 400127-091 (❖) | 400904-541              | 400904-542 | 400904-544 | 400904-548 |
| 256 - 356 (1/4)<br>238 G3/8 to 1<br>552/553   | CM25-5W/5W F            | 400727-181 (❖)                     | 400727-185 (❖) | 400727-118 (115V/50)         | 400727-117 (130V/50) | -              | 400727-181              | 400727-185 | 400727-118 | 400727-117 |
|   | ANX - 8/9 W             | 511239-005                         | 511239-006     | 511239-007                   | 511239-009           | -              | 511239-001              | 511239-002 | 511239-003 | -          |
| 238 G1 1/4 to 2   | ANX - 12,5 W            | 511239-011                         | 511239-012     | 511239-013 (110V/50-120V/60) | 511239-014           | -              | -                       | -          | -          | -          |
|   | AMX - 9 W<br>BMX - 6 W  | 43005153<br>43005168               | -<br>-         | 43005155<br>43005169         | 43005157<br>43005171 | -<br>-         | -<br>-                  | -<br>-     | -<br>-     | -<br>-     |
| 272 - 374   | JMX                     | 43005090                           | 43005091       | 43005093                     | 43005096             | -              | 43005098                | 43005099   | 43005100   | 43005101   |
| 121 MB<br>231 - 232   | screw terminals<br>12 W | 43002425                           | 43002433       | 43002442                     | 43002449             | 43002451       | -                       | 43001995   | 43002003   | 43002076   |
| 131 3/2<br>131 3/2 ATEX Ex d<br>231 ET - 232 ET, Ex d   | MPV1 (~) 15 W           | 43002566                           | 43002574       | 43002583                     | 43002591             | -              | -                       | -          | -          | -          |
| 231 ET - 232 ET   | CPV1 (=) 24 W           | -                                  | -              | -                            | -                    | -              | -                       | 43002124   | 43002132   | 43002141   |
|   | MPV1 (~)                | 43002566                           | 43002574       | 43002583                     | 43002591             | -              | -                       | -          | -          | -          |
| 131 4/2<br>131 4/2 ATEX Ex d  | CPV1 (=) 80 W           | -                                  | -              | -                            | -                    | -              | -                       | 43002197   | 43002203   | 43002212   |
|   | MPV1 (~) 20 W           | 43002641                           | 43002648       | 43002657                     | 43002665             | -              | -                       | -          | -          | -          |
| 126 , ATEX Ex d   | CPV1 (=) 24 W           | -                                  | -              | -                            | -                    | -              | -                       | 43002124   | 43002132   | 43002141   |
| 126 , ATEX Ex d   | 18 W / 15 W             | 43004028                           | 43004036       | 43004045                     | 43004053             | 43004054       | -                       | 43002091   | 43002098   | 43004408   |
| 126 reset version, ATEX Ex d  | 18 W / 10 W             | 43004028                           | 43004036       | 43004045                     | 43004053             | 43004054       | -                       | 43002092   | 43004407   | 43004409   |
| 121 MB - 231 - 232 ATEX Ex d  | 12W / 10 W              | 43002496                           | 43002504       | 43002513                     | 43002521             | -              | 43002055                | 43002059   | 43002067   | 43002076   |
| PV-EM5, ATEX Ex mb<br>256-356 (1/8-1/4; except manifold)<br>238 G3/8 to 1 (.....C...)<br>189-189 banjo<br>551 (TPL 20787) | 4 W AC/ 2 m             | 43005348PV (❖)                     | 43005349PV (❖) | 43005350PV (❖)               | 43005352PV (❖)       | -              | -                       | 43005366PV | 43005367PV | -          |
|   | 3W DC 4 m               | -                                  | -              | -                            | 43005562PV (❖)       | -              | -                       | 43005595PV | -          | -          |
|   | 2 m                     | 43005355PV                         | 43005356PV     | 43005357PV                   | 43005359PV           | -              | -                       | 43005371PV | -          | -          |
|   | 6,3 W AC/ 4 m           | -                                  | -              | -                            | -                    | -              | -                       | 43005593PV | -          | -          |
|   | 6,9W DC 4 m             | -                                  | -              | -                            | -                    | -              | -                       | 43005594PV | -          | -          |
|   | 6 m                     | -                                  | -              | -                            | -                    | -              | -                       | 43005594PV | -          | -          |

For other products, please consult [www.asco.com](http://www.asco.com)

- (❖) Bifrequency 50/60 Hz.
- (<sup>1</sup>) Except for manifold-mount versions.

| SPADE PLUG CONNECTION COIL<br>Example: CM22-4/6,9W<br>series 551, 256, 356, 238 | SPADE PLUG CONNECTION COIL<br>Example: JMX<br>series 272, 374, 370 | SPADE PLUG CONNECTION COIL<br>Example: CM25-5/5W<br>series 238 - 256/356 1/4 | COIL WITH SCREW TERMINALS<br>Example: ATEX, Ex d housing |
|---|--|--|--|
|   |  |  |  |

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