



### MOTOR STARTING WITH THREE-PHASE AUTO-TRANSFORMERS

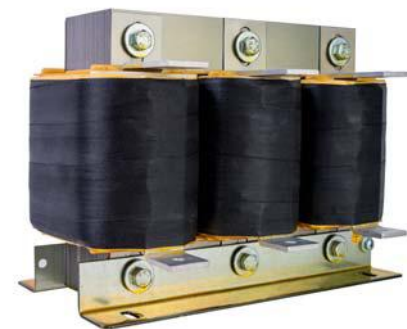
Taps: 65% - 70% - 75%  
 Vn = 400V  
 5 startings/hour – 2 consecutive  
 Motor cosfi = 0,85 Power factor = 0,9

#### Technical data

| KW  | DIMENSIONS (mm) | WEIGHT    |
|-----|-----------------|-----------|
|     |                 | <b>Kg</b> |
| 20  | 300x120x275 (H) | 28        |
| 50  | 360x130x330 (H) | 43        |
| 75  | 360x150x330 (H) | 56        |
| 100 | 360x180x330 (H) | 68        |
| 200 | 420x210x385 (H) | 112       |
| 300 | 480x240x440 (H) | 150       |
| 400 | 480x270x440 (H) | 185       |
| 500 | 600x250x550 (H) | 206       |

### MOTOR STARTING WITH THREE-PHASE REACTORS

70% Vn  
 Vn = 400V  
 Motor cosfi = 0,85 Power factor = 0,9



#### Technical data

| HP  | KW  | DIMENSIONS (mm) | WEIGHT    |
|-----|-----|-----------------|-----------|
|     |     |                 | <b>Kg</b> |
| 20  | 15  | 180x80x165 (H)  | 10        |
| 30  | 22  | 180x90x165 (H)  | 13        |
| 50  | 37  | 240x90x220 (H)  | 20        |
| 75  | 55  | 240x110x220 (H) | 27        |
| 100 | 74  | 300x100x275 (H) | 36        |
| 150 | 110 | 300x120x275 (H) | 47        |
| 200 | 147 | 360x120x330 (H) | 64        |
| 300 | 220 | 360x140x330 (H) | 78        |
| 400 | 295 | 420x250x385 (H) | 136       |
| 500 | 368 | 480x270x440 (H) | 180       |

These devices help three-phase induction motors starting decreasing the supply voltage and the current. Once the starting is effective, the devices are switched off and the three-phase motor will work with net current.

Meth manufactures a wide range of single- and three-phase reactors.

### MAIN APPLICATIONS OF REACTORS

#### R3F THREE-PHASE PFC FILTER REACTORS

The insertion of capacitors banks in presence of harmonics causes a current absorption harmful for life time of capacitors.

Reactors connected in series with the capacitors guarantee:

- Reduction of harmonics
- Reduction of current and consequent reduction of capacitor overheating
- Increase of capacitors life time

#### R3L/M THREE-PHASE SMOOTHING REACTORS FOR VARIABLE SPEED DRIVES (MOTOR SIDE)

Inverter Drives produce big quantity of harmful harmonics, which can damage of motor insulation and shorten its life time. Installing a choke between the drive and the motor allows to:

- Reduce the harmonics, improving waveform linearity
- Increase the life time of semiconductors
- Reduce the motor operating temperature
- Reduce the audible equipment noise
- Limit the short circuit current

#### R3L/R THREE-PHASE SMOOTHING REACTORS FOR VARIABLE SPEED DRIVES (GRID SIDE)

Inverter Drives not only can damage the motor. Harmonics can penetrate into the electrical net and cause some problems to other electronic or electrical equipment.

Installing a choke between the drive and the electrical net allows to:

- Reduce the harmonics, improving waveform linearity
- Reduce interferences in the electrical net
- Increase the life time of semiconductors

### REACTORS CONSTRUCTION AND MATERIALS

- Windings in copper wire class 200°C or Aluminium
- Windings in copper wire class 200°C
- Magnetic cores from steel with reduced losses and necessary cuts.
- Double impregnation with Polyester resin for safety fixing and with oven dried varnish for protection against external agents.
- Terminals:
  - up to 20A with terminal board IP20
  - up to 90A, with lug terminals
  - over 90A with copper
- Insulation system approved by UL-CSA class F – File E215141
- EN 61558 , p.2-20
- IEC 61558
- UL 5085, p.1-2

