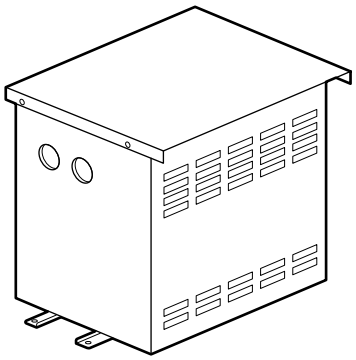
87045 LIMOGES Cedex
Phone: (+33) 05 55 06 87 87 - Fax: (+33) 05 55 06 88 88

# Three phases isolating transformer

**Cats. Nos.: 0 425 40/41/42/43/44**
**0 428 20/21/22/23/24**

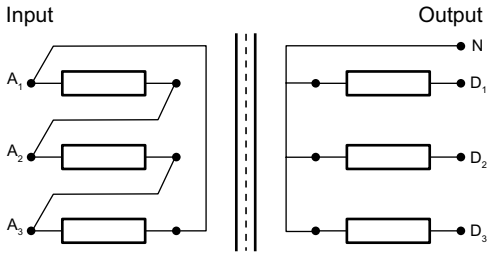


## CONTENTS



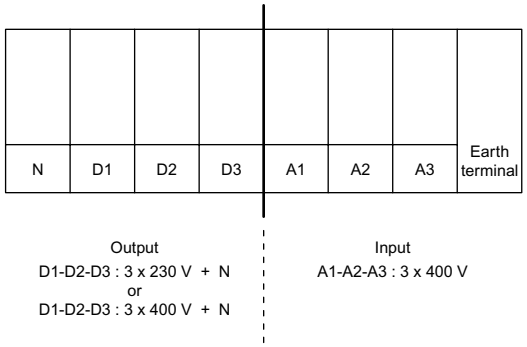
## 1. OPERATING PRINCIPLE

Transformer designed to supply equiments under LV (low voltage) like: LV lighting supply, LV industrial sockets supply, tools electro-portable for tiny conductive areas.




Sample connection

Primary 400 V, delta connection
Secondary 230 V, star connection, neutral out (42540 to 44)
Secondary 400 V, star connection, neutral out (42820 to 24)




## 2. MAIN CHARACTERISTICS

Dry type air cooled transformer.
Single phase 50 – 60 Hz frequency - Class 1.
Insulation and heating:
- Class B up to 1 KVA,
- Class H from 1.6 to 4 KVA.

Insulation voltage values:
- 4500 V between windings,
- 2250 V between primary and earth,
- 2250 V between secondary and earth.

Ambiant temperature: 25°C

### 2.1 Conformities

- Compliance with IEC 61558-2-4 standard.
- CE marking.
- CEM compatibility.

### 2.2 Transformers protection

Transformers can be protected by aM type fuse or D type Mcb on primary side.
Transformers can be protected by gG type fuse or C type Mcb on secondary side.

### 2.3 Casing

*2.3.1 Enclosure IP 21 – IK08*

RAL 7035.
Information: name-plaque on cover with:
- reference number,
- voltages,
- protection caliber device,
- rating,
- standard,
- frequency,
- Ucc.

*2.3.2 Magnetic core*

In silicon magnetic steel sheet 1W7 core quality.

*2.3.3 Connection*

Terminal blocs (cage system).

# Three phases isolating transformer

**Cats. Nos.: 0 425 40/41/42/43/44**
**0 428 20/21/22/23/24**

## 3. RANGE / ELECTRICAL CHARACTERISTICS

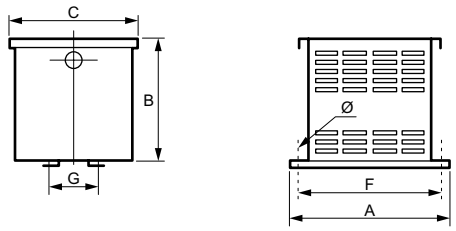
Primary: 400 V, delta connection,
Secondaire: 230 V, star connection, neutral out.

| Cats. Nos. | Rating | Losses | | Voltage drop | Efficiency at reference T° | Ucc | Primary terminals | Secondary terminals |
|---|---|---|---|---|---|---|---|---|
| | (VA) | No load losses (W) | Due to load losses at reference T° (W) | cos fi = 1 (%) | | (%) | (mm²) | (mm²) |
| 042540 | 630 | 30 | 22 | 2.5 | 92.3 | 2.3 | 4 | 4 |
| 042541 | 1000 | 38 | 24 | 1.9 | 94.1 | 1.8 | 4 | 4 |
| 042542 | 1600 | 65 | 82 | 4.3 | 91.0 | 3.4 | 10 | 10 |
| 042543 | 2500 | 65 | 125 | 4.2 | 92.9 | 3.3 | 10 | 10 |
| 042544 | 4000 | 108 | 136 | 3 | 94.2 | 2.4 | 10 | 10 |

Primary: 400 V, delta connection,
Secondaire: 400 V, star connection, neutral out Electrostatic shield.

| Cats. Nos. | Rating | Losses | | Voltage drop | Efficiency at reference T° | Ucc | Primary terminals | Secondary terminals |
|---|---|---|---|---|---|---|---|---|
| | (VA) | No load losses (W) | Due to load losses at reference T° (W) | cos fi = 1 (%) | | (%) | (mm²) | (mm²) |
| 042820 | 630 | 45 | 29 | 3.4 | 89.5 | 2.8 | 4 | 4 |
| 042821 | 1000 | 35 | 29 | 2.5 | 93.9 | 2.0 | 4 | 4 |
| 042822 | 1600 | 65 | 55 | 2.8 | 93.0 | 2.3 | 10 | 10 |
| 042823 | 2500 | 85 | 68 | 2.2 | 94.2 | 1.9 | 10 | 10 |
| 042824 | 4000 | 108 | 124 | 2.8 | 94.5 | 2.0 | 10 | 10 |

## 4. DIMENSIONS




### 4.1 Range 400V / 230V Y+N.

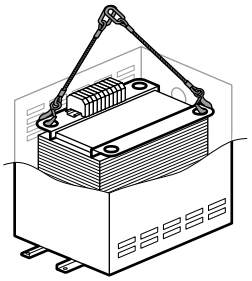
| Cats. Nos | Rating | Dimensions (mm) | | | Fixing (mm) | | | Weight |
|---|---|---|---|---|---|---|---|---|
| | (VA) | A | B | C | F | G | Ø | (Kg) |
| 042540 | 630 | 240 | 270 | 190 | 220 | 90 | 7 | 12 |
| 042541 | 1000 | 370 | 330 | 190 | 350 | 69 | 9 | 23 |
| 042542 | 1600 | 420 | 390 | 310 | 400 | 86 | 9 | 27 |
| 042543 | 2500 | 420 | 390 | 310 | 400 | 86 | 9 | 35 |
| 042544 | 4000 | 420 | 390 | 310 | 400 | 126 | 9 | 50 |

### 4.2 Range 400V / 400V Y+N.

| Cats. Nos | Rating | Dimensions (mm) | | | Fixing (mm) | | | Weight |
|---|---|---|---|---|---|---|---|---|
| | (VA) | A | B | C | F | G | Ø | (Kg) |
| 042820 | 630 | 240 | 270 | 190 | 220 | 90 | 7 | 15 |
| 042821 | 1000 | 370 | 330 | 190 | 350 | 69 | 9 | 25 |
| 042822 | 1600 | 420 | 390 | 310 | 400 | 86 | 9 | 31 |
| 042823 | 2500 | 420 | 390 | 310 | 400 | 86 | 9 | 38 |
| 042824 | 4000 | 420 | 390 | 310 | 400 | 126 | 9 | 58 |

## 5. HANDLING / LIFTING OPERATION

Lifting holes (Ø 25 mm) on upper fitting devices, cover opened.



## 6. PROTECTIONS

Minimal protection rating for primary supply line on transformer(1).

| Rating | 400V Tri | | | |
|---|---|---|---|---|
| | aM type fuse | | D type Mcb | |
| 630 VA | 2A | 013002 | 2A | 408054 |
| 1000 VA | 4A | 013004 | 4A | 408056 |
| 1600 VA | 4A | 013004 | 6A | 408057 |
| 2500 VA | 6A | 013006 | 10A | 408058 |
| 4 kVA | 10A | 013010 | 16A | 408059 |

(1) These values are indicative's one for transformers with inrush current value close to 25 In.

Secondary side protection.

| Rating | 230V Y+N | | | | 400V Y+N | | | |
|---|---|---|---|---|---|---|---|---|
| | Caliber | Fuse | Caliber | Mcb | Caliber | Fuse | Caliber | Mcb |
| 630 VA | 2 | 013302 | 2 | 407891 | 1 | 013301 | 1 | 407890 |
| 1000 VA | 4 | 013304 | 3 | 407892 | 2 | 013302 | 2 | 407891 |
| 1600 VA | 4 | 013304 | 6 | 407894 | 4 | 013304 | 3 | 407892 |
| 2500 VA | 6 | 013306 | 6 | 407894 | 4 | 013304 | 6 | 407894 |
| 4 kVA | 10 | 013310 | 10 | 407896 | 6 | 013306 | 6 | 407894 |

## 7. ADDITIONAL CHARACTERISTICS

### 7.1 Calorific potential (Mega Joules)

| 400 V / 230 V range | | 400 V / 400 V range | |
|---|---|---|---|
| Cats. Nos. | P. Cal. (MJ) | Cats. Nos. | P. Cal. (MJ) |
| 042540 | 165 | 042820 | 150 |
| 042541 | 180 | 042821 | 205 |
| 042542 | 255 | 042822 | 230 |
| 042543 | 260 | 042823 | 280 |
| 042544 | 370 | 042824 | 430 |

## 7. ADDITIONAL CHARACTERISTICS *(cont'd)*

### 7.2 Casing resistance to chemical agents

Resistance to spraying risk under ambient temperature.

++ : Excellent resistance (permanent exposure)
+ : Satisfactory resistance (long-term exposure)
– : Limited resistance (possibility of brief exposure)
– – : Low resistance (exposure should be avoided)

| | | | |
|---|---|---|---|
| **Aqueous solutions** | Cold water | | ++ |
| | Hot water | | + |
| | Vapour | | - |
| | Salt water 5 % | | + |
| | Hydrogen peroxide | | - |
| | Water + washing powder/liquid detergent | | + |
| | Water + surface active agents | | + |
| **Alcohols** | Ethanol | | + |
| | Methanol | | + |
| | Propanol | | + |
| | Butanol | | + |
| **Strong oxidizing acids** | Concentrate acetic acid | | + |
| | Nitric acid 5 % | | + |
| | Sulphuric acid 30 % | | + |
| | Hydrochloric acid 30 % | | + |
| | Perchloric acid 70 % | | ++ |
| | Hydrofluoric acid 70 % | | – – |
| | Chromic acid 50 % | | – |
| | Phosphoric acid 30 % | | + |
| **Weak acids** | Diluted acetic acid < 25 % | | + |
| | Citric acid | | ++ |
| | Lactic acid | | ++ |
| | Formic acid | | + |
| | Uric acid | | + |
| **Bases** | Ammonia | | + |
| | Sodium hydroxide (soda) | | + |
| | Sodium hypochlorite (bleach 12°) | | + |
| | Potassium hydroxide (potash) | | + |
| **Oils and greases** | Plant origin | Linseed oil | ++ |
| | | Peanut/Olive oil | ++ |
| | | Castor oil | ++ |
| | | Glycerin | + |
| | Mineral origin | Paraffin (Vaseline) | ++ |
| | | Car engine oil | + |
| | | Silicon oils | ++ |
| | | Cutting oils | ++ |
| | | Hydraulic oils | + |
| **Hydrocarbons** | Lead-free petrol | | + |
| | Gas-oil | | ++ |
| | Kerosene | | ++ |
| | White-spirit | | ++ |
| **Chlorinated solvents** | Trichloroethylene | | - - |
| | Trichloroethane | | - |
| | Perchloroethylene | | - - |
| | Methylene chloride | | - - |
| | Carbon tetrachloride | | - - |
| | Chloroform | | - |
| **Aromatic solvents** | Benzene | | + |
| | Toluene | | - |
| | Xylene | | + |
| **Aliphatic solvents** | Hexane | | ++ |
| | Heptane | | ++ |