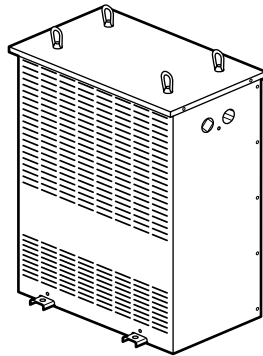


Three phases autotransformer

Cat. Nos.: 0 421 98/99
0 422 00/01/02/03/04/05/06/07
1 421 90/91 - 1 422 08/09



CONTENTS

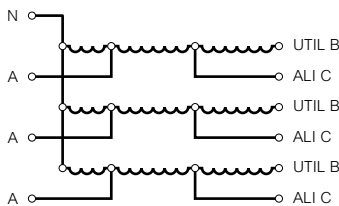
- 1. Operating principle 1
- 2. Main characteristics 1
- 3. Range / electrical characteristics 2
- 4. Dimensions 2
- 5. Handling / lifting operation 2
- 6. Protections 2
- 7. Additional characteristics 2

1. OPERATING PRINCIPLE

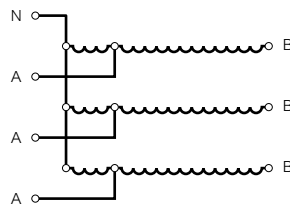
Sample are intended to supply general electric loads like electric motors, machine tools, air conditioners or general electric devices without neutral system change and/or insulation from main network.

Principle scheme.

0421 98 to 0422 05



0422 06/07, 1421 90/91 and 1422 08/09

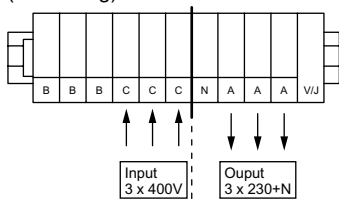


Sample connection

1) 400V / 230V step down using

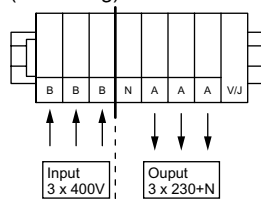
0421 98 to 0422 05

Input 400 V. star (C marking)
Output 230 V. star neutral out (A marking)



0422 06/07, 1421 90/91 and 1422 08/09

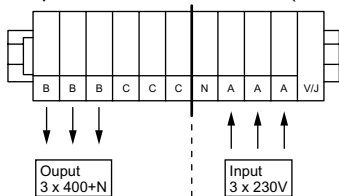
Input 400 V. star (B marking)
Output 230 V. star neutral out (A marking)



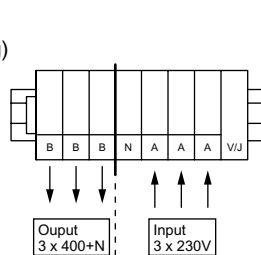
2) 230V / 400V step up using

0421 98 to 0422 05

Input 230 V. star (A marking)
Output 400 V. star neutral out (B marking)



0422 06/07, 1421 90/91 and 1422 08/09



2. MAIN CHARACTERISTICS

Dry type air cooled transformer.
Single phase 50 - 60 Hz frequency - Class 1.
Insulation and heating:
- Class B up to 4 KVA.
- Class H from 6.3 to 160 KVA.
Insulation voltage values:
- 3000 V between windings and earth.
Ambiant temperature:
- 35°C up to 4KVA.
- 40°C above.

2.1 Conformities

Compliance with standard: IEC 60076-11
CE marking.
CEM compatibility.

2.2 Transformer's 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 - IK 08

RAL 7035.
Information: name-plaque on cover with:
- reference number.
- voltages and currents.
- currents.
- rating.
- standard.
- frequency.
- Ucc.
Connecting diagram on magnetic core.

2.3.2 Magnetic core

In silicon magnetic steel sheet. 1W7 core quality up to 40 KVA.
0W6 core quality from 63 KVA to 100 KVA.

2.3.3 Connection

Terminal blocs: cage system or busbar and eyelet.

Three phases autotransformer

Cat. Nos.: 0 421 98/99
0 422 00/01/02/03/04/05/06/07
1 421 90/91 - 1 422 08/09

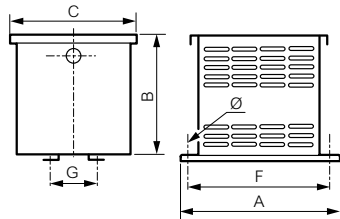
3. RANGE / ELECTRICAL CHARACTERISTICS

Voltage: 400 V - 230 V or 230 V - 400 V.

Cats. Nos.	Rating (kVA)	Losses		Voltage drop	Efficiency at reference T° cos fi = 1 (%)	Ucc (%)	Primary terminals		Secondary terminals	
		No load losses (W)	Due to load losses at reference T° (W)				(mm ²)	eyelet Ø	(mm ²)	eyelet Ø
042198	0.63	10	41.2	6.54	92.4	5.92	4		4	
042199	1	13	50.6	5.00	94	4.7	4		4	
042200	1.6	21.3	61.1	3.82	95.1	3.6	4		4	
042201	2.5	34	67	2.67	96.1	2.6	6		6	
042202	4	40	92.3	2.31	96.8	2.2	10		10	
042203	6.3	59.4	225	3.97	95.6	3.4	10		10	
042204	10	84.7	247	2.49	96.7	2.4	10		10	
042205	16	112	282	1.78	97.5	1.8	35		35	
042206	25	200	364	1.03	97.8	1.6	35		35	
042207	40	265	501	1.25	98.1	1.6	35	8	35	8
142208	63	210	738	1.22	97.6	1.6	70	10	70	10
142209	100	341	1302	1.27	96.9	1.5	120	10	120	10
142190	125	602	1336	1.1	98.4	1.1	150 ⁽¹⁾	13	150 ⁽¹⁾	13
142191	160	670	1550	1	98.6	1.1	150 ⁽¹⁾	13	150 ⁽¹⁾	13

(1) Dimensions primary and secondary terminals: 30 x 5 mm

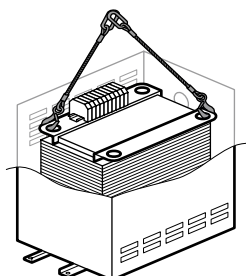
4. DIMENSIONS



Cats. Nos	Dimensions (mm)			Fixing (mm)			Weight (Kg)
	A	B	C	F	G	Ø	
042198	220	220	190	200	60	7	10
042199	240	270	190	220	59	7	11
042200	240	270	190	220	64	7	14
042201	240	270	190	220	86	7	20
042202	370	330	190	350	69	9	26
042203	420	390	310	400	86	9	28.5
042204	420	390	310	400	106	9	39.7
042205	420	390	310	400	126	9	53
042206	470	410	380	450	146	9	84.5
042207	530	460	380	510	146	9	125.5
142208	590	650	500	570	166	11	176
142209	590	650	500	570	206	11	188
142190	670	700	610	400	580	16	324
142191	670	700	610	400	580	16	361

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	230V Tri			400V Tri		
	aM type fuse	C type Mcb	D type Mcb	aM type fuse	C type Mcb	D type Mcb
630 VA	4A	10A	4A	2A	6A	2A
	013004	407827	408056	013002	407825	408054
1000 VA	4A	16A	6A	4A	10A	4A
	013004	407829	408057	013004	407827	408056
1600 VA	6A	20A	10A	4A	16A	6A
	013006	407830	408058	013004	407829	408057
2500 VA	10A	32A	16A	6A	20A	10A
	013010	407832	408059	013006	407830	408058
4 kVA	16A	50A	25A	10A	32A	16A
	013016	407834	408061	013010	407832	408059
6.3 kVA	25A	80A	40A	16A	50A	25A
	013025	409280	408063	013016	407834	408061
10 kVA	32A	100A	50A	20A	63A	32A
	014032	409281	408064	013020	407835	408062
16 kVA	50A		80A	32A		50A
	014050		409506	014032		408064
25 kVA	80A		125A	50A		80A
	015080		409508	014050		409506
40 kVA	125A		250A	63A		125A
	015097		420209	015063		409508
63 kVA	200A		250A	100A		160A
	017060		420209	015096		420007
100 kVA	315A		320A	160A		160A
	017570		422001	016555		420007
125 kVA	400A		400A	200A		200A
	017575		422002	017060		420208
160 kVA	500A		500A	250A		250A
	018075		422003	017065		420209

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

Secondary side protection.

Rating	230V				400V			
	Caliber	Fuse	Caliber	Mcb	Caliber	Fuse	Caliber	Mcb
630VA	2	013302	2	407891	1	013301	1	407890
1000VA	4	013304	3	407892	2	013302	2	407891
1600VA	4	013304	6	407894	4	013304	3	407892
2500VA	6	013306	6	407894	4	013304	6	407894
4kVA	10	013310	10	407896	6	013306	6	407894
6.3kVA	16	013316	16	407898	10	013310	10	407896
10kVA	25	013325	25	407900	16	013316	16	407898
16kVA	40	014340	40	407902	25	013325	25	407900
25kVA	63	015363	63	407904	40	014340	40	407902
40kVA	100	015396	100	409363	63	015363	63	407904
63kVA	160	016355	160	420017	100	015396	100	409363
100kVA	250	017365	250	420219	160	016355	160	420017
125kVA	315	017870	400	420207	200	016860	200	420218
160kVA	400	017875	400	420207	250	017365	250	420219

7. ADDITIONAL CHARACTERISTICS

7.1 Calorific potential (Mega Joules)

Cats. Nos.	P Cal. (MJ)	Cats. Nos.	P Cal. (MJ)
042198	150	042205	380
042199	150	042206	810
042200	160	042207	1130
042201	220	142208	1900
042202	240	142209	2210
042203	260	142190	3130
042204	290	142191	3630

7. ADDITIONAL CHARACTERISTICS (continued)

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	++	