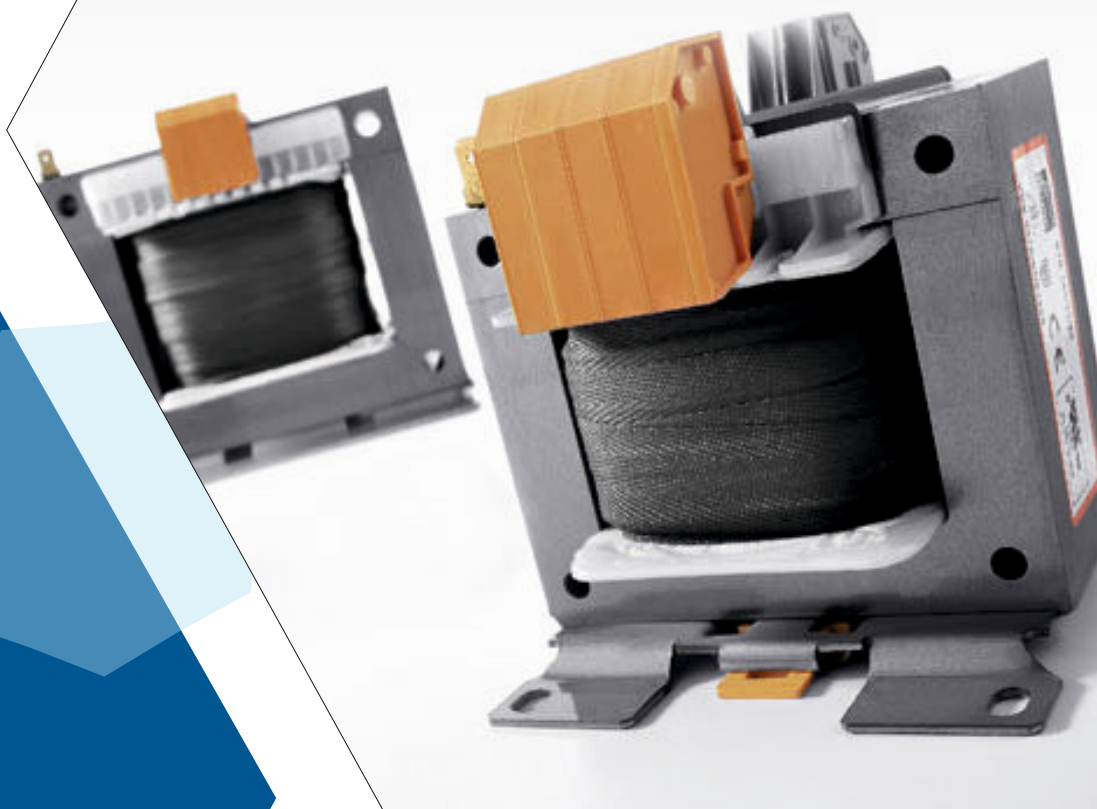


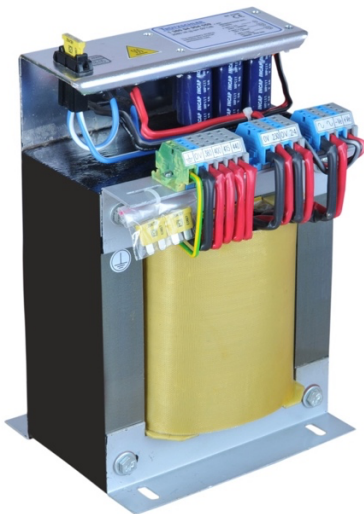


HITRON
WINDERS PVT. LTD.



MAGNETICS APPLIED

DEVELOPING BEST - IN - CLASS
TRANSFORMERS

**Technical Data**

Rated Input Voltage	: 220V _{AC} / 440V _{AC}
Rated Frequency	: 50 – 60 Hz
Rated Power	: 100VA to 6500 VA
Regulation	: <4%
Max. Ambient Temp	: 45° C
Insulation Class	: IEC = F / UL = Class 155
Cooling	: AN
Impulse withstand Voltage	: 2.5 kV _{A.C.}
Degree of protection	: IP00
Efficiency	: Up-to 94%

Features and Benefits

- Epoxy encapsulated surface
- Vacuum Pressure Impregnated (VPI) coils
- Excellent Performance & Compact Volume
- Primary side ± 15 V tapping for voltage adjustment
- Quick to cable up due to WAGO® terminals

Approval

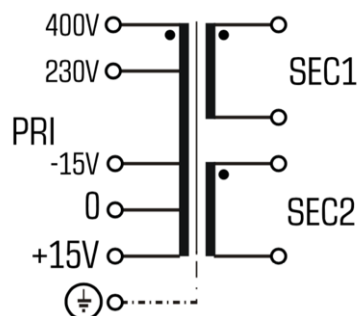
2014/35/EU – Low Voltage Directive

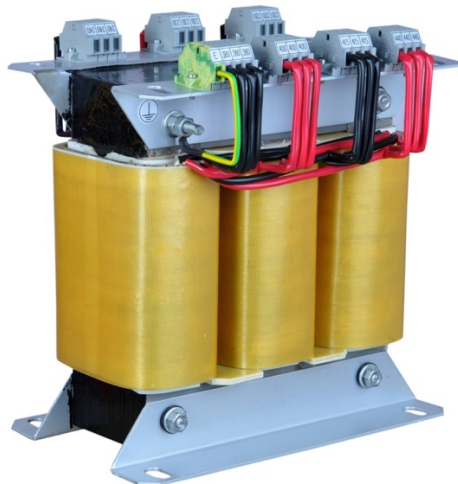
Application

- Control Circuit Panel
- Power Line Noise & Surges elimination
- PELV & SELV Circuit (Extra Low Voltage)

Standard

- EN 61558-1:2005
- EN 61558-2-2:2007
- EN 61558-2-20:2010
Safety of Power Transformers & Reactors
- IS 12021:2015
Control Transformers for Switchgear
- IEC 60947-2:2005
Low-voltage switchgear and control gear

Electrical schematic



Technical Data

Rated Input Voltage	: 3 x 220V / 415V _{A.C.}
Rated Output Voltage	: 3 x 220V / 415V _{A.C.}
Rated Frequency	: 50 – 60 Hz
Rated Power	: 5 kVA to 100 kVA
Vector Group	: YNa0 (Standard)
Regulation	: <3.5%
Max. Ambient Temp	: 45° C
Insulation Class	: IEC = F / UL = Class 155
Cooling	: AN
Impulse withstand Voltage	: 3.0 kV _{A.C.}
Degree of protection	: IP00
Efficiency	: Up-to 96%

Features and Benefits

- Epoxy encapsulated surface
- Vacuum Pressure Impregnated (VPI) coils
- Excellent Performance & Compact Volume
- Primary side ± 15 V tapping for voltage adjustment
- Quick to cable up due to WAGO® terminals

Approval



2014/35/EU – Low Voltage Directive

Standard

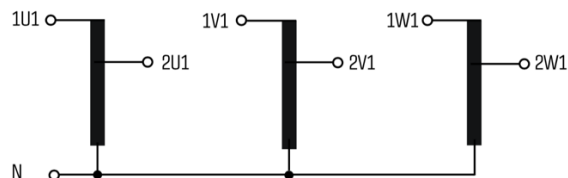


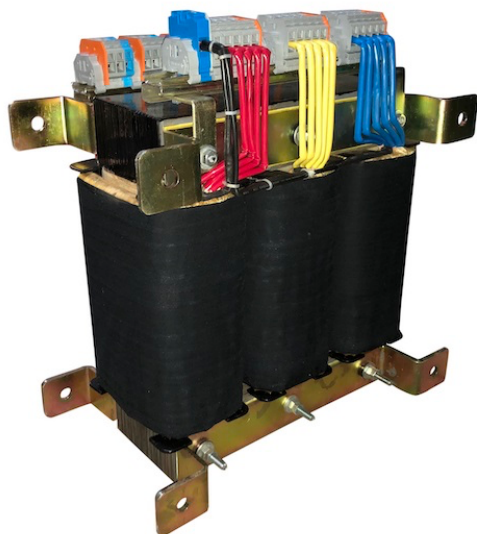
- EN 61558-1:2005
- EN 61558-2-2:2007
- EN 61558-2-20:2010
Safety of Power Transformers & Reactors
- IS 12021:2015
Control Transformers for Switchgear
- IEC 60947-2:2005
Low-voltage switchgear and control gear

Application

- Voltage adjustment, No electrical isolation

Electrical schematic





Technical Data

Rated Input Voltage	: 3 x 220V / 415V _{A.C.}
Rated Output Voltage	: 3 x 220V / 415V _{A.C.}
Rated Frequency	: 50 – 60 Hz
Rated Power	: 12 kVA to 100 kVA
Vector Group	: Dyn11 (Standard)
Regulation	: <4%
Max. Ambient Temp	: 45° C
Insulation Class	: IEC = F / UL = Class 155
Cooling	: AN
Impulse withstand Voltage	: 3.0 kV _{A.C.}
Degree of protection	: IP00
Efficiency	: Up-to 90%

Features and Benefits

Epoxy encapsulated surface
 Vacuum Pressure Impregnated (VPI) coils
 Excellent Performance & Compact Volume
 Primary side ± 15 V tapping for voltage adjustment
 Quick to cable up due to WAGO® terminals

Approval



2014/35/EU – Low Voltage Directive

Standard

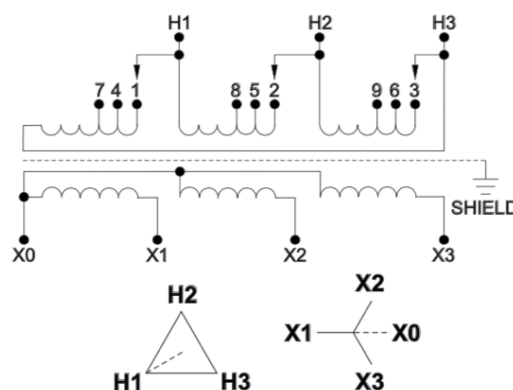


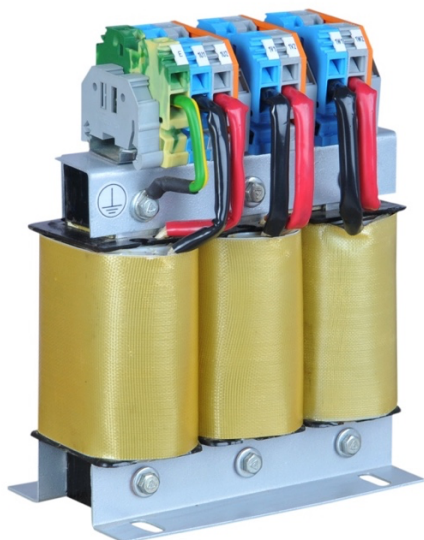
- EN 61558-1:2005
- EN 61558-2-2:2007
- EN 61558-2-20:2010
Safety of Power Transformers & Reactors
- IS 12021:2015
Control Transformers for Switchgear
- IEC 60947-2:2005
Low-voltage switchgear and control gear

Application

- Power Circuit Panel
- Power Line Noise & Surges elimination
- Protective Separation

Electrical schematic





Technical Data

Rated Voltage	: 3 X 380V _{AC} – 480V _{AC}
Rated Frequency	: 50 – 60 Hz
Impedance	: 3% , 5% @ 400V, 50 Hz
Rated Current	: 4A to 500 A
Max. Ambient Temp	: 45° C
Insulation Class	: IEC = F / UL = Class 155
Cooling	: AN
Over Load Capacity	: 1.5x current for 60s / hour
Impulse withstand Voltage	: 2.5 kV _{A.C.}
Degree of protection	: IP00
Efficiency	: Up-to 90%

Features and Benefits

Power harmonic damping
Protection Drive Electronics
Eliminate Drive Crosstalk
Limitation of inrush currents
Improvement of true power factor
Helps to meet power quality standards IEEE 519-2014

Approval



2014/35/EU – Low Voltage Directive

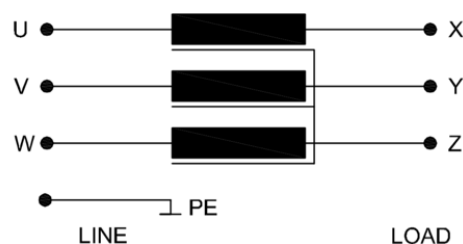
Standards

- EN 61558-2-20:2010
Safety of Power Transformers & Reactors
- IS 12021:2015
Control Transformers for Switchgear
- IEC 60947-2:2005
Low-voltage switchgear and control gear

Application

- Adjustable speed drive system
- Elevators
- Robots & Machinery
- Process automation equipment

Electrical schematic



Reactor selection table

3 % Line Reactor, 400V (50Hz)

Part No.	Rated current @ 45°C [A]	Rated Power @ 400V [HP]	Inductance 3% [mH]	Typical Power Losses [W]	Weight [kg]
HRL-3-4	4	1-2	5.450	32	1.5
HRL-3-8	8	5.5	2.740	50	2
HRL-3-12	12	7.5	1.830	62	2.5
HRL-3-18	18	10	1.220	92	3.4
HRL-3-25	25	15	0.880	100	5.0
HRL-3-35	35	25	0.630	138	5.4
HRL-3-45	45	30	0.490	162	8.8
HRL-3-55	55	40	0.400	180	10.2
HRL-3-80	80	60	0.275	235	11.4
HRL-3-100	100	75	0.220	290	13.8
HRL-3-130	130	100	0.170	325	15.7
HRL-3-160	160	125	0.137	410	20.0
HRL-3-200	200	150	0.110	520	25.5
HRL-3-250	250	175	0.087	580	27.5
HRL-3-320	320	215	0.068	720	35.8
HRL-3-400	400	270	0.054	900	45.5
HRL-3-500	500	350	0.043	990	52.5

5 % Line Reactor, 400V (50Hz)

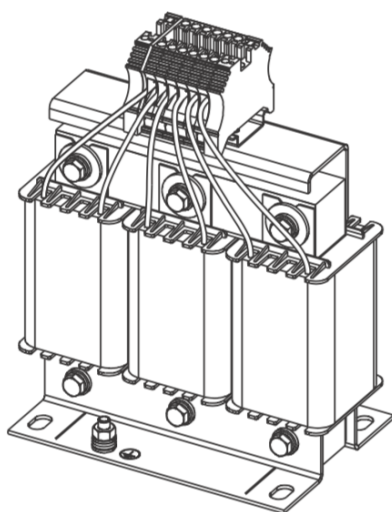
Part No.	Rated current @ 45°C [A]	Rated Power @ 400V [HP]	Inductance 5% [mH]	Typical Power Losses [W]	Weight [kg]
HRL-5-4	4	1-2	9.235	43	2.0
HRL-5-8	8	5.5	4.617	67	3.0
HRL-5-12	12	7.5	3.078	83	3.6
HRL-5-18	18	10	2.052	124	5.0
HRL-5-25	25	15	1.477	135	7.2
HRL-5-35	35	25	1.055	186	7.8
HRL-5-45	45	30	0.820	218	12.5
HRL-5-55	55	40	0.671	243	15.0
HRL-5-80	80	60	0.461	317	16.5
HRL-5-100	100	75	0.369	391	20.0
HRL-5-130	130	100	0.284	438	22.7
HRL-5-160	160	125	0.230	553	29.0
HRL-5-200	200	150	0.184	702	44.0
HRL-5-250	250	175	0.147	783	40.0
HRL-5-320	320	215	0.115	972	52.0
HRL-5-400	400	270	0.092	1215	66.0
HRL-5-500	500	350	0.073	1336	76.0

Power harmonic damping (THD_i) – 6 Pulse Rectifier/Drive

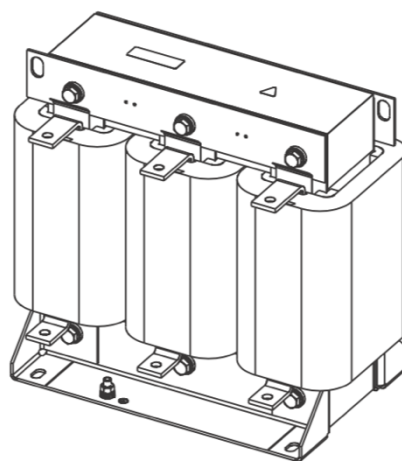
	Without line Reactor	3 % Line Reactor	5 % Line Reactor	8 % Line Reactor
5 th	80 %	40 %	32 %	26 %
7 th	60 %	16 %	12 %	9.0 %
11 th	18 %	7.3 %	5.8 %	4.3 %
13 th	10 %	4.9 %	3.9 %	3.1 %
17 th	7.3 %	3.0 %	2.2 %	0.7 %
19 th	6.0 %	2.2 %	0.8 %	0.3 %
Total Distortion (THD _i) %	102.5	44.13	34.96	28.04

Input / Output Connections

Wago® Terminal

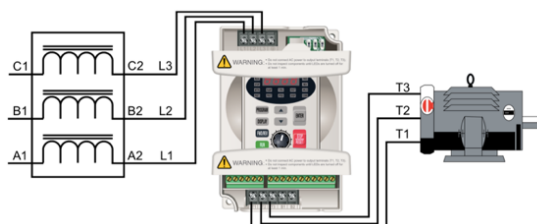


Busbar Terminal

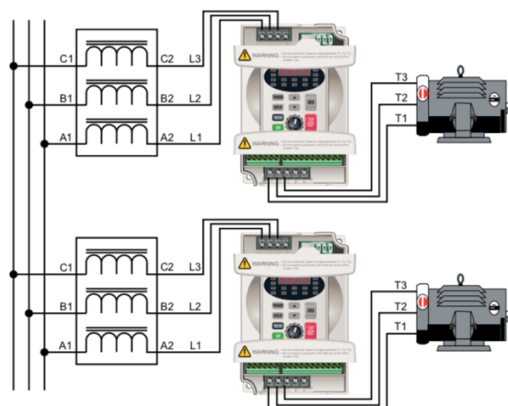


Application Configuration

Input side of the single drive



Input side of multiple drives





3 Φ - Line Reactors (Series-RXH)

General Data

Rated Supply Voltage	: 3 X 380V – 480V (+/- 10%)
Inductance	: 1 mH to 0.05 mH
Rated Current	: 50A to 480 A
Reactive Impedance	: 2% - 5% @ rated Current
Max. Ambient Temp	: 50° C
Efficiency	: Up-to 90%
Degree of protection	: IP00
Insulation Class	: F Class / H Class



Features

Reduction of mains harmonics
Limitation of inrush currents
Eliminate Drive Crosstalk
Protection of motor drive electronics
Improvement of true power factor

Application

- Adjustable speed drive system
- Elevators
- Robots & Machinery
- Process automation equipment

Standards

EN 61558-1:2005

EN 61558-2-2:2007

EN 61558-2-20:2010

Safety of Power Transformers & Reactors

IS 12021:2015

Control Transformers for Switchgear

IEC 60947-2:2005

Low-voltage switchgear and control gear

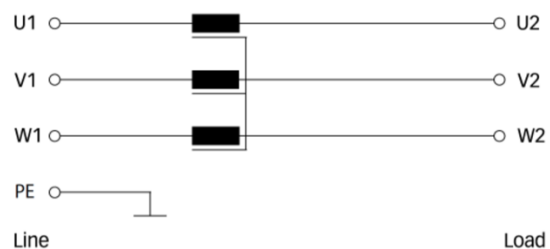
Certifications



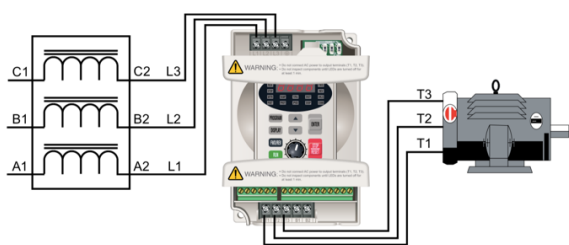
2014/35/EU – Low Voltage Directive

Electrical Schematic

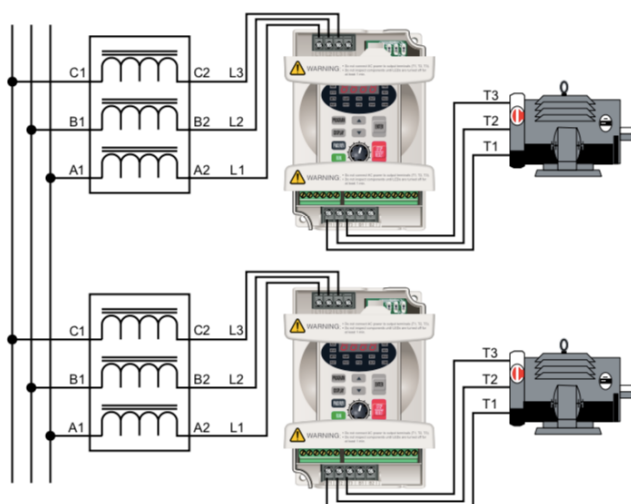
Typical electrical schematic



Application Configuration



(Input side of the single drive)

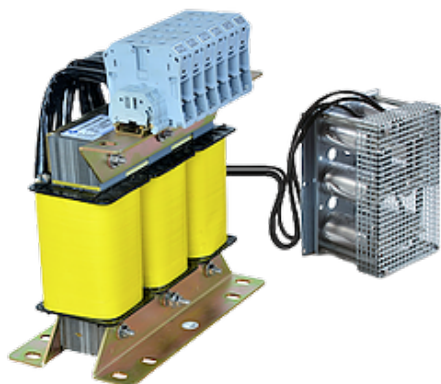


(Multiple drives)



VFD Output LC Sine-Wave Filter

General Data



Operating Voltage	: 3 X 380V – 480V (+/- 10%)	
Motor Power	: 0.5 HP to 150 HP	: NLX Series
	: 200 HP to 350 HP	: HLX Series
Max Cont. Current	: 1A to 225 A	: NLX Series
	: 255A to 450A	: HLX Series
Motor frequency	: 50/60 Hz	
Switching frequency	: 1kHz - 4kHz	
Capacitor Bank	: EPCOS (Y or Δ Connected)	
Max. Ambient Temp	: 50° C	
Insulation Class	: Class F	

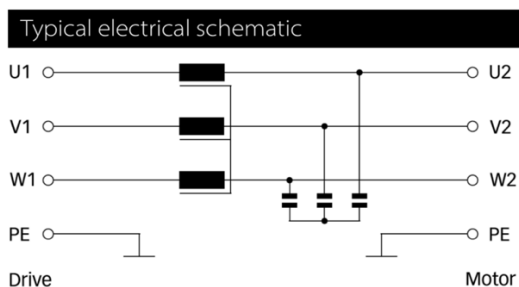
Features and Benefits

Eliminate high dv/dt stress on motor winding
Convert rectangular PWM voltage into smooth sinewave
Extend Motor cable length capability
Reduces the core losses inside motor
Increase motor life
Reduce motor audible noise

Application

- HVAC Application
- Pumps, Conveyor, Compressor
- Motor drive with long motor cable
- Motor drive with multiple motors in parallel

Electrical Schematic



Certifications

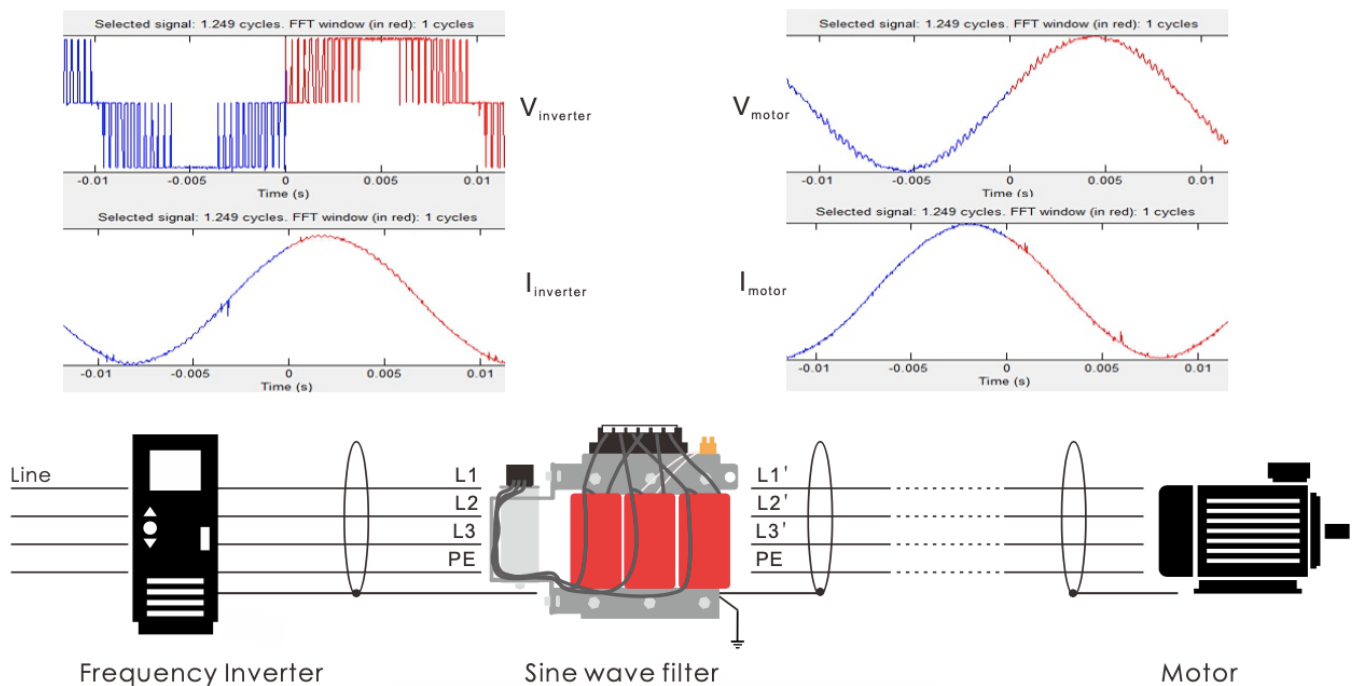


2014/35/EU – Low Voltage Directive

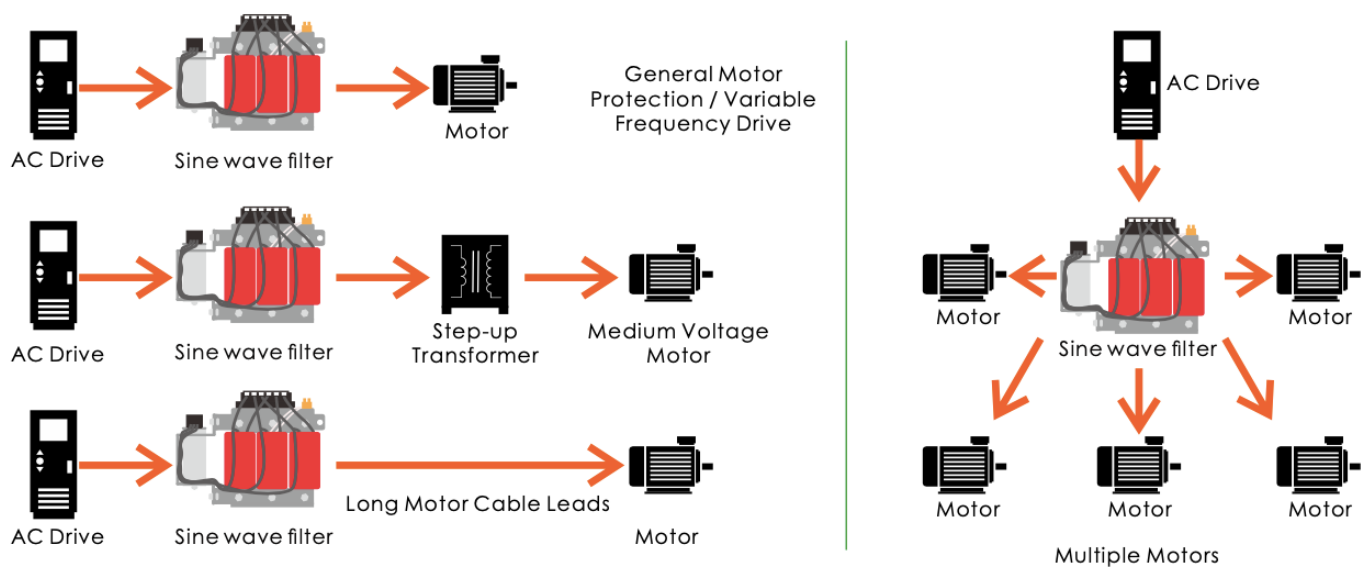


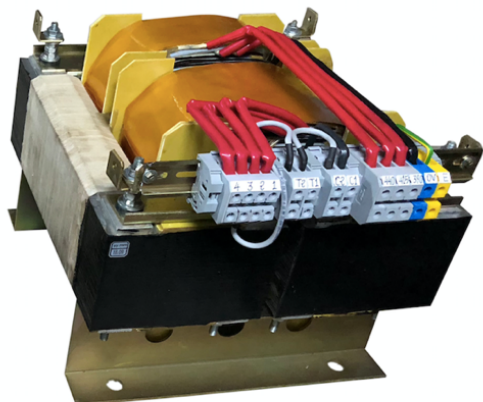
VFD Output LC Sine-Wave Filter

Block Diagram



Application





Technical Data

Rated Input Voltage	: 380 V _{A.C.} – 440 V _{A.C.} / 50 Hz
Rated Output Voltage	: 500 V _{A.C.} – 2100 V _{A.C.} / 50 Hz
Rated Power	: 6 kW – 25 kW
Max. Ambient Temp	: 50°C
Ignition Voltage	: x2.2 rated V _{A.C.}
Cooling	: AN
Impulse withstand Voltage	: 3.0 kV _{A.C.}
Insulation Class	: IEC = F / UL = Class 155
Efficiency	: Up-to 90%

Features and Benefits

Epoxy encapsulated surface
Vacuum Pressure Impregnated (VPI) coils
Excellent Performance & Compact Volume
Primary/Secondary side $\pm 3\%$ for voltage adjustment
Quick to cable up due to WAGO® terminals
EPCOS UL Capacitor "Super MotorCap™"
2 Step Dimming – 70% , 50%

Approval



2014/35/EU – Low Voltage Directive

Standard



- EN 61558-1:2005
- EN 61558-2-2:2007
- EN 61558-2-20:2010
Safety of Power Transformers & Reactors
- IS 12021:2015
Control Transformers for Switchgear
- IEC 60947-2:2005
Low-voltage switchgear and control gear

Application

- Adhesive Bonding
- Wood Paint Curing
- Printing Label curing
- Fiber Wire Coating



HITRON WINDERS

Passive Harmonic-Filter HarmoniQ™

DATASHEET
PHF-PQ



Technical Data

Rated Voltage	: 390V – 440V (Nominal : 415V _{AC})
Rated Freq	: 50Hz +/- 1%
Suitable Converter	: 3-phase diode bridge rectifier VFD
Rated Power	: 70kW to 500kW
Max. Ambient Temp	: 50° C
THDi	: 4.8% – 5.8% (@full load**)
Cooling	: Air Forced Cooling (In-Side Panel)
Overload Capability	: 150% of current for 1 min
Insulation Class	: IEC = H / UL = Class 180
Efficiency	: Up-to 98%
Insulation level	: 2.5kV _{AC} For 1 Minute
Degree Of Protection	: IP00
Capacitive kVar	: <25%

Features and Benefits

Helps to meet IEEE 519-2014 compliant

UL Certified Insulation : Nomex® 410 / YT510

UL Certified Heavy Duty Capacitor

Compact Size & Easy Installation within Panel

Improve Power Factor upto 0.985

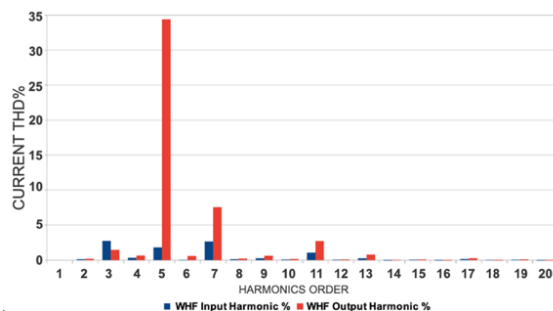
Increase Drive UpTime

**THDi @ full load with default line THD_v <2%, Voltage Unbalance <1%

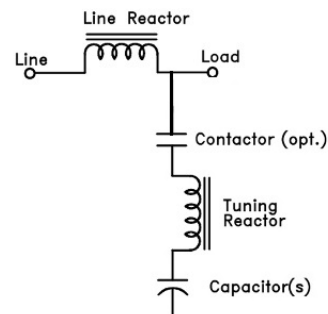
Approval



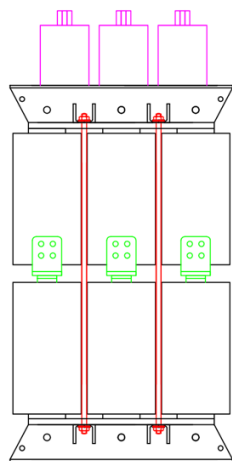
2014/35/EU – Low Voltage Directive



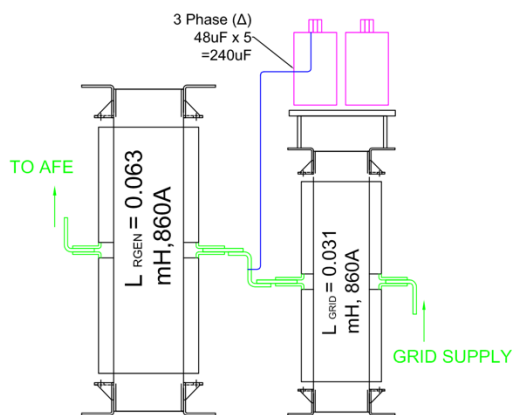
ONE-LINE DIAGRAM



www.hitronwinders.com



FRONT VIEW

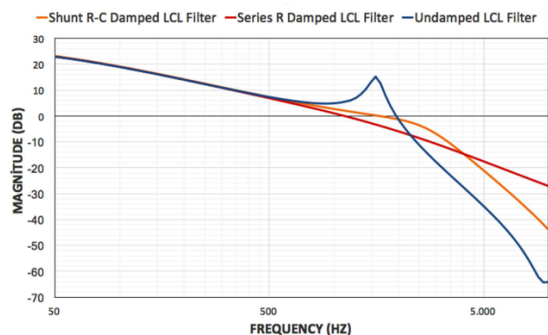


SIDE VIEW

Approval



2014/35/EU – Low Voltage Directive



Technical Data

ActiveFrontEnd (AFE) Rated : 150kW to 500kW / 50Hz

Max. Ambient Temp : 45°C

THDv / THDi : ≤ 5.0% (full load)

Cooling : AN / AF

Switching Frequency : 2kHz to 8kHz

Insulation Class : IEC = H / UL = Class 180

Efficiency : Up-to 98%

Features and Benefits

Limits Voltage/Current Harmonic distortion near to ~ 5%

Helps to meet IEEE 519-2014 compliant

Increases drive uptime

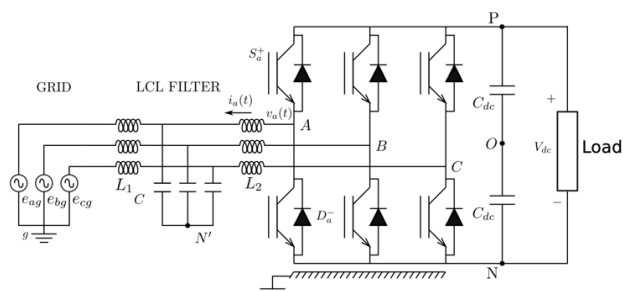
Smooth Sine Waveform

Excellent Insulation : Nomex® 410 / YT510 (UL Approved)

Heavy Duty Power Capacitor (UL Approved)

Anti Resonant Restive Damping

Electrical Schematic





Technical Data

Nominal voltage	: 380V _{A.C.} — 420V _{A.C.}
Rated Current	: Up-to 100A
Operating frequency	: 800Hz to 1200Hz
Switching Frequency	: 8kHz to 12kHz
Cooling	: AN
Insulation Class	: IEC = F / UL = Class 155

Features and Benefits

Limits dv/dt distortion
Frequency drives and servo drives >300 Hz
Ideal for high speed motor
Heavy Duty Compact Capacitor

Approval



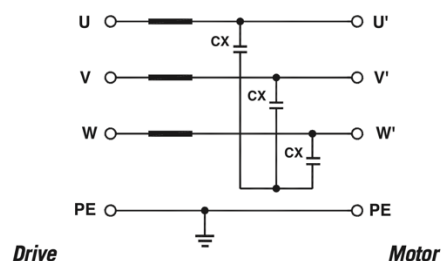
2014/35/EU — Low Voltage Directive

ATTENUATION INDICATOR

High	Very High	Excellent

Electrical Schematic

ELECTRIC DIAGRAM





HITRON Winders Pvt. Ltd.

Mfr. Transformers & Reactors

Our Prestigious Clientele

TRÜTZSCHLER

Truetzschler india pvt ltd,

Supplying Isolation Transformers & Reactors since last 18 Years.



Erhardt + Leimer (India) Pvt. Ltd.

Supplying High Freq. coils for corona treatment machines since last 10 years.

M MAMATA

MAMATA Machinery Pvt. Ltd

Supplying 3Phase Isolation Transformers of Export machines last 15 Years.



**INDUCTOTHERM
GROUP**

Inductotherm india pvt ltd

Supplying Harmonic Filter Choke & Isolation Transformers.



HAITIAN

PLASTICS MACHINERY

HAITIAN HUAYUAN MACHINERY(INDIA) PVT LTD

Supplying 3Phase Reactors for injection molding machinery.

**USHA
NEUROS**

USHA NEUROS TURBO LLP

Supplying Passive-Harmonic-Filters to Turbo Machinery.

www.hitronwinders.com

Production Facility



- Office Area

- Account department with GST Tally-Powered Software.

- Test Facility

- 1- Φ Dimmer : 1 No.
- 3- Φ Dimmer : 2 No.
- Current Source : 1 No.
- Trans NL Power Analyser - PM9801
- Multi-meter (Fluke-115 T_{R.M.S}, Rishabh T_{R.M.S})
- Clamp Meter (Fluke-325 T_{R.M.S}, Rishabh T_{R.M.S})
- Oscilloscope : Tektronix
- LCR Meter : 2 No, 1 No: Scientific-SM6023
- Micro-Ohm Meter-5A : UT620 (For Temperature Rise Test)
- Infrared Thermometer (Fluke-59 Max)
- Digital Core (Lamination) Loss Meter (W/Kg)
- H.V. Tester
- H.V. Probe (6kV_{Max} : Fluke 80K-6)
- Megger Meter (1000V_{DC})
- Power Quality Analyser – HIOKI Model : PQ3100

- Production Area

- Round Enamel Winding Facility (3 Medium & 1 Heavy Winding Machine)
- Foil Winding Machine : 400mm
- Brazing Facility
- Lamination, Assembly, Semi-Assembly, Termination, QC Area

- Oven & Vacuum Facility (VPI Plant)

- Vacuum Tank : 1
- Baking Oven with Controlled Temperature: 1 No. Max up-to 200°C

Basic Raw Material

- Enamel Copper Wire & Strip

- **R.R. Shramik (R.R. Global) – F Class (155°C Only)** H Class on request

- Lamination

- **CRGO – 0.27/0.30/0.35 mm Only**
Under restricted parameter of Max 1.3 W/Kg Loss

- Impregnating Varnish for VPI Plant

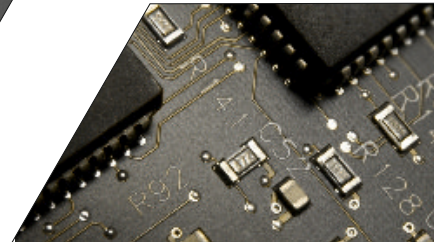
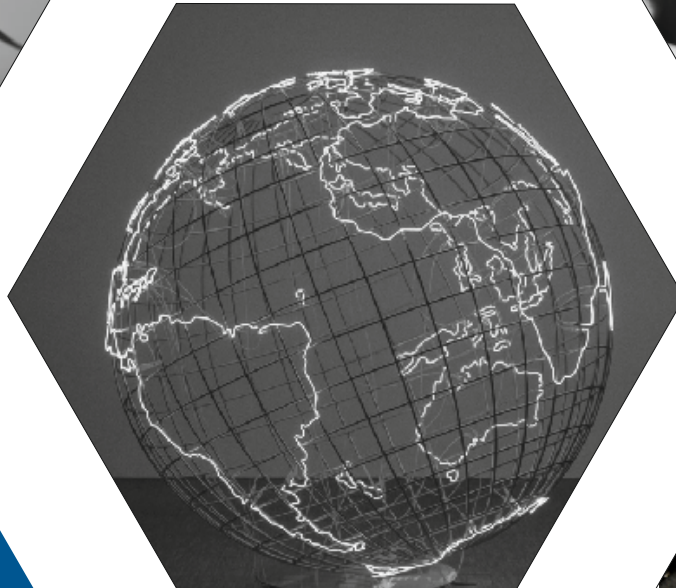
- **ELANTAS ISONEL 31 J – F Class (155°C Only)** - UL Approved
- **ELANTAS ISONEL 31 J (Thinner)**

- Insulating Paper

- **NOMEX[®]** (on request)
- **FLOROTHERM F CLASS**

- Terminal

- **WAGO[®]**
- **PHOENIX-Contact[®]**
- **Copper Bus Bar** For Heavy-Current Only



CONTACT US

HITRON WINDERS PVT. LTD.

A-2, MAHADEV ESTATE,
PHASE-III, NR. RAMOL POLICE STATION,
CTM-RAMOL ROAD, RAMOL,
AHMEDABAD - 382449 GUJARAT, INDIA.

CIN : U29100GJ2021PTC121535



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