

400V/400V DRY TYPE ISOLATION THREE PHASE TRANSFORMERS FOR PV PLANTS

The only one specifically designed for the construction of photovoltaic systems
 Certified efficiency and losses

- ✓ Natural cooling AN-type, suitable for indoor installation.
- ✓ Electrolytic COPPER windings (Aluminum for Extra range – 50kVA Advantage range)
- ✓ Low-losses magnetic core
- ✓ Electrostatic insulation screen between primary and secondary to be connected to earth

ELECTRIC FEATURES

Rated power:	10kVA to 500kVA
Network side voltage:	400V DELTA or STAR+ N
Inverter side voltage:	400V Star - N
Frequency:	50/60 Hz
Connection group	DELTA/stars-N or STAR-N/star-N
CEI vector group	Dyn11 or YNyn0
Efficiency:	Ca. 97-98%
Isolation level (effective value)	4.2 kV
Inrush current:	< 15 In
Short circuit voltage (Vcc%)	<4%
Temperature class	F
Maximum temperature rise (25°C)	115°C
Reference environmental temperatures	-5°C to +35°C
Acoustic pressure level LpA 1m.	< 60 dB (A)
Relative air humidity	50% - 95%
Operating altitude without derating:	up to 1000 m.
Degree of protection	IP00
Protection class	I
Applied standards:	EN61558-2-4
	Meets CEI 11-20 requirements

MECHANICAL FEATURES

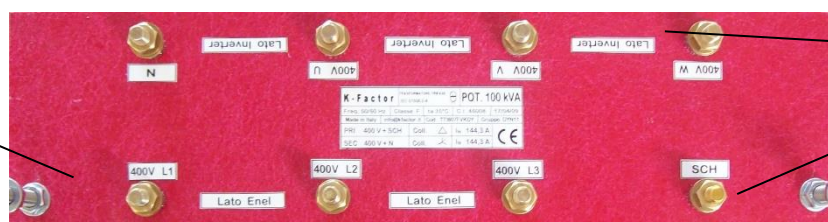
Lifting lugs	Yes
Rating plate	Yes
Ground bolt	Yes

For installations at higher altitudes, an appropriate power reduction ("derating") should be considered.



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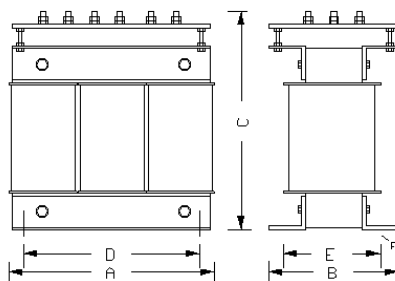
Network side connections



Inverter Side Connections
(3P-N)

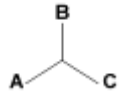
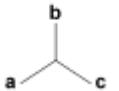
Screen to be connected to ground

Typical TTI-FV model link plate (Dyn11 vector group link)



Code	Rated Power	Losses			Eff. %	Dimensions AXBXC mm.	weight Kg.
		Fe	Cu	Tot.			
TTI387FV	10KVA	120	330	450	95,9	360X220X350	75
TTI427FV	15KVA	170	470	640	96,0	360X260X350	105
TTI467FV	20KVA	210	670	880	96,2	420X240X430	140
TTI507FV	25KVA	250	690	940	96,4	480X230X460	170
TTI547FV	30KVA	300	880	1180	96,5	480X250X460	190
TTI627FV	40KVA	320	1020	1340	96,8	480X300X460	240
TTI707FV	50KVA	343	894	1237	97,5	540X340X550	265
TTI727FV	60KVA	339	1196	1535	97,4	600X330X610	275
TTI757FV	75KVA	427	1270	1697	97,7	600X360X610	338
TTI767FV	80KVA	451	1430	1881	97,7	600X370X610	350
TTI787FV	90KVA	410	1372	1782	97,8	600X380X610	375
TTI807FV	100KVA	417	1563	1980	98,0	720X360X730	366
TTI809FV	110KVA	417	1849	2266	98,0	720X370X730	414
TTI811FV	120KVA	517	1763	2280	98,1	720X390X730	454
TTI812FV	125KVA	517	1736	2253	98,2	720X390X730	454
TTI815FV	140KVA	517	1909	2425	98,3	720X390X730	465
TTI817FV	150KVA	564	1874	2438	98,4	720X400X730	502
TTI819FV	160KVA	644	1926	2570	98,4	840X420X850	584
TTI821FV	170KVA	709	1998	2707	98,4	840X520X850	621
TTI823FV	180KVA	748	1875	2623	98,5	840X440X850	664
TTI827FV	200KVA	861	1912	2773	98,6	840X460X850	740
TTI831FV	250KVA	1051	2366	3417	98,6	960X490X970	903

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Conn.	network side	inverter side	network side	inverter side
YNyn0				
Dyn11 (YNd11)				

It is essential to choose the VECTOR GROUP OF THE ORDER

Note: The connection can be DELTA-star or STAR-star as needed. Refer to the technical manual of the inverter and the scheme of the plant to be implemented for the decision about the connection group.

According to the choice between Dyn11 link and YNyn0, the product code will be completed with the suffix -DY or -YY, respectively.

It is possible on the inverter side to connect to "open star" if the configuration of the inverters requires it, suffix -Yya

OPTIONS AVAILABLE ON DEMAND

- **voltage adjustment sockets : 2 x 2.5%**
- **Drilled connection bolts for the passage of the padding wire (only for 40kva J/K ranges)**

ACCESSORIES AVAILABLE ON REQUEST

PROTECTION BOX

- **Installed in self-ventilated IP23 epoxy painted metal box (indoor use)**
 Provision for lifting lugs
 Cable input from the side and bottom
 Provision for input/output cable glands, and for forced ventilation with ip55 filters
 Internal and external rating plate



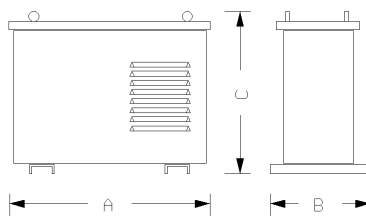
SAM01 : SAM10



SAM07-44/09-44



SAMV-44 / SAMV9-44



Code	Suitable for	dimensions mm.	Weight kg
SAM03	10 kVA	475X355X495	20
SAM04	15-20 kVA	550X390X553	25
SAM05	25-30 kVA	710X440X670	40
SAM07	40-90 kVA	775X570X825	50
SAM09C	100-150 kVA	900X640X1030	75
SAM10	160-600 kVA	1300X1000X1300	110

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- **Installed in METAL protection box IP44 painted in polyester with RAL7035 powders with cooling fans with IP57 filters (for indoor/outdoor)**

Code	Suitable for	dimensions mm.	Weight Kg
SAM07-44	10-80 kVA	825x570x825	55
SAM09C-44	100-180 kVA	940x640x1030	80

Not available for larger transformer sizes

- **Installed in IP44 protection box in SMC (fiberglass) with metal anchoring frame and thermal dissipation fans up to 2000W losses (for indoor/outdoor)**

Code	Suitable for	dimensions mm.	Weight Kg
SAMV-44	10-80 kVA	860x450x1150	40
SAMV9-44	100-180 kVA	860x910x1150	80

Not available for larger transformer sizes

For outdoor boxes, it is recommended that the transformer should be used overnight to avoid condensation build-up inside enclosures, thus causing discharges and/or dispersions.

Certifications

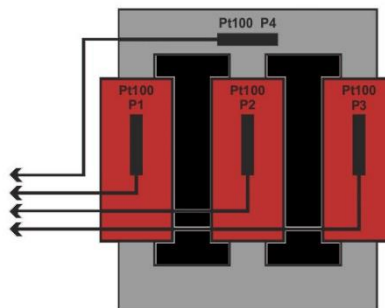
- **Environmental compatibility certification (available for metal box models)**
Sound Level < 50dB(A) @ 1mt
Electromagnetic Emissions Level < 0.2ut
- **CE Certification**

MONITORING UNITS

- **Temperature control unit (price includes the insertion of the thermostats, but not the installation/installation of the control unit)**

Item Code	Description	Amount
PROTTDQ61	DQ61 MONITORING UNIT	1
PT1001M-25	PT100 SENSOR 3 WIRES 2500 MM.	3
PROTDQ61485	DQ61 MONITORING UNIT WITH RS485	1
PT1001M-25	PT100 SENSO 3 WIRES 2500 MM.	3
PROTT30	T30 MONITORING UNIT	1
PTC130-3	PTC 2 wires 3Mt. 130°C	3
PTC160-3	PTC 2 wires 3Mt. 160°C	3

Device for protection, control, thermal monitoring of transformers engines, electric generators, industrial applications model DQ61



DQ61 device is a temperature controller specifically designed for electrical equipment such as transformers, motors, generators.

DQ61 protects the machine when overload can lead to a rise in the temperature of the windings. Moreover, it controls the fans to maintain the temperature of the machine and preserve the normal working conditions.

The DQ61 detects alarm conditions and intervenes disconnecting the transformers before they come to a dangerous situation.

A self-diagnostic system continuously monitors the status of the temperature sensors and of the internal system, reporting potential anomalies. It can handle up to four temperature sensors Pt100 and three alarm stages.

The model DQ61 is a front panel mountable with overall dimensions of 96x96mm (3.77"x3.77" 4.5" depth)

An Oled high contrast graphic display allows the simultaneous visualisation of the four temperatures monitored and of the alarms.

The scrolling menu helps and guides the parameters programming with clear messages, in the language selected by the operator

– Power supply	Universal 90...240Vdc/Vac 50/60Hz and 16...26Vdc/ac, <4VA
– Input voltage range	± 10%
– Available inputs	N°4 RTD Pt100 3 wires
– Cable length compensation	Up to 500m (0,5mm ²)
– External connections	Terminals wiring up to AWG 17 for Pt100 un up to AWG 14 for power and relays
– Temperature range	-20 ... +200°C
– Accuracy	Better than 0,4°C ±1 digit
– Output alarm relays	N°2 SPDT 5A 250V for alarm and TRIP
– Output fan relay	N°1 SPDT 5A 250V
– Output fault relay	N°1 SPDT 5A 250V
– Display	Graphic OLED 2,4" 128x64 pixel
– Keyboard	Touch Capacitive
– Alarms and signals	4 dedicated led with test message on display
– Menu Language	English, Espanol, French, Italian, more on request
– Unit of measure	°C or °F
– Dimensions	Front 96x96mm, depth 115mm
– Mounting	Front panel
– Panel cut-out	90x90mm
– Building according to CE directives	2006/95/CEE (Low voltage) and 2004/108/CEE (EMC)
– Protection against electric noise	EN61326-1
– Dielectric strength	2500Vca for 1 minute

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- **Isolation**
 - **Frontal protection**
 - **Ambient operating temperature**
 - **Ambient operating humidity**
 - **MTBF**
 - **Data storage**
 - **Recorded data**
 - **Remote control (optional)**
 - **weight**
- Better than 100MOhm at 500Vcc ground-other terminals
 IP40, IP65 optional
 -20 ... +60°C
 Max 90% not condensing
 Better than 100.000 h
 More than 10 years
 Max temp on each channel; Each alarm number of activations
 Optoisolated RS485, MODBUS RTU protocol
 330 g. (unit only) 350 g. (with manual and packing)

Self diagnosis with error signal on the FAULT relay

Integrated counters (partial and total) for hours of work done

Ability to schedule the regular switch-on of the fans from the service menu

FCD function: ability to set an alarm if the temperature change is too fast (°C/s) from the service menu

Ability to disable alarms for probes P1 P2 and P3 from the service menu

Ability to disable alarm activation for probe P4 from user menu

TERMINAL BLOCKS

