

AC/DC power supplies

KWant Family

KWant75 NEW, 75 W



Basic specifications

Power	75 W
Input current	up to 15A
Input voltage	~220 (100...264) VAC
Output voltage	=5 VDC, =24 VDC, =27VDC
Efficiency.....	88-93%
Ambient operating temperature..	-40...+100 °C; -50...+100 °C
Dimensions	61×111×25 mm
Warranty	2 years

Advantages

- ◀ MIL-STD-461E without external components
- ◀ MIL-STD-810G
- ◀ Low ripple level of 20 mV (at Uout=27 VDC)
- ◀ Low level of conducted emissions



Description of KWant75 on the manufacturer's website:
eng.kwsystems.ru/catalog/acdc/models/4

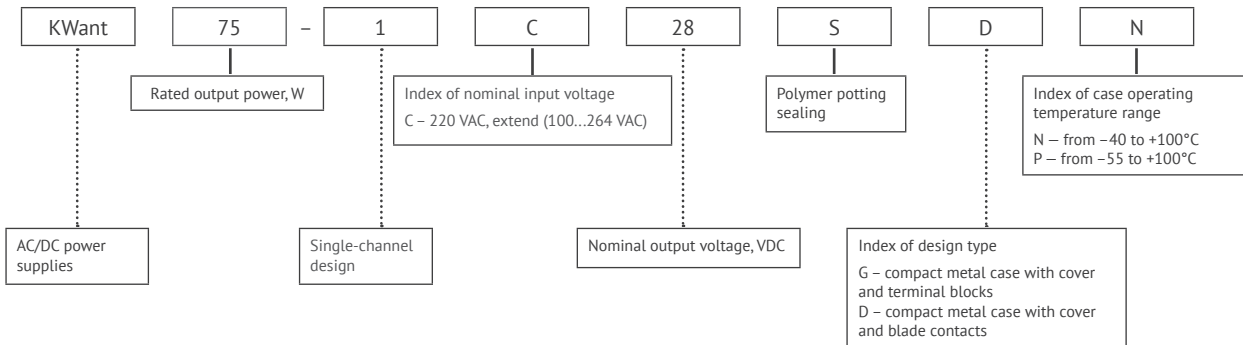
Order registration

+7 473 200 87 80, Global Operations Team

Technical support

Mikhail Timokhin, mtimohin@kwsystems.ru

Ordering information



Input specifications*

Parameter	Value
Input voltage range, VAC**	C ~100...264 (=141...372)
Transient deviation range, VAC	C ~100...264
Transient time	C -
Mains frequency range, Hz	C 47...53
Consumed current, A	<1
I ² t (Joule integral) for pulse-type current	50
Pre-fuse	Slow blow 3 A

Output specifications*

Parameter	Value			
Nominal output voltage, VDC	5	12	24	28
Efficiency, %	88	92	93	93
Rated output current, A	15	6.25	3.12	2.68
Ripple and noise (peak-to-peak), mV	<30	<30	<25	<25
Line and load regulation, %	max 1		max 0.5	
Start-up time, ms	<50			
Maximum load capacity	not limited			

Protections

Type of protection	
Short-circuit protection*	auto recovery
Overload protection	P _{max} <1.2 P _{nom}
Overvoltage protection level*	<125% U _{out nom.}
Overheat protection	triggers at case temperature > 85°C

* All specifications are valid for normal climatic conditions (ambient temp. +15...+35°C; relative humidity 45...80%; air pressure 8.6*10⁴...10.6*10⁴ Pa), U_{in nom.}, I_{out nom.}, unless otherwise noted.

** Maximum output power for input voltage range C (wide range) at U_{out} 100...187 VDC is reducing according to power derating VS input voltage diagram.

Basic specifications**

Nominal output voltage, VDC		5	12	24	28
Type of connection		screw terminals and blade contacts			
Protection level		IP20			
Case temperature, operating	«N»	-40...+100°C			
	«P»	-55...+100°C			
Case temperature, storage		-55...+100°C			
Humidity		98% / 35°C			
Isolation voltage	in /case	~1500 VAC			
	in /out	~1500 VAC			
	out /case, out/out	~500 VAC			
Isolation resistance @ 500 VDC		≥ 20 MOhm min			
Cooling		convective			
Environmental influence standards		design to meet MIL-STD-810G			
EMC standards		MIL-STD-461E			
Thermal resistance case-ambient		6.4°C / W			
Typical MTBF, Hrs		800 000	2 000 000	2 400 000	2 400 000
Case material		metal			
Dimensions, mm		111×61×23,5			
Weight, kg		< 0.3			
Warranty		2 year			

Terminal specification, input/output

Cross section of the flexible conductor, mm ² (max)	0.5...1.5
Cross section of AWG conductor, min	28
Cross section of AWG conductor, max	12
Strip length, mm	6

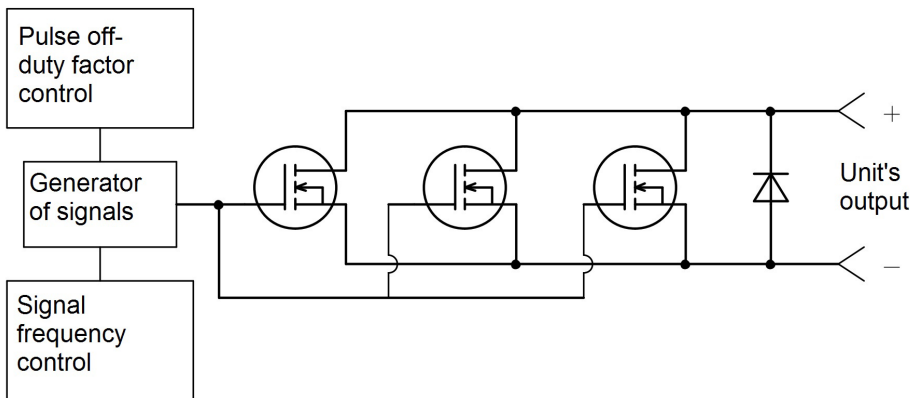
Environmental conditions

Item	Environmental specification, units	Value
Sinusoidal vibration	Frequency range, Hz	1-500
	Acceleration amplitude, m/sec ² (g)	50 (5)
	Vibratory displacement amplitude, mm	0.5
Single mechanical shock	Peak shock acceleration, m/sec ² (g)	1000 (100)
	Duration of shock acceleration, msec	1-2

* Parameters are stated for the information purposes and could not be used at long term work, exceeding maximum output current, operating outside of a working temperatures range or when output voltage is over the range of adjustment.

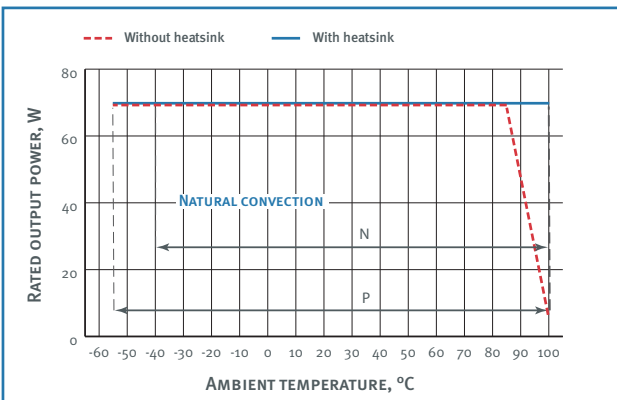
** All specifications are valid for normal climatic conditions, U_{in} nom., I_{out} nom., unless otherwise noted.

Block diagram for short-circuit debugging

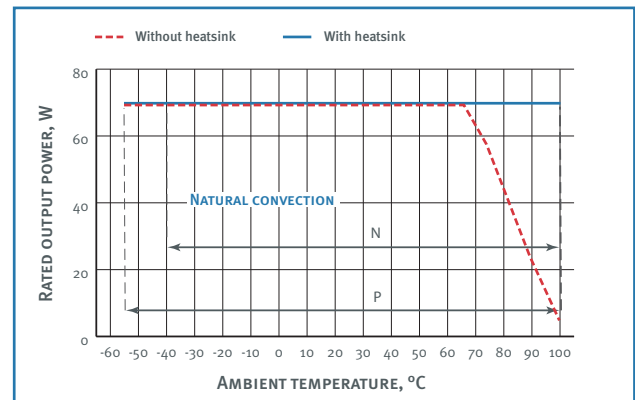


Derating

vs Temperature

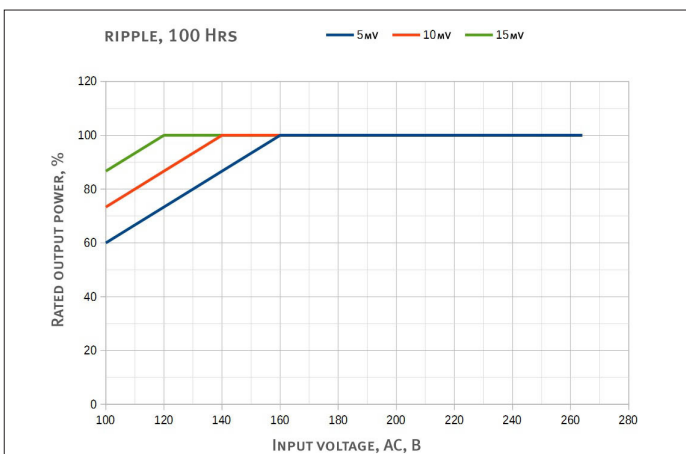


Power derating vs ambient temperature at nominal input voltage ~220VAC for KWant75-1C24SXX and KWant75-1C28SXX.

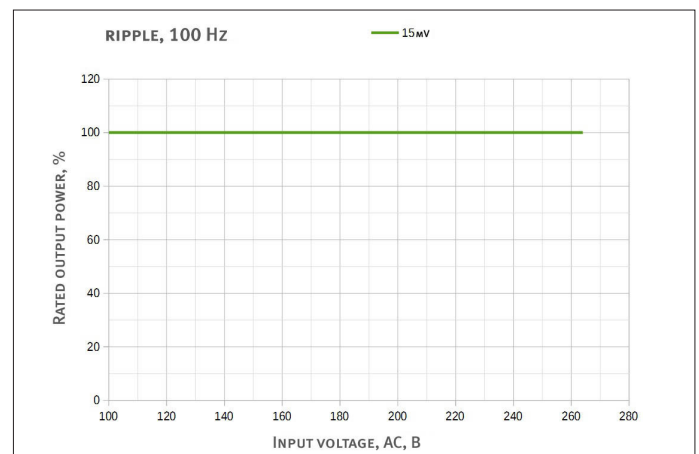


Power derating vs ambient temperature at nominal input voltage ~220VAC for KWant75-1C05SXX.

vs Input Voltage

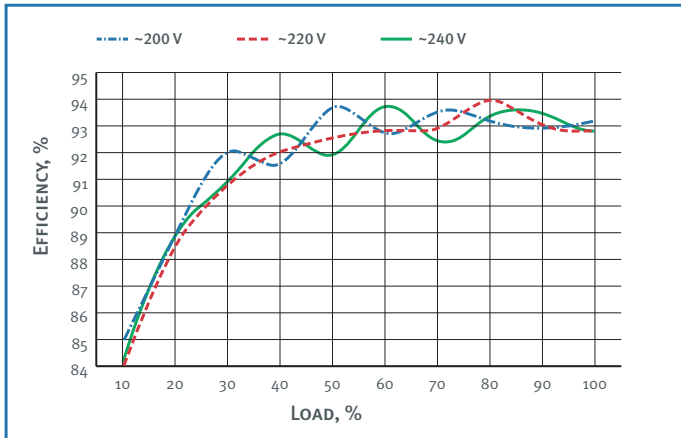


Power derating vs input voltage at ambient temperature -55°C for KWant75-1C24SXX and KWant75-1C28SXX.

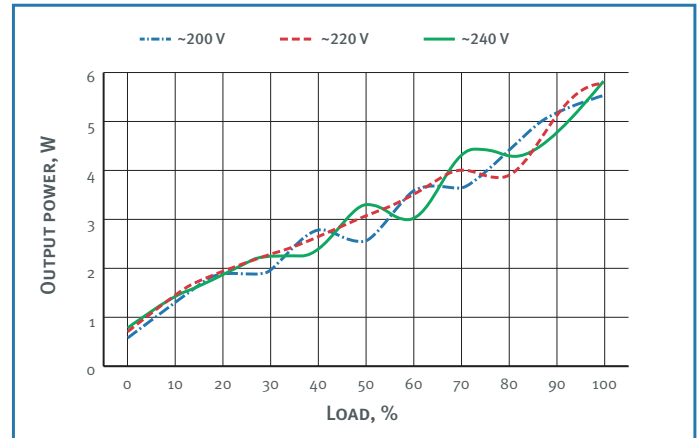


Power derating vs input voltage at ambient temperature -40°C for KWant75-1CXXSXP.

Efficiency

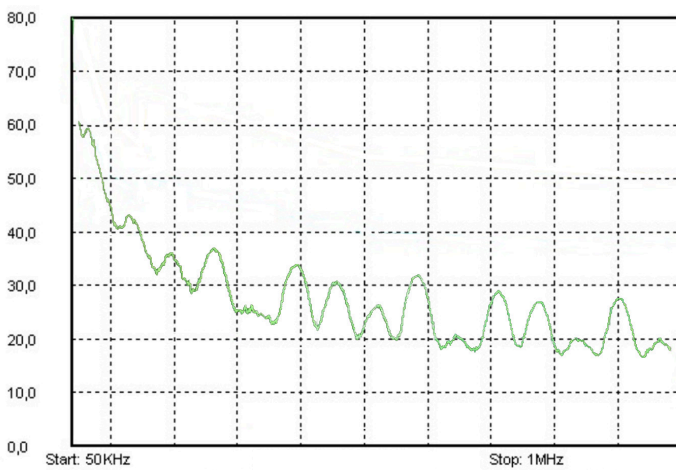


Efficiency vs output load for KWant75-1C24SXX and KWant75-1C28SXX.

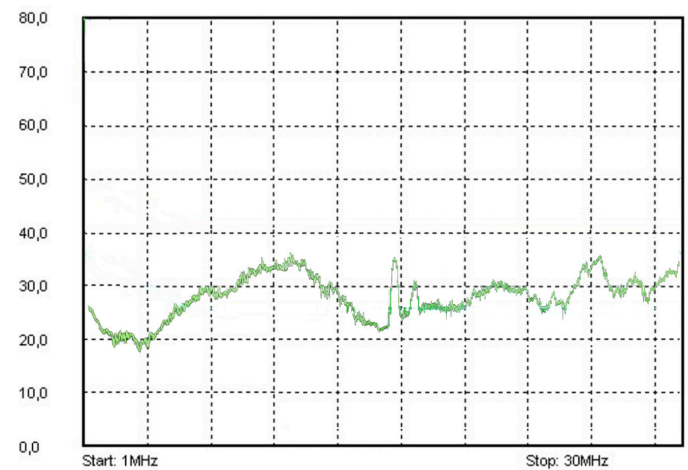


Output power vs output load for KWant75-1C24SXX and KWant75-1C28SXX.

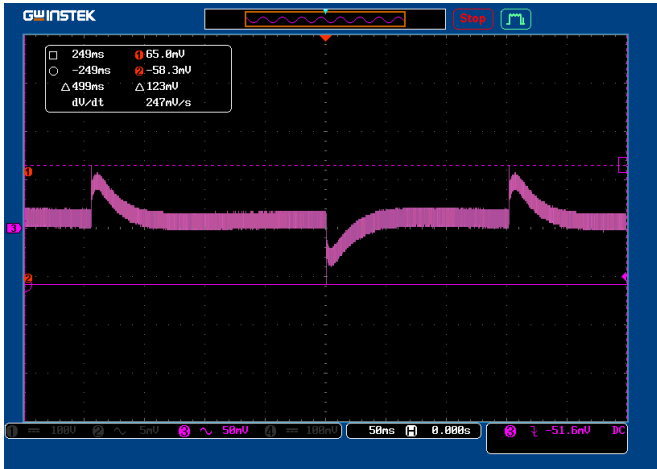
EMC spectrograms



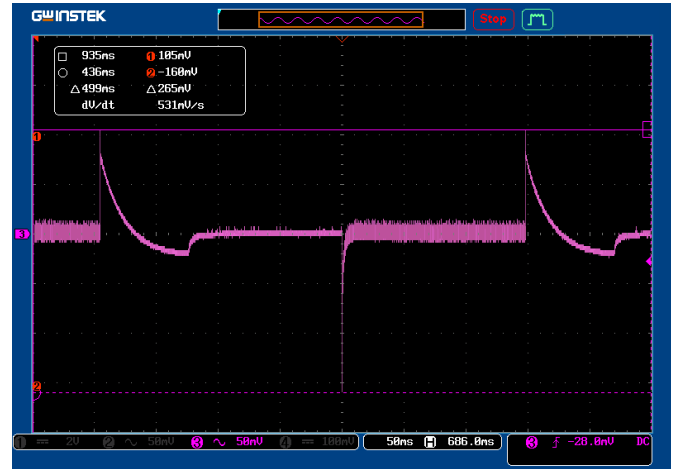
EMC spectrograms KWant75-1C28SGX.



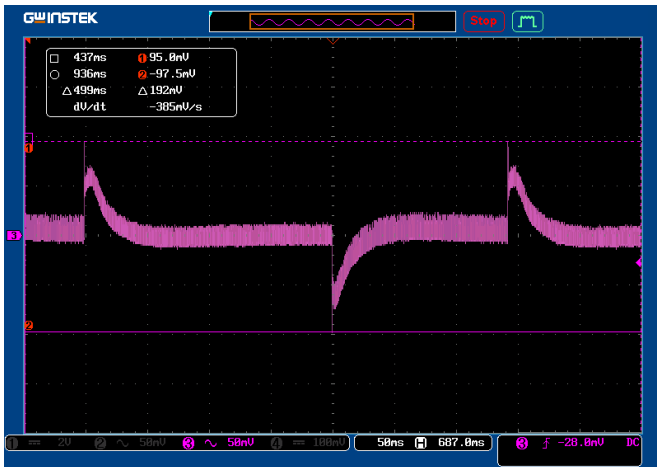
Oscillograph charts



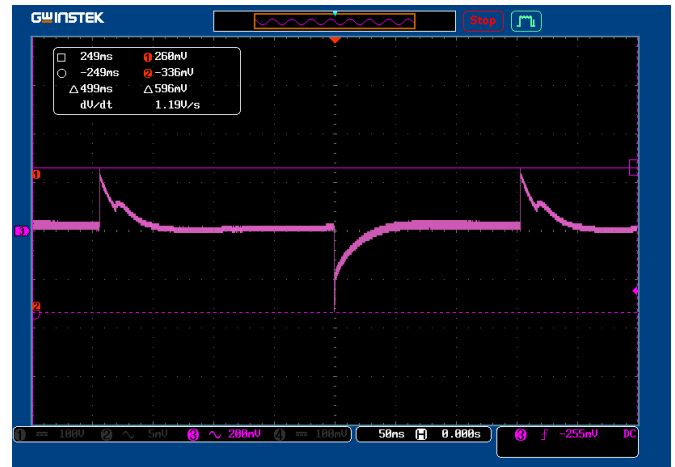
Wavechart of transient deviations of output voltage for KWant75-1C05SXX at dropping and surge of load 50-75-50%. Rate of current rise $dI/dt = 43$.



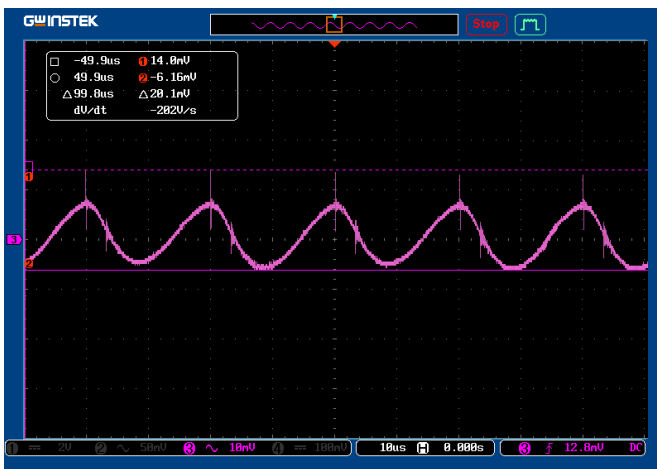
Wavechart of transient deviations of output voltage for KWant75-1C05SXX at dropping and surge of load 0-100-0%. Rate of current rise $dI/dt = 43$.



Wavechart of transient deviations of output voltage for KWant75-1C24SXX and KWant75-1C28SXX at dropping and surge of load 50-75-50%. Rate of current rise $dI/dt = 4.4$.



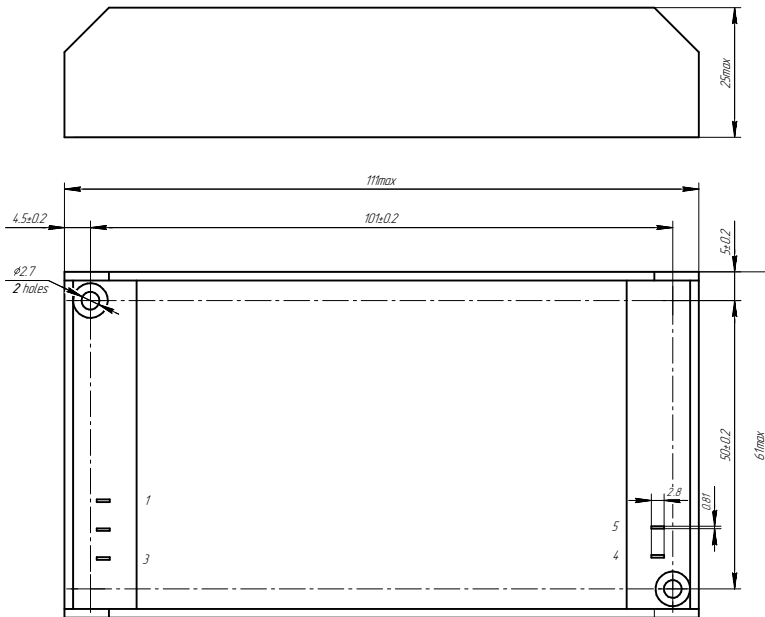
Wavechart of transient deviations of output voltage for KWant75-1C24SXX and KWant75-1C28SXX at dropping and surge of load 0-100-0%. Rate of current rise $dI/dt = 4.4$.



Wavechart of output voltage ripple for KWant75-1C05SXX at 100% load.

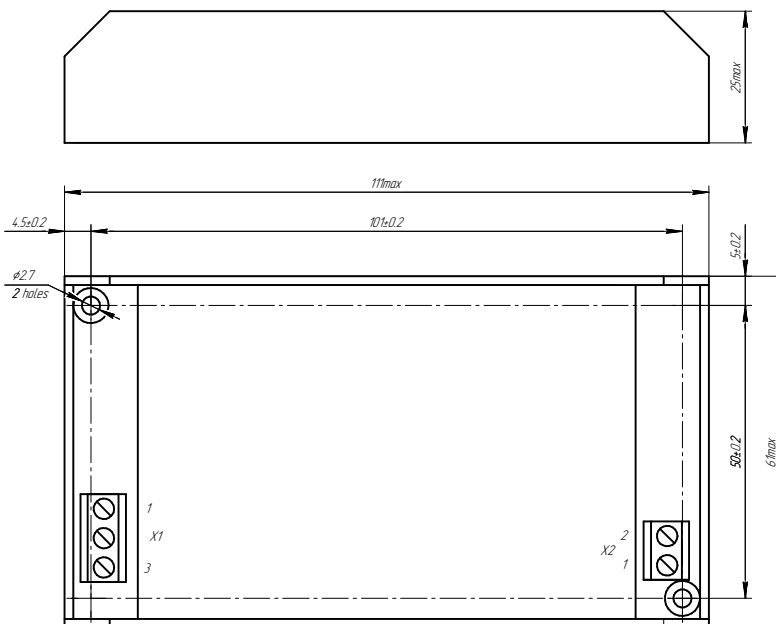
Dimensions

Single-channel design with blade contacts



PIN #	1	2	3	4	5
SINGLE-CHANNEL	L	N	⊕	+OUT 1	-OUT 1

Single-channel design with terminal blocks



PIN #	X1.1	X1.2	X1.3	X2.1	X2.2
SINGLE-CHANNEL	L	N	⊕	+OUT 1	-OUT 1



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KW Systems, LLC is the leading Russian developer and manufacturer of AC/DC converters and power supply systems for mission critical applications.

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