

AC/DC power supplies

KWant Family

KWant75 NEW, 75 W



Basic specifications

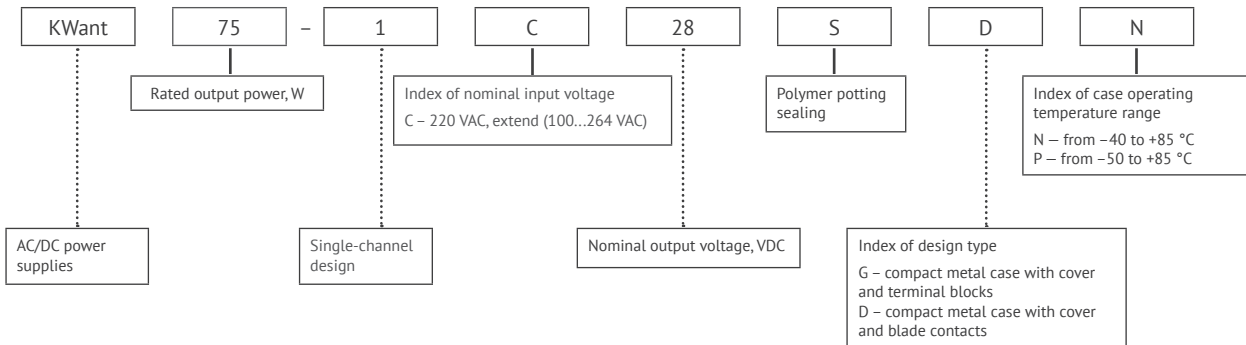
Power	75 W
Input current	up to 15 A
Input voltage	220 (100...264) VAC
Output voltage	5 VDC, 12 VDC, 15 VDC, 24 VDC, 28 VDC
Efficiency.....	88-93 %
Ambient operating temperature..	-40...+85 °C; -50...+85 °C
Dimensions	61×111×25 mm
Warranty	2 years

Advantages

- ◀ MIL-STD-461E without external components
- ◀ MIL-STD-810G
- ◀ Low ripple level of 40 mV (at Uout=28 VDC)
- ◀ Low level of conducted emissions



Ordering information



Input specifications*

Parameter	Value
Input voltage range, VAC**	C 100...264 (141...372 VDC)
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 15 24 28
Efficiency, %	88 91 92 93 93
Rated output current, A	15 6.25 2 3.12 2.68
Ripple and noise (peak-to-peak), mV	<30 <60 <25 <40 <40
Line and load regulation, %	max 1 max 0.5
Start-up time, ms	<50
Maximum load capacity, µF	15000 7800 5000 2000 1660

Protections

Type of protection	
Short-circuit protection*	auto recovery
Overload protection	P _{max} < 1.8 P _{nom}
Overvoltage protection level*	<125% U _{out nom.}
Overheat protection	triggers at case temperature > 100 ± 3 °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	15	24	28
Type of connection		screw terminals and blade contacts				
Protection level		IP20				
Case temperature, operating	«N»	-40...+85 °C				
	«P»	-50...+85 °C				
Case temperature, storage		-60...+70 °C				
Humidity		95% / 25 °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				
Operational height		up to 35000 m/115000 ft				
EMC standards		MIL-STD-461E				
Thermal resistance case-ambient		6.4 °C / W				
Typical MTBF, Hrs		800 000	2 000 000	2 000 000	2 400 000	2 400 000
Case material		metal				
Dimensions, mm (W×D×H)		111×61×25				
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

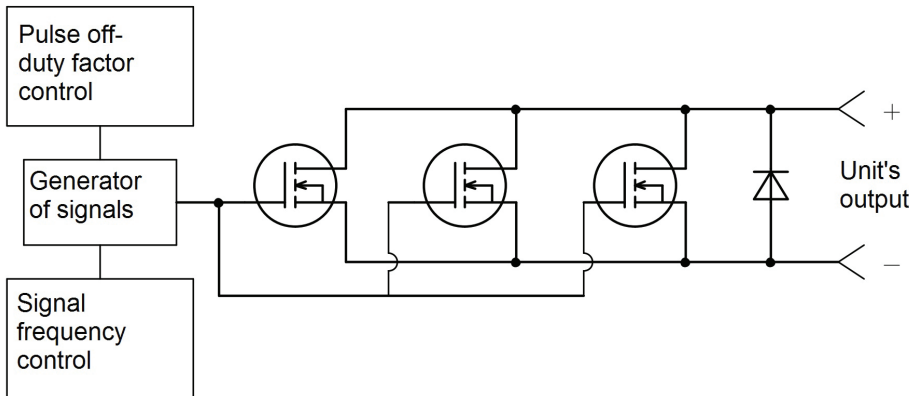
Environmental conditions

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) Duration of shock acceleration, msec	1000 (100) 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.

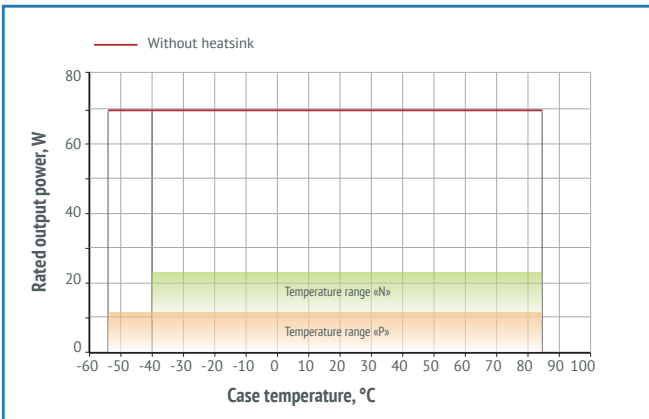
** All specifications are valid for normal climatic conditions, U_{in} nom., I_{out} nom., unless otherwise noted.

Block diagram for short-circuit debugging

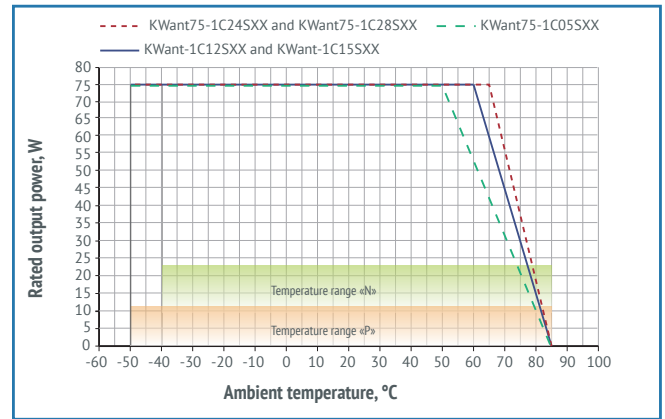


Derating

vs Temperature

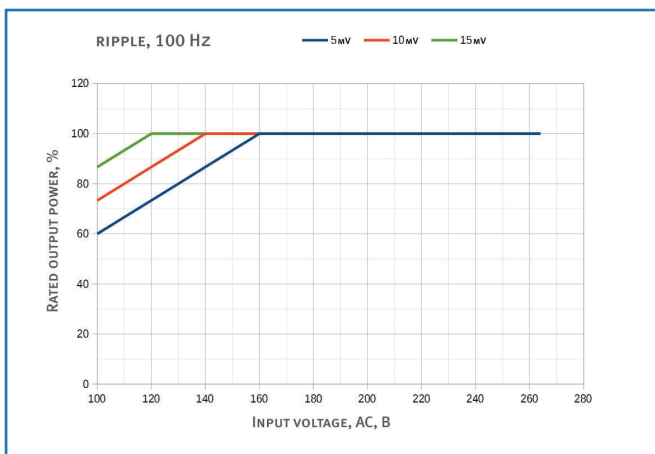


Power derating vs ambient temperature at nominal input voltage 220 VAC for KWant75-1C24SXX and KWant75-1C28SXX.

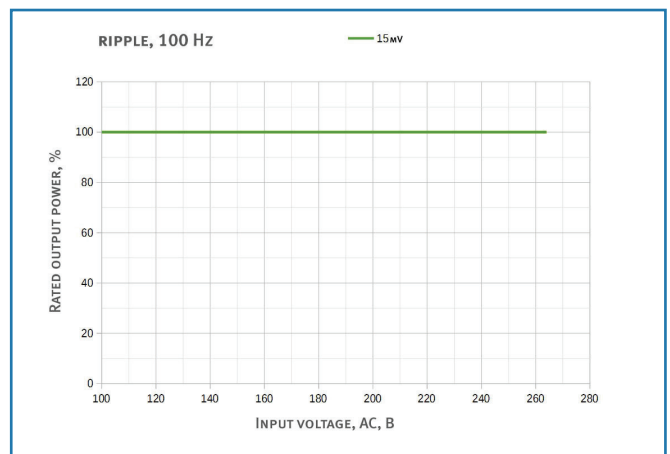


Power derating vs ambient temperature at nominal input voltage 220 VAC for KWant75-1C05SXX.

vs Input Voltage

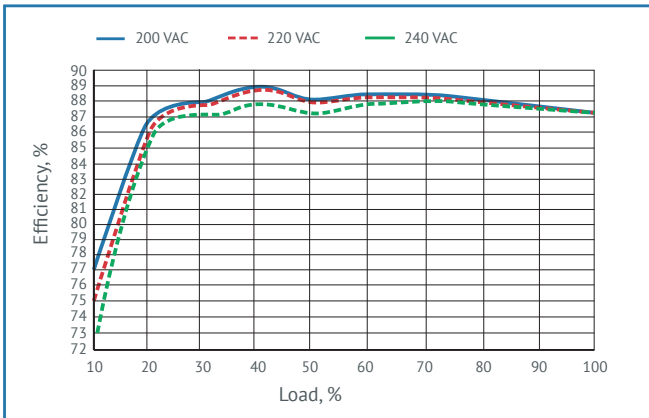


Power derating vs input voltage at ambient temperature -50°C for KWant75-1C24SXX and KWant75-1C28SXX

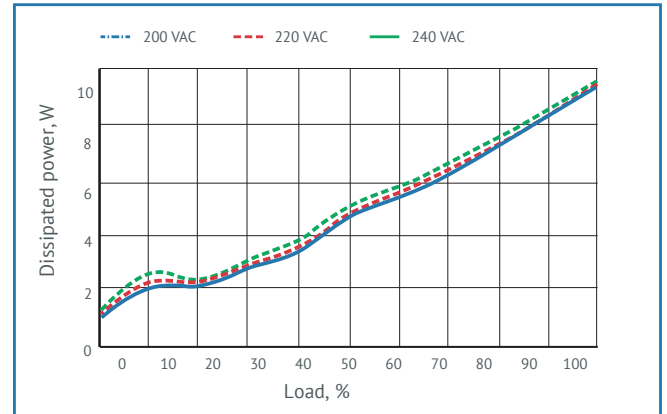


Power derating vs input voltage at ambient temperature -40°C for KWant75-1CXSSXP.

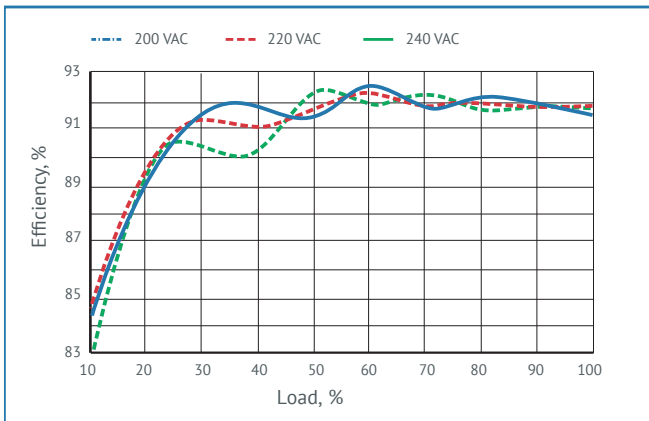
Efficiency



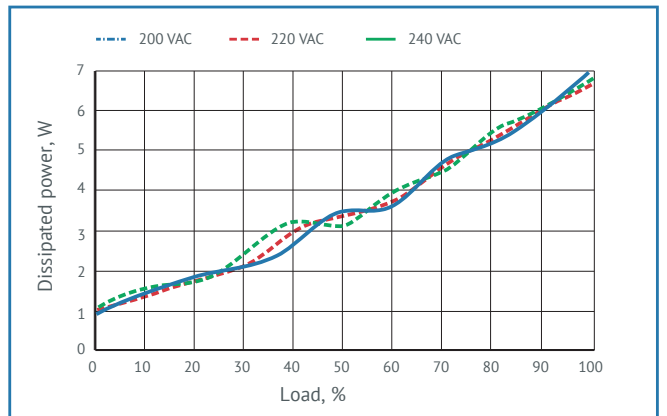
Efficiency vs output load for KWant75-1C05SXX



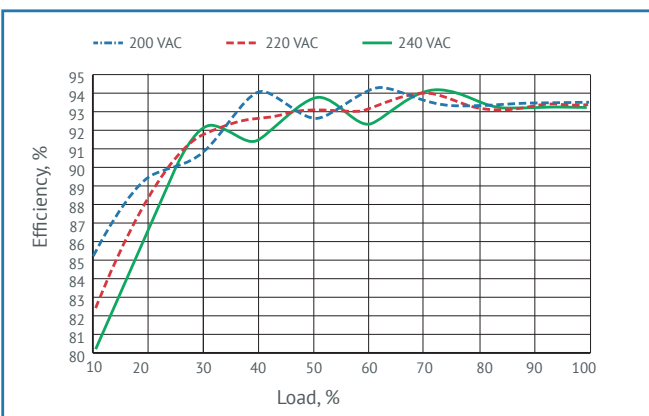
Output power vs output load for KWant75-1C05SXX



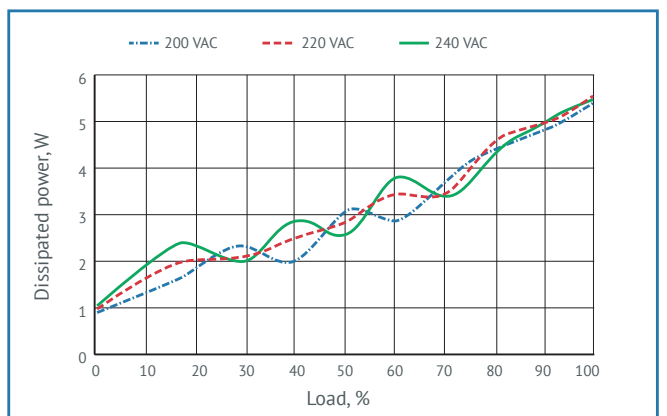
Efficiency vs output load for KWant75-1C12SXX and KWant75-1C15SXX



Output power vs output load for KWant75-1C12SXX and KWant75-1C15SXX

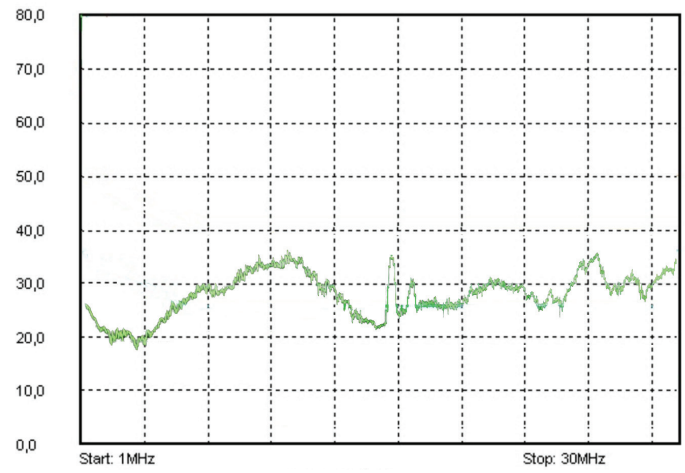
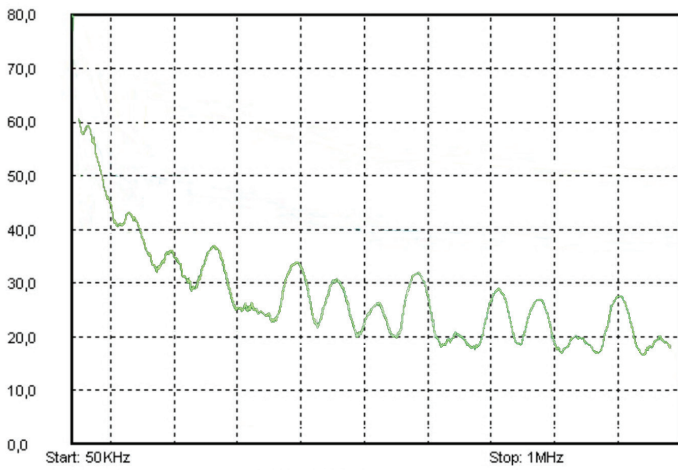


Efficiency vs output load for KWant75-1C24SXX and KWant75-1C28SXX.



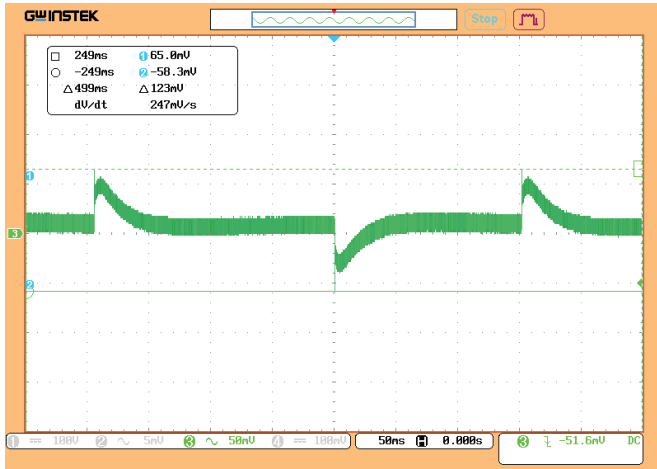
Output power vs output load for KWant75-1C24SXX and KWant75-1C28SXX.

EMC spectrograms

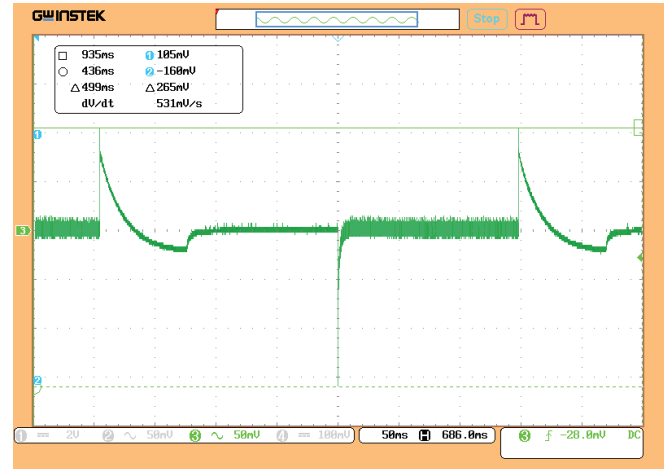


EMC spectrograms KWant75-1C28SGX.

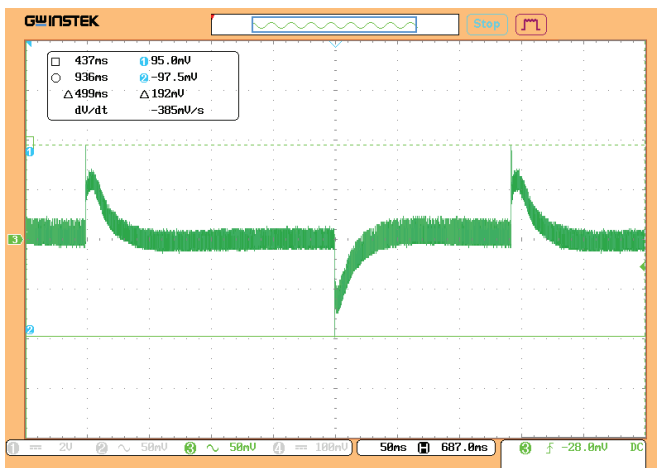
Oscillograph charts



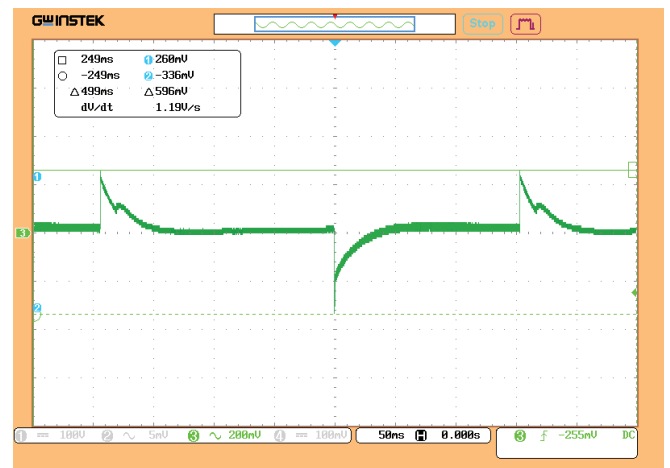
Wavechart of transient deviations of output voltage for KWant75-1C05SXX at dropping and surge of load 50-75-50%. Rate of current rise $di/dt = 43$.



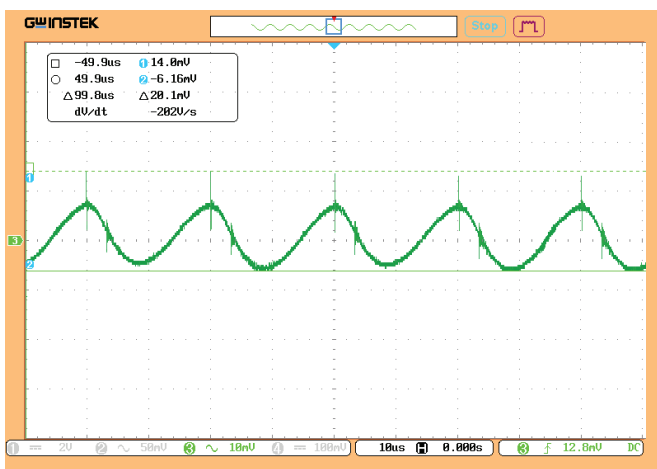
Wavechart of transient deviations of output voltage for KWant75-1C05SXX at dropping and surge of load 0-100-0%. Rate of current rise $di/dt = 43$.



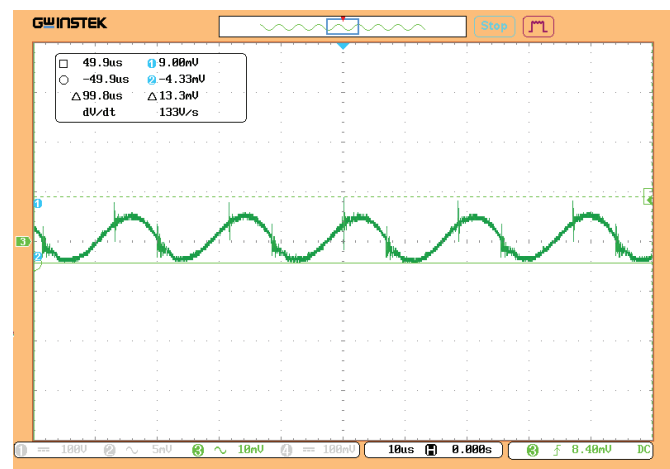
Wavechart of transient deviations of output voltage for KWant75-1C24SXX and KWant75-1C28SXX at dropping and surge of load 50-75-50%. Rate of current rise $di/dt = 4.4$.



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 $di/dt = 4.4$.



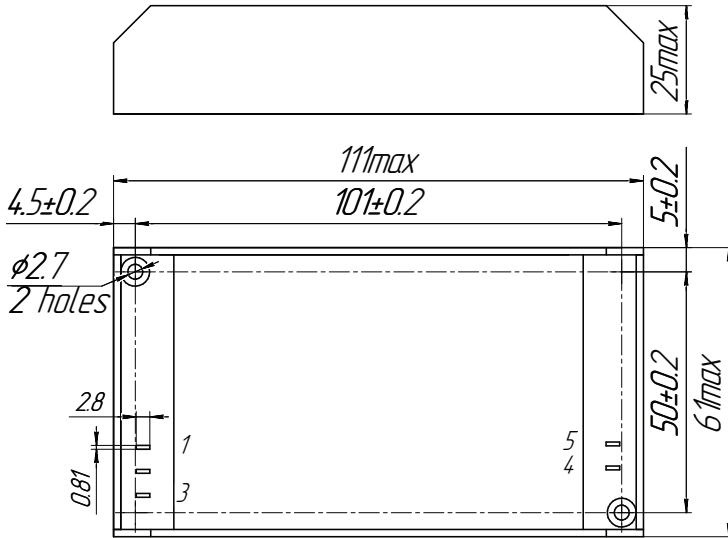
Wavechart of output voltage ripple for KWant75-1C05SXX at 100% load.



Wavechart of output voltage ripple for KWant75-1C24SXX and KWant75-1C28SXX at 100% load.

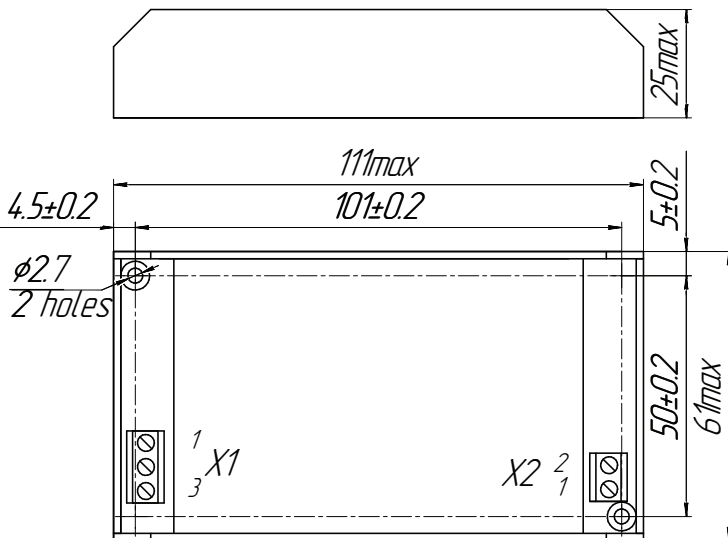
Dimensions

Single-channel design with blade contacts



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

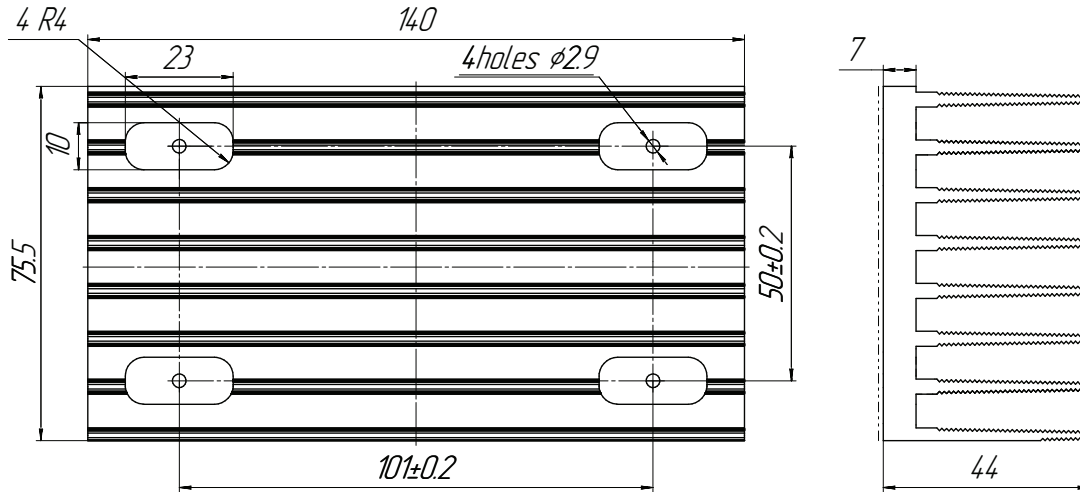
Single-channel design with terminal blocks



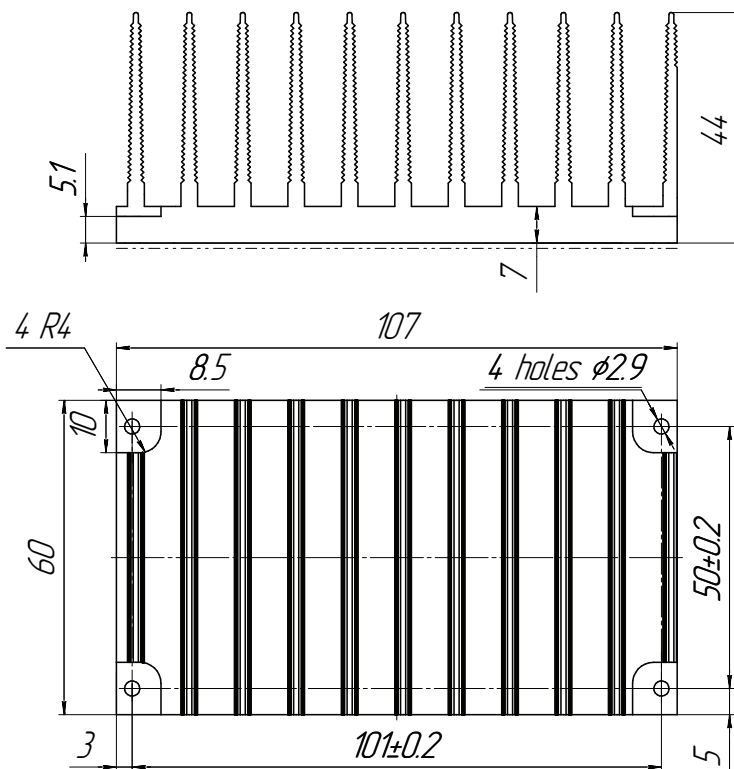
PIN #	X1.1	X1.2	X1.3	X2.1	X2.2
SINGLE-CHANNEL	L	N	⊕	+OUT 1	-OUT 1

Heatsink drawing

Lengthwise ribbed heatsink



Transverse ribbing heatsink



* Must be ordered separately if required



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