

# TwinPulse400 Dual Band RF Amplifier for NMR



- The new Tomco TwinPulse400 is a single, low-cost drop-in replacement for four different Herley/AMT 3900 models (3900-1S4, 3900-1S7, 3900B-15B, 3900C-12)
- Published specifications equal to or better than the equivalent Herley/AMT amps, including wider bandwidth, lower noise figure, lower blanked noise, longer pulse widths
- 100% compatible interface and connections
- Mechanically equivalent
- Low band 5-310MHz, 300W PEP  
High band 200-650MHz, 100W PEP
- These amplifiers are ready for use in a range of NMR systems, including the Varian Unity, Mercury and Inova systems. Can also be used in Bruker spectrometers.



## Key Specifications

	Channel A	Channel B
Bandwidth	200-650MHz	5-310MHz
PEP @ 0dBm in	100W	300W
Max. pulse width	300ms	300ms
Max. duty cycle	20%	20%
Power in CW mode	15W	30W

For further information please email [info@tomcorf.com](mailto:info@tomcorf.com)

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Model	TwinPulse400	
Amplifier type	Class AB, LDMOS	
Frequency range Channel A Channel B	200-650MHz 5-310MHz	
Pulse power Channel A Channel B	100W minimum 300W minimum	<i>Across full frequency range</i>
CW power Channel A Channel B	15W minimum 30W minimum	<i>Into a 50W load</i>
Linearity Channel A Channel B	±1dB from 0.08-80W ±1dB from 0.25-250W	
Amplitude droop Channel A Channel B	5% maximum 5% maximum	<i>at 300ms, 80W at 300ms, 200W</i>
Pulse width	300ms maximum, both channels	<i>Blanking pulse width, internally limited</i>
Amplitude rise time Channel A Channel B	150ns maximum 500ns maximum	
Input VSWR	2:1 maximum, both channels	
Output noise blanked	15dB over thermal, maximum, both channels	
Noise figure	15dB maximum, both channels	

Max.RF input level	0dBm, both channels	
Maximum duty-cycle	20%, both channels	<i>Blanking pulse duty-cycle, internally limited</i>
Phase change over linear output power range	20° maximum, both channels	
Phase shift over pulse width	6° maximum, both channels	<i>At 300ms pulse width</i>
Blanking delay	2ms maximum, both channels	
Protection	Input overdrive, over duty, over pulse width, over temperature	<i>All protection is self-resetting upon correction of the fault</i>
Connectors	RF input: BNC(F) x 2 RF output: N-type (F) x 2 Noise blanking: BNC (F) x 2 Interface: D25 (F)	<i>All connectors are on the rear panel in the standard configuration. Front panel connectors are available as option</i>
Front panel LED indicators	DC supply status Over pulse width / duty cycle Over temperature CW mode active (x2)	
Cooling	Forced air, front to rear	
Operating ambient temperature	10 - 40°C	
AC supply	110-240V AC, 50-60Hz universal input	<i>Standard IEC mains inlet</i>
AC supply rating	1000VA minimum	
Size	5.25"H x 19"W x 25.6"D	
Weight	20kg	

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## Environmental

General	Intended for use only in controlled, indoor environment. Non-consumer product for industrial and scientific use.
Cooling	Forced air, front to rear
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +60°C
Humidity	80% for temperature up to 31°C, decreasing linearly to 50% relative humidity at 40°C
Operating altitude	Up to 2000m
Pollution degree	2
Transient voltage compatilby	Category II, in line with IEC 60364-4-44:2007
Electromagnetic compatibility	In line with IEC61326-1:2012 ISM equipment, Group 1, Class A For use only in shielded areas. EN55011 (CISPR 11) limits exceeded by up to 50dB For use with isolated mains source. IEC61000-3-3:2013 (flicker) limits may be exceeded during high power pulsed operation
Safety	In line with IEC61010-1:2010
Electromagnetic field strength	In line with ICNIRP Guidelines: 1998, occupational limits

## Change record

Document/Issue number	Originator	Date	Change
DS006723A	TD	15/08/2018	Original
DS006723B	TD	12/12/2021	pg.3:E
DS006723C	TD	23/01/2023	pg.1:S