

DragSPATZH1600/H2400 High Frequency Inverter Power Source

Within the **SPATZ**-family the *DragSPATZ* power sources are the most powerful 20 kHz Inverters. The areas of application are projection welding and the welding of materials which possess good electrical conductivity, e.g. aluminum or copper.

The 20 kHz inverter technology shows numerous advantages: The residual ripple of the welding current is negligible. The setting precision for the welding parameters is very high - current times can be programmed in 0.1 ms increments. The short current rise times enable extremely short welding operations of only several milliseconds. The control cycle time of 25 μ s ensures uniform and reproducible quality in the welded joint, even at these short welding times.

The **MASDAT**-interface permits further progression for a flexible, effective and cost efficient production and maintenance respectively by connecting an intelligent welding gun identification system. The proportional valve output and 63 different schedules also come as standard.

All 10,000 weld data records of the weld data recorder which is integrated in every *DragSPATZH1600/H2400* can be read and stored with the operating units. Each data record is comprised of the weld values like current, voltage, energy, resistance, penetration and force. Further a time/date tag and information about the crossed limits and fault status are stored. For fast I/O communication via robot controller or line PLC a PROFIBUS-DP interface is available. Alternatively, 13 digital inputs and 8 outputs ensure a reliable data exchange via standard protocols.

The *DragSPATZH1600/H2400* is able to work without an operating device. Programming the *DragSPATZH1600/H2400* and analyzing of the weld process occurs via the handy graphical operating device **SPATZBG-02**, a local PC with the **AutoSPATZAS-01** PC software via RS232 or a line PC with the **AutoSPATZAS-32** software via an ETHERNET connection.



Technical Data

No. of programs		63
Welding impulses / program		16
Control modes		CCC, CPC, CVC
Weld parameter monitoring		yes
Stepper function		for CCC, CPC, CVC
Force schedule		yes
Slope up / slope down		yes
Signal inputs		current, voltage, force, penetration
Sensor monitoring		yes
Output for proportional valve		yes
Mains voltage U_1		3-400 V - 500 V, 50/60 Hz
max. power S_{max}	<i>H1600</i>	600 kVA with 400 V
	<i>H2400</i>	800 kVA with 400 V
Nominal power S_N	<i>H1600</i>	220 kVA with 50 % duty cycle, 400 V
	<i>H2400</i>	300 kVA with 50 % duty cycle, 400 V
Output voltage U_{2N}		500 V / 20 kHz
Output current I_{2max}	<i>H1600</i>	1,100 A
	<i>H2400</i>	1,600 A
Interfaces		BG-02, MASDAT, RS232, PROFIBUS-DP, ETHERNET
Digital inputs		13
Digital outputs		8
Cooling water		4 l/min at 20 °C 1.1 gal(US)/min at 68 °F
Pressure drop		0.1 bar at 4 l/min 1.5 PSI at 1.1 gal(US)/min
Type of protection		IP54
Dimensions (H x W x D)		600 x 600 x 360 mm 23.6 x 23.6 x 14.2 in
Weight	<i>H1600</i>	80 kg / 176.4 lb
	<i>H2400</i>	83 kg / 183.0 lb



DragSPATZT-Pack High-Frequency Welding Transformers

DragSPATZT4-Pack and *DragSPATZT6-Pack* high-power, high-frequency transformers are used in conjunction with the *DragSPATZ* 20 kHz inverter power sources. Welding currents of 45 kA and 65 kA are attained at an duty factor of 7 % with welding times up to 200 ms. The high secondary voltage of 11 V enables very short current rise times, thus ensuring the very fast application of energy to the welding point. As a result of the high inverter frequency of 20 kHz, the welding transformers are working almost quietly.

Thanks to their small and compact design and low weight, the *DragSPATZT4-* and *DragSPATZT6-Pack* transformers are suitable for installation both in robot welding guns and projection welding machines.



Technical Data

Type	T4-Pack	T6-Pack
Nom. power S_N (20 % duty cycle)	280 kVA	420 kVA
Nom. power S_N (50 % duty cycle)	180 kVA	270 kVA
S_{max}	500 kVA	800 kVA
Max. welding current I_{2max}	45 kA	65 kA
Sec. Voltage U_{20}	11 V	11 V
Primary voltage U_1	500 V	500 V
Max. primary current I_{1max}	1,100 A	1,600 A
Isol. class	F	F
Cooling Water (at 20 - 25 °C / 68 - 77 °F)	12 l/min 3.2 gal(US)/min	16 l/min 4.2 gal(US)/min
Dimensions (H x W x D)	304 x 361 x 104 mm 12.0 x 14.2 x 4.1 in	369 x 361 x 104 mm 14.5 x 14.2 x 4.1 in
Weight	28 kg / 61.7 lb	38 kg / 83.8 lb

