Series DRWS and DRWB

Driver for the control of electric actuation

Series DRWS: one size/version

Series DRWB: in power classes 100 - 400 - 750 W

The new Camozzi drivers in both its versions **DRWS** and **DRWB** have been designed to control the movement of the motors connected. The servo drivers **DRWB**, compact and especially optimized for the brushless Camozzi motors, are completely digital and available in the power classes 100 W, 400 W and 750 W. Equipped with vector mode and the function of Autotuning and containment of vibrations, they are made in such a way to easily perform replacements and to have a two-line alphanumeric display with 4 control keys on the servo driver. A digital pulse interface allows control of the direction, position, speed and torque.

The **DRWS** drivers, compact and optimized in one size, have been especially studied for all Camozzi stepper motors. They are capable of controlling stepper motors with 2 phases and micro stepping feed. They are able to calculate the normal resonance frequency of the motors and optimize their driving. Moreover, they can reduce natural friction to a minimum during very slow rollings of the stepper motor, giving a continuous and very fluid (smooth effect) movement at any speed thanks to the Microstepping technique, thus achieving a 1/128 STEP resolution. Another function that has been integrated into the driver reduces vibrations to a minimum during rolling inversion or during sudden changes in speed. At initial ignition/ switching on, the **DRWS** drivers are able to calculate the inductance, the electrical resistance of the motor connected and the inertia of the motor, and saves these parameters inside in order to better manage the driving of the motors.

- > COMPLETELY DIGITAL DRIVERS
- > PLC FUNCTION PROGRAMMABLE WITH QUICKSET CAMOZZI
- > CONTROL OF SPEED, POSITION AND TORQUE. (TORQUE ONLY FOR DRWB)
- > 6 DIGITAL INPUTS FOR 64 CONFIGURATIONS (QUICKSET CAMOZZI)
- > SELF-COMPENSATION OF ERRORS
- > CAN BE INTERFACED WITH QUICKSET CAMOZZI CONFIGURATION SOFTWARE

General data DRWS

MOD.	Series DRWS-A05-2-Q-D-0 and DRWS-A05-2-0-D-0
Amplifier Type	Dual H-Bridge, 4 Quadrant
Current Control	4 state PWM at 20 KHz
Protection	Over-voltage, under-voltage, over-temp, internal motor shorts (phase-to-phase, phase-to-ground)
Idle Current	Automatic idle current reduction to reduce heat after motor stops moving, software selectable current and idle delay
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps. Reduces jerk and extraneous system resonances.
Anti-Resonance	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time.
Torque ripple smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range of 0.25 to 1.5 rps
Non-Volatile Storage	Configurations are saved in FLASH memory on-board the DSP
Humidity	90% non-condensing
Ambient Temperature	0 - 40°C when mounted to a suitable heat sink
Mass	Approx. 0.2Kg
I/O Specifications	STEP; DIR inputs: optically isolated, differential, 5 V DC, minimum pulse width = 250 ns, maximum pulse frequency = 2 MHz; EN input: optically isolated, 5-12 V DC; OUT output: optically isolated, 24 V DC max, 10 mA max; AIN analog input: Range = 0-5 V DC, resolution = 12 bits

General data DRWB

MOD.	DRWB-W01-2-Q-D-E DRWB-W01-2-0-D-E	DRWB-W04-2-Q-D-E DRWB-W04-2-0-D-E	DRWB-W07-2-Q-D-E DRWB-W07-2-0-D-E
Power	100 W	400 W	750 W
Final stage supply voltage and frequency	200 to 240 V AC (± 10 %) / 50 to 60 Hz (± 5 %)		
Number of phases	1		
Power consumption of final stage	1.5 A	4.1 A	7.5 A
Logic supply voltage and frequency	200 to 240 V AC (± 10 %) / 50 to 60 Hz (± 5 %) 1- phase only		
Power consumption of logic supply	0.5 A max.		
Output current			
Continuous current	(effective) 0.9 A	(effective) 2.5 A	(effective) 5.1 A
Peak current (effective)	2.7 A	7.5 A	15.3 A
Maximum duration of peak current	1 second		
Type of control	IGBT PWM vector control		
Controller sampling rate	Current, speed and position controllers: 15 kHz		
Motor types supported	AC servo motors		
Status LED	Red: Error / Green: Ready		
Operating modes			
Encoder interface	Operating voltage + 5 VDC ± 5 % @400 mA		
Communication Interface	USB 2.0		
Parameterisable I/O interface	Digital inputs [I1..I9], (single-end, optocoupler) Digital outputs [O1..O4], (optocoupler) Brake output BRAKE [CN2_BRK], max. 1 ADC		
Feedback	Resistance External Activation threshold + HV> 370 VDC Deactivation threshold + HV< 360 VDC Tolerance ± 5 %		
Monitoring functions	Short circuit, overvoltage (> 390 VDC ± 5 %), undervoltage (< 60 VDC); position error, encoder error, motor phase monitoring, overtemperature D2 (IGBT > 90 °C ± 1°C), motor overtemperature.		
Autotuning	With automatic mass inertia calculation		
Error mapping	Method Compensation table for correcting position errors through linear interpolation Table entries Max. 16,000 Activation Following successful referencing or via digital input signal		
VSF (vibration suppression)	0.1 Hz to 200 Hz		
Other functions	Friction compensation, gear play compensation		
Ambient conditions	Operating temperature 0 to 40 °C (above 55 °C only with air conditioning) Storage temperature -20 °C to 65 °C Air humidity 20 to 85 % (non-condensing) Operating altitude < 1000 m above sea level Vibration 5.88 m/s (10 to 60 Hz) Protection class IP20		