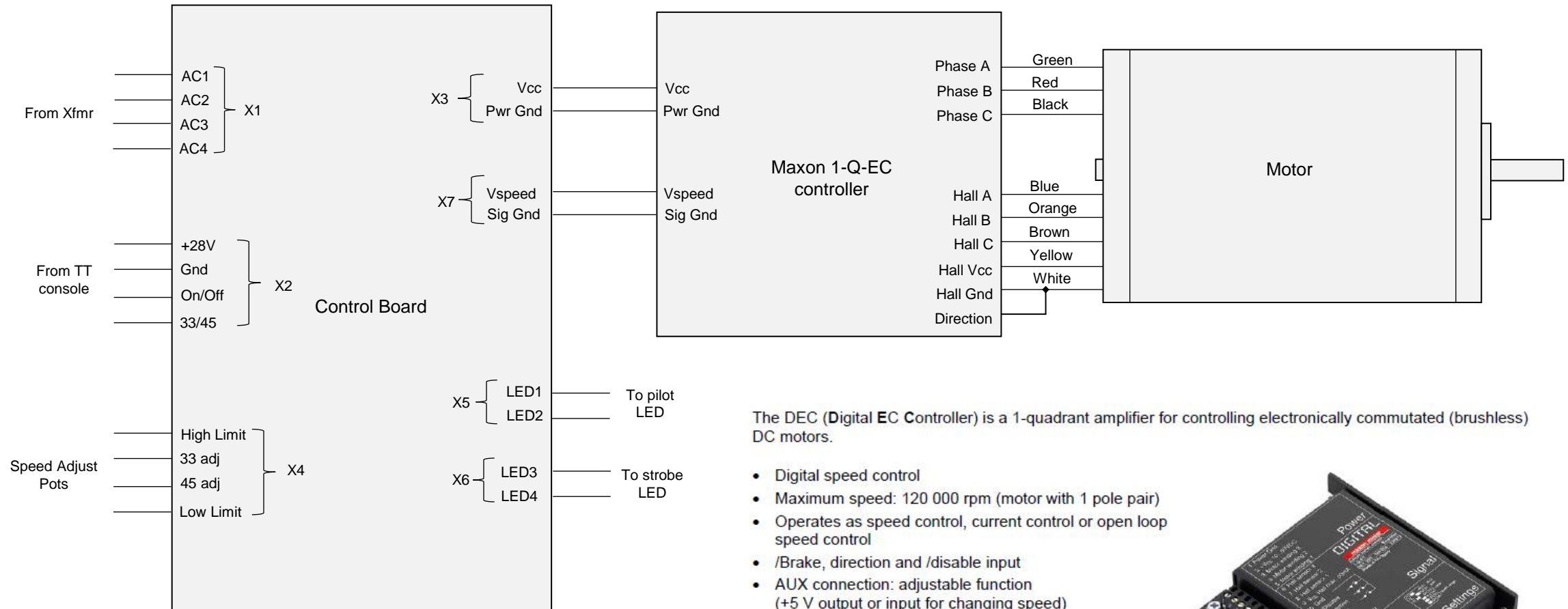


Repairs/Modifications to Oracle Delphi Turntable

- Original Papst motor was >40 years old and was getting noisy
 - Adjusting axial shaft screw did not solve the problem
 - Replacement motor is no longer available
- Requirements
 - Replacement motor must not produce audible noise and support 33/45 RPM platter speeds
 - Reuse all turntable components except motor, plinth, and console PCB
 - Replacement console PCB replicates the on/off and 33/45 functions
- Rebuild plinth
 - Papst motor shaft and plinth clearance hole are offset
 - Replacement motor and pedestal are not offset
 - Rebuild plinth accordingly
 - Alternating layers of Baltic birch plywood and tungsten powder-filled silicone rubber
 - Exterior finished in walnut veneer
- First motor/electronics implementation
 - Maxon brushed motor with optical encoder in feedback loop
 - Speed control is excellent
 - Ball bearing noise was unacceptable
 - Axially preloading bearing (with 2 small repelling magnets) eliminated bearing noise
 - Brush noise was still unacceptable
- Second motor/electronics implementation
 - 8-pole brushless DC motor with Maxon controller
 - No brush or bearing noise, but cogging noise still remained
 - Additional isolation using Sorbathane[®] eliminated the noise
 - Controller includes a platter speed calibration 60.00 Hz LED strobe

Controller for 8-Pole BLDC Motor

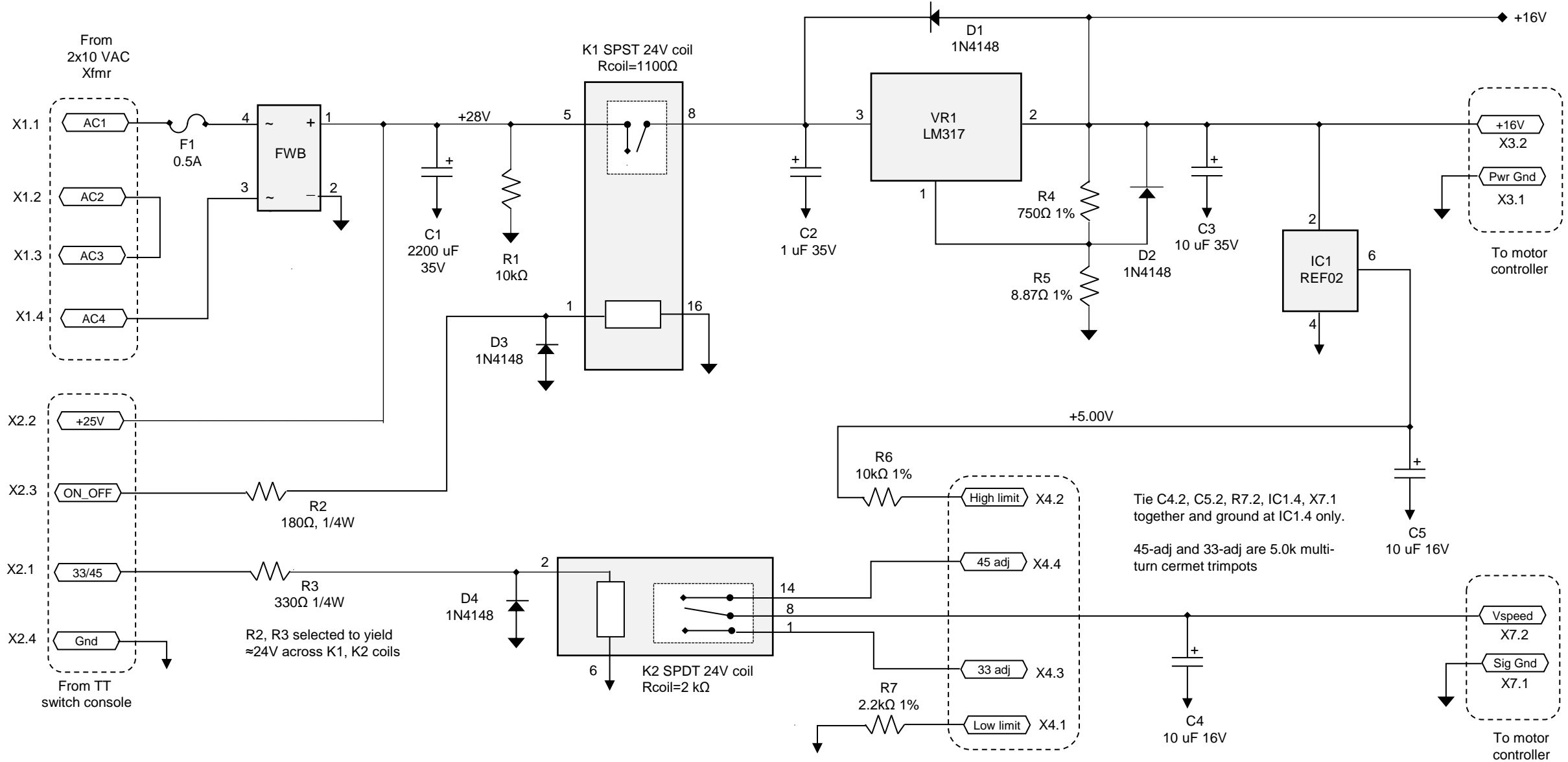


The DEC (**D**igital **E**C Controller) is a 1-quadrant amplifier for controlling electronically commutated (brushless) DC motors.

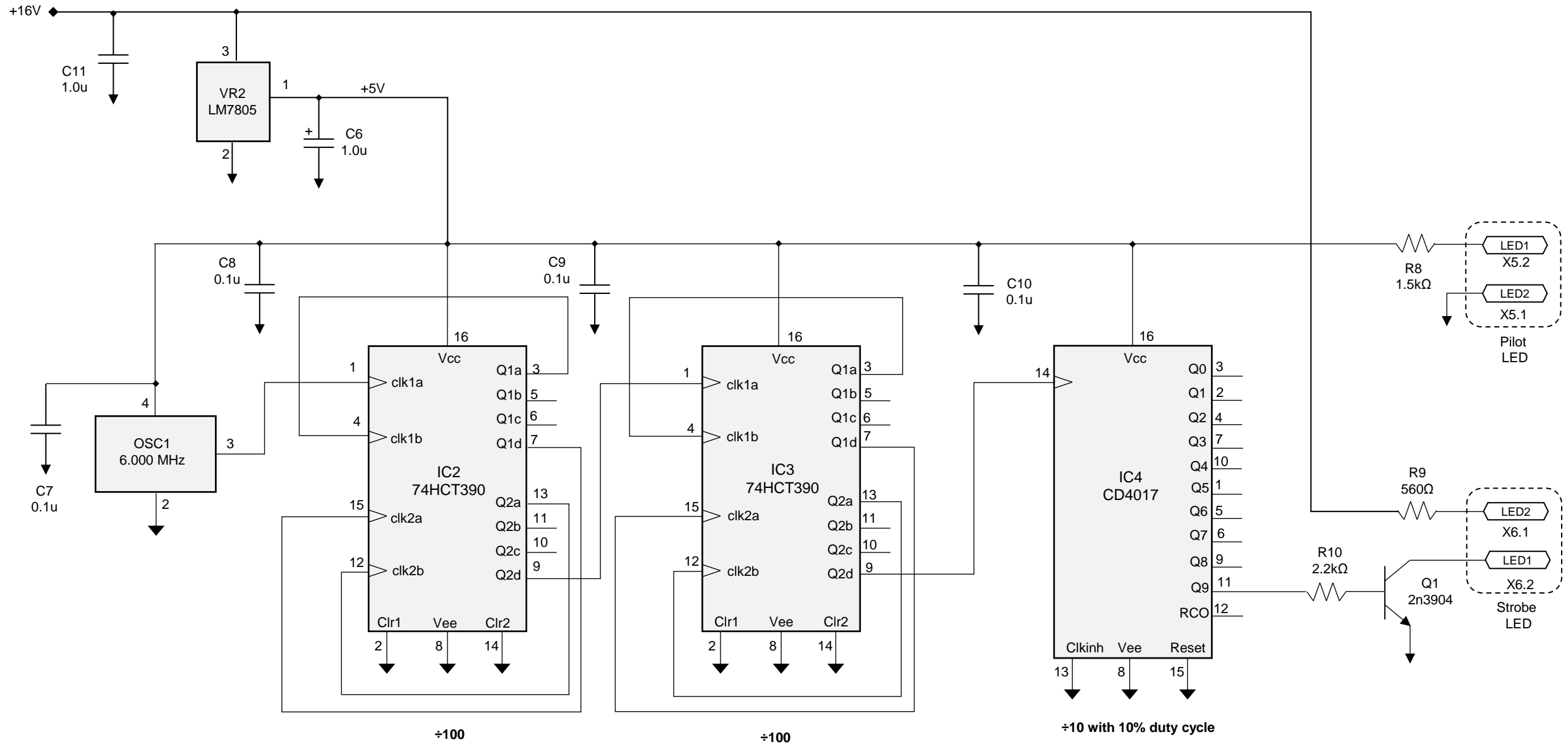
- Digital speed control
- Maximum speed: 120 000 rpm (motor with 1 pole pair)
- Operates as speed control, current control or open loop speed control
- /Brake, direction and /disable input
- AUX connection: adjustable function (+5 V output or input for changing speed)
- Status indicator with red and green LED
- Set value input through built-in potentiometer (several speed ranges can be selected) or through analogue set value input (0 ... +5 V)
- Maximum current limit adjustable
- Gain can be adjusted in two stages
- Adjustable speed ramp
- Protection against heat overload
- Blockage protection (current limit for blocked motor)
- Plug-in terminal clamp



Speed Control Circuit

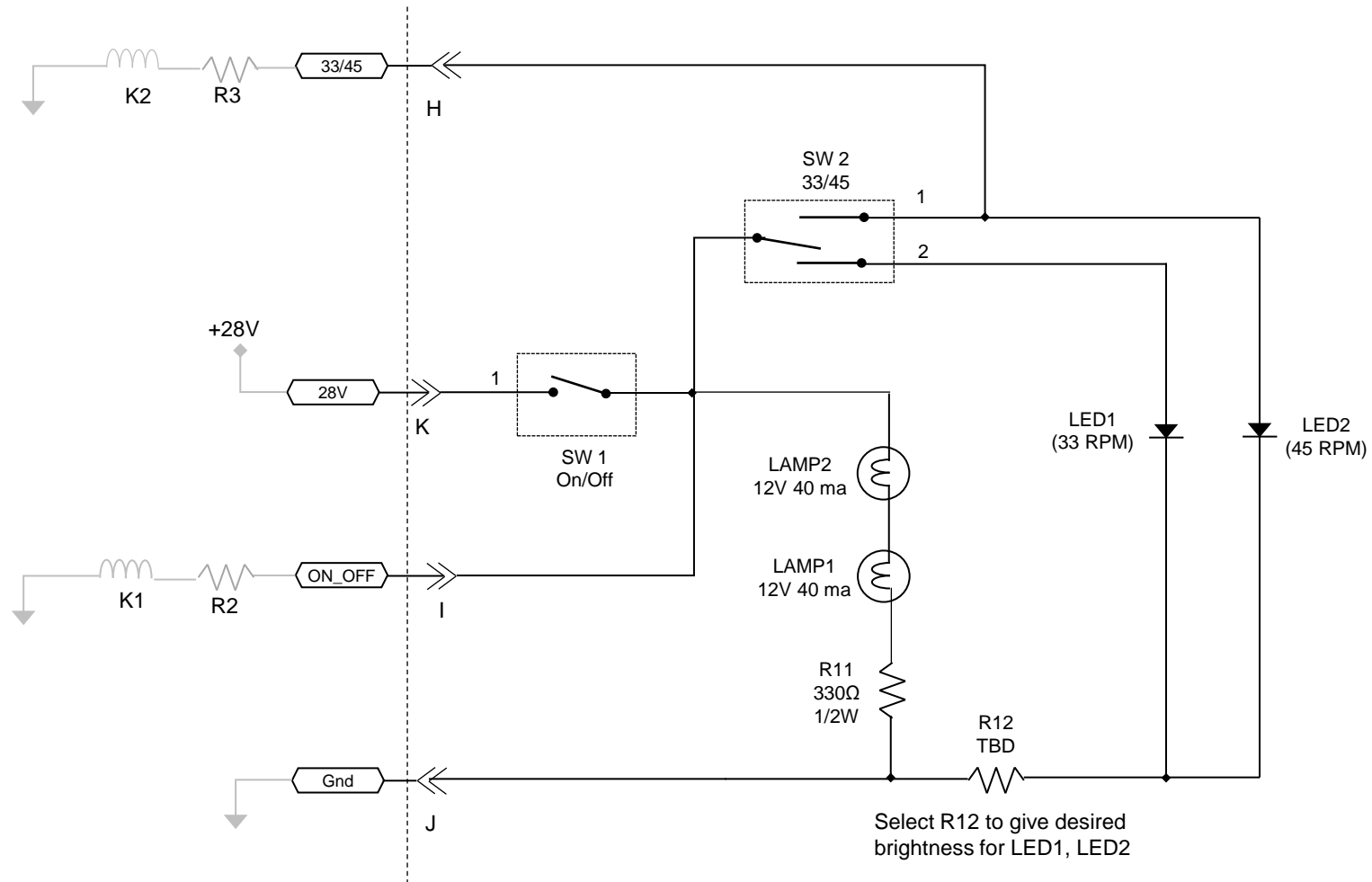


60 Hz LED Strobe Circuit



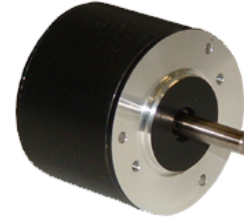
TT On/Off and Speed Select

Replaces the small PCB in the TT console



BLWR17

- 42mm Round Body
- Compact Size and Power Density
- Long Life and Highly Reliable
- Cost Effective Replacement for Brush DC Motors
- Can be Customized for
 - Maximum Speed
 - Winding Current
 - Shaft Options
 - Cables and Connectors

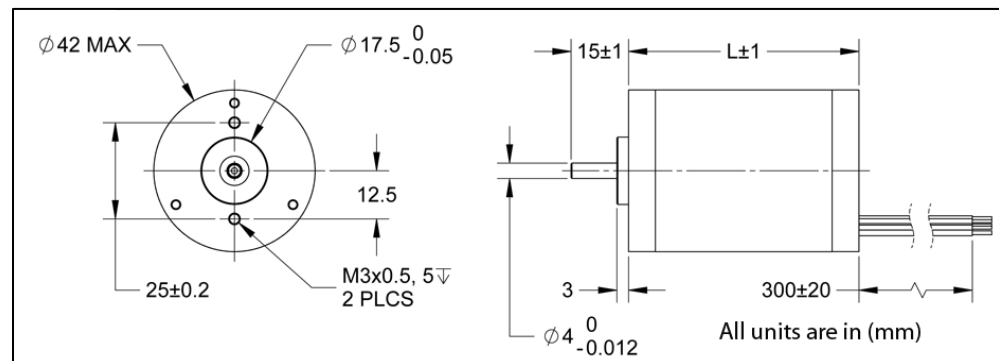


The BLWR17 Series Brushless DC Motors come in a compact package with high power density. These motors are cost effective solutions to many velocity control applications. The star wound motor comes in a standard 8-lead configuration. We can also customize the winding to perfectly match your voltage, current, and maximum operating speed. Special shaft modifications, cables and connectors are also available upon request.

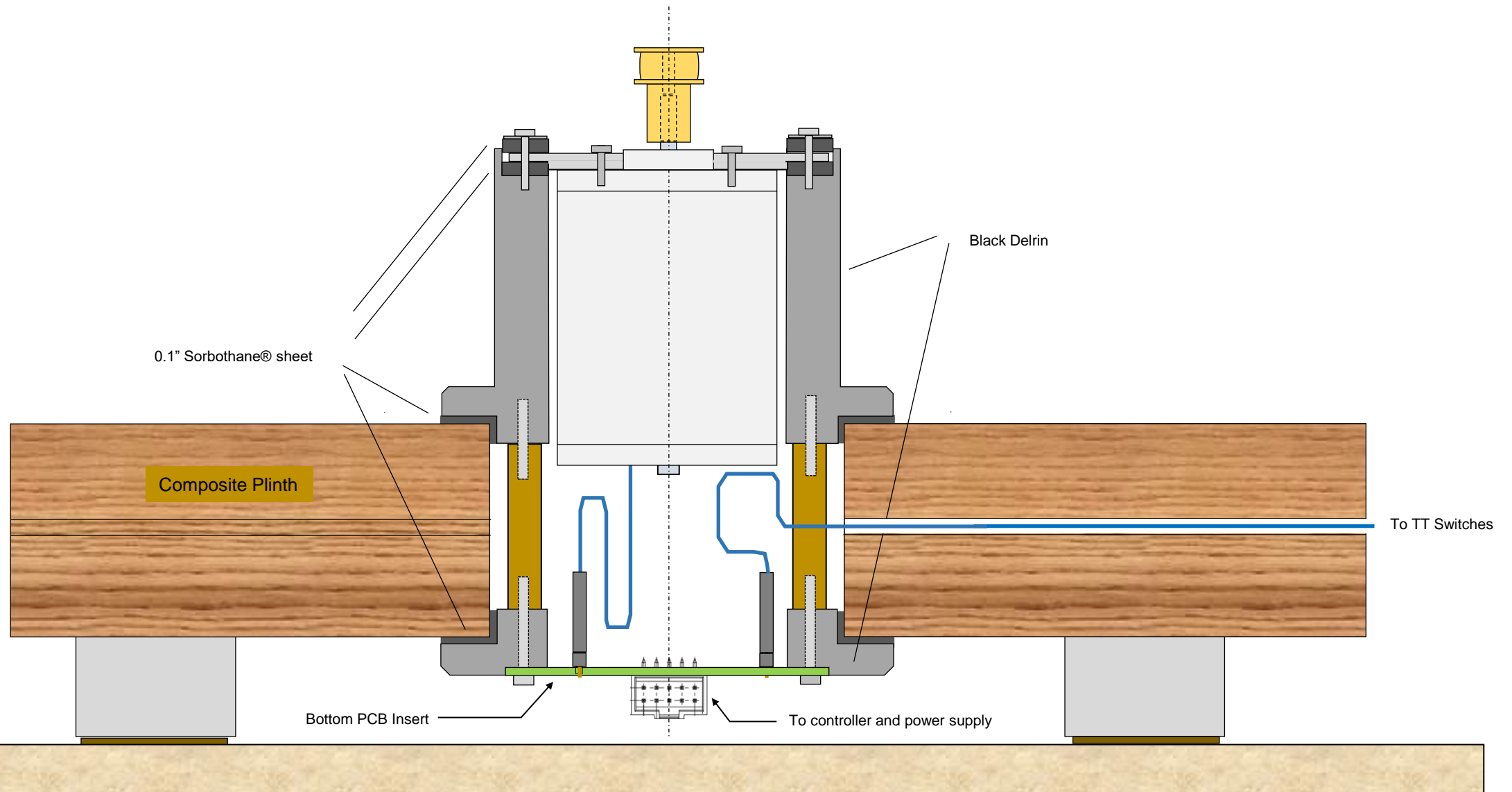
Item	Rated Voltage (V)	Rated Power (Watts)	Rated Torque (oz-in)	Rated Speed (rpm)	Torque Constant (oz-in/A)	Back EMF Voltage (V/kRPM)	Line-to-Line Resistance (ohm)	Line-to-Line Inductance (mH)	Rotor Inertia (oz-in-sec ²)	"L" Length (mm)	Weight (lbs)	Price (USD)	SAVE Quantity Discounts	Stock Status	Add To Cart
BLWR171S-12V-4000	12	8	2.8	4000	3.36	1.47	1.50	2.26	0.000221	30	0.55	\$150.00	view here	Contact Us	
BLWR171S-12V-5000	12	10	2.8	5000	2.28	1.21	1.08	0.84	0.000221	30	0.55	\$150.00	view here	Contact Us	
BLWR172S-12V-4200	12	25	7.9	4200	2.79	1.46	0.48	0.44	0.000221	60	0.88	\$109.00	view here	10 in Stock	
BLWR172S-24V-2000	24	12	7.9	2000	9.70	5.48	5.80	6.40	0.000467	60	0.88	\$109.00	view here	13 in Stock	
BLWR172S-24V-4200	24	25	7.9	4200	5.45	3.84	1.60	1.94	0.000467	60	0.88	\$109.00	view here	10 in Stock	
BLWR173S-12V-4000	12	63	21.2	4000	2.73	1.53	0.19	0.22	0.000821	85	1.54	\$159.00	view here	5 in Stock	
BLWR173S-24V-2000	24	31	21.2	2000	9.88	5.60	2.18	2.96	0.000821	85	1.54	\$159.00	view here	1 in Stock	
BLWR173S-24V-4000	24	62	21.2	4000	5.47	3.10	0.71	0.86	0.000821	85	1.54	\$159.00	view here	13 in Stock	

Description	Motor Wire Color	Cable Adder Color
Hall Supply	Yellow	Red/White
Hall A	Blue	Orange/White
Hall B	Orange	Orange
Hall C	Brown	Yellow/White
Hall Ground	White	Black/White
Phase A	Green	Yellow
Phase B	Red	Red
Phase C	Black	Black

Note: The 8th character "S" denotes a single shaft, use "D" for double shaft. Custom leadwires, cables, connectors, and windings are available upon request.

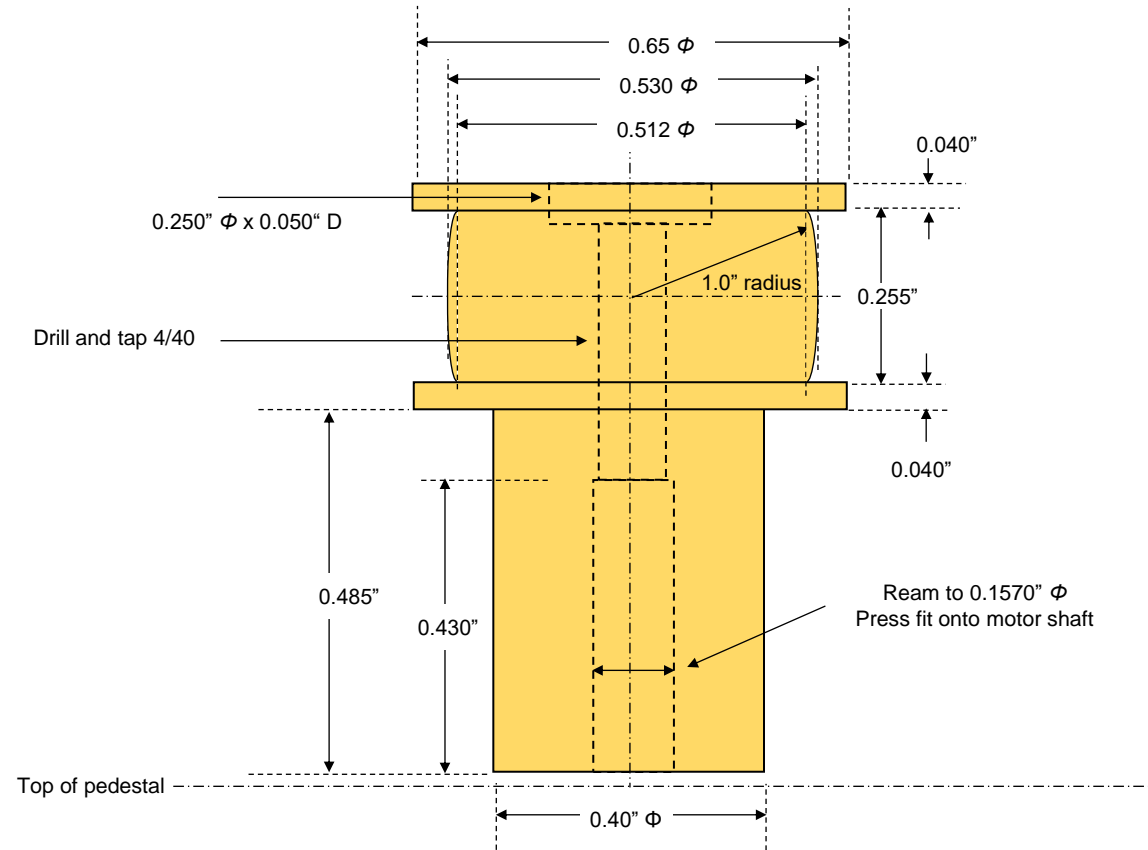


Motor, Pedestal, and Pulley

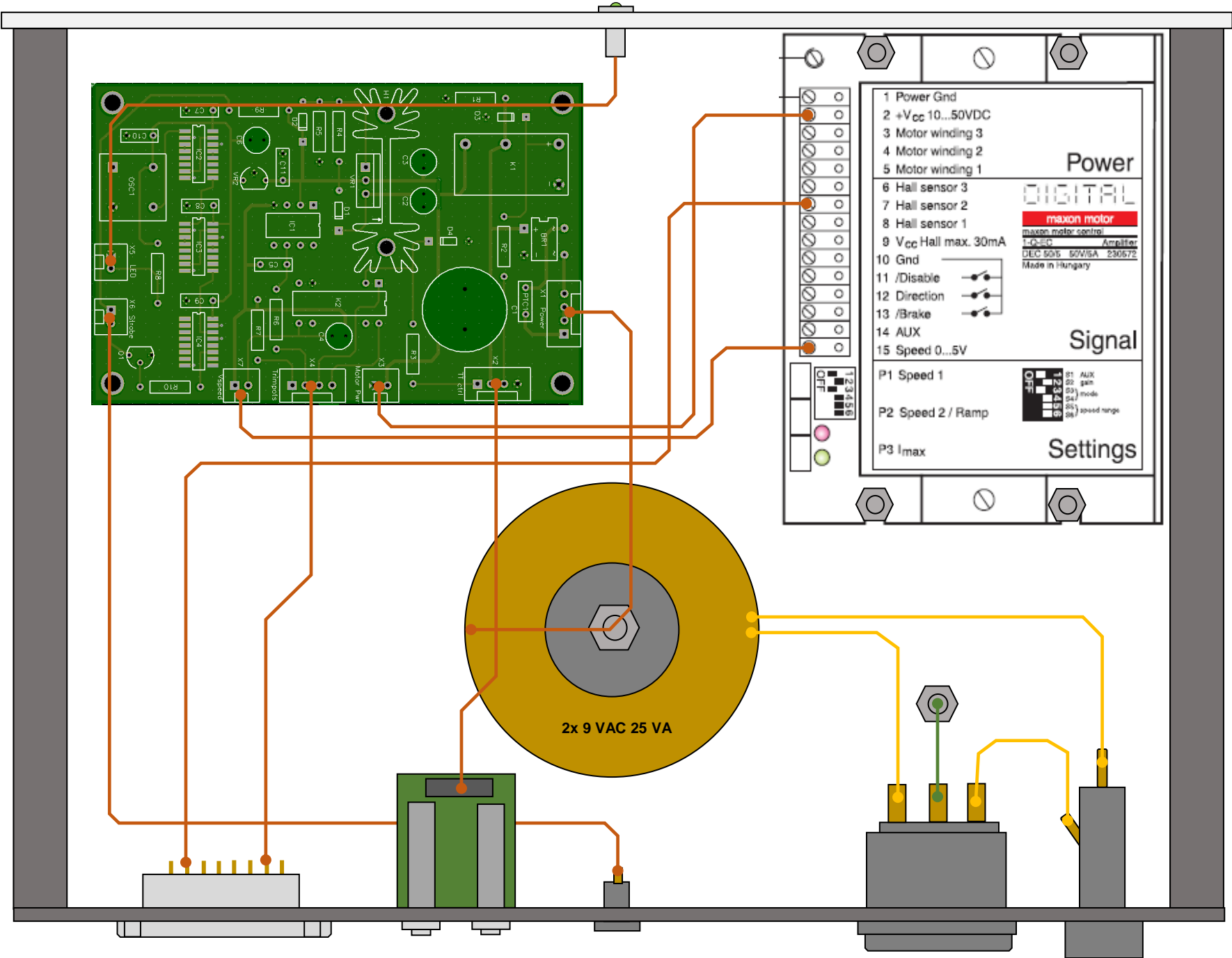


Drive Pulley

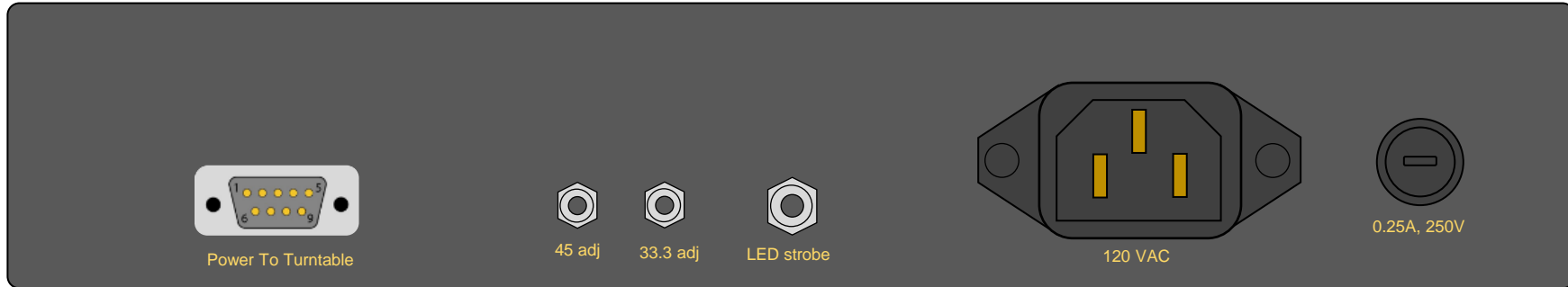
Material: brass



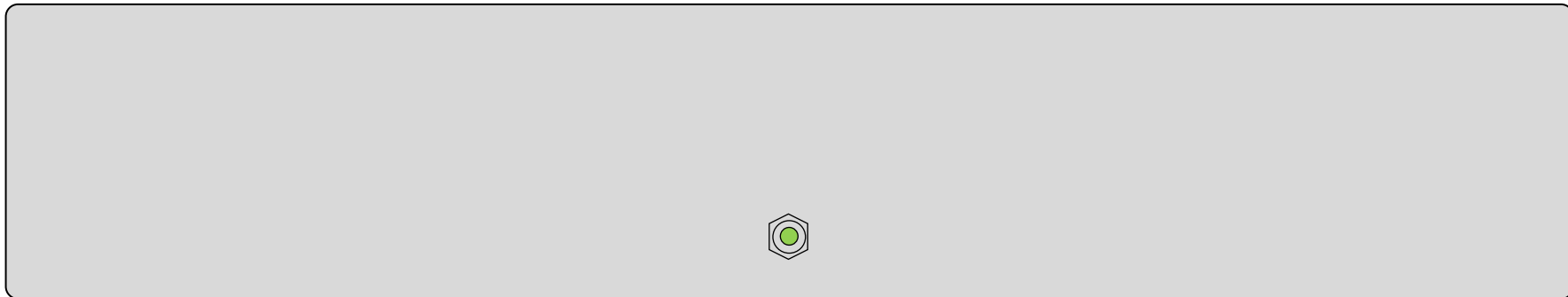
Power Supply Component Layout



Chassis Layout

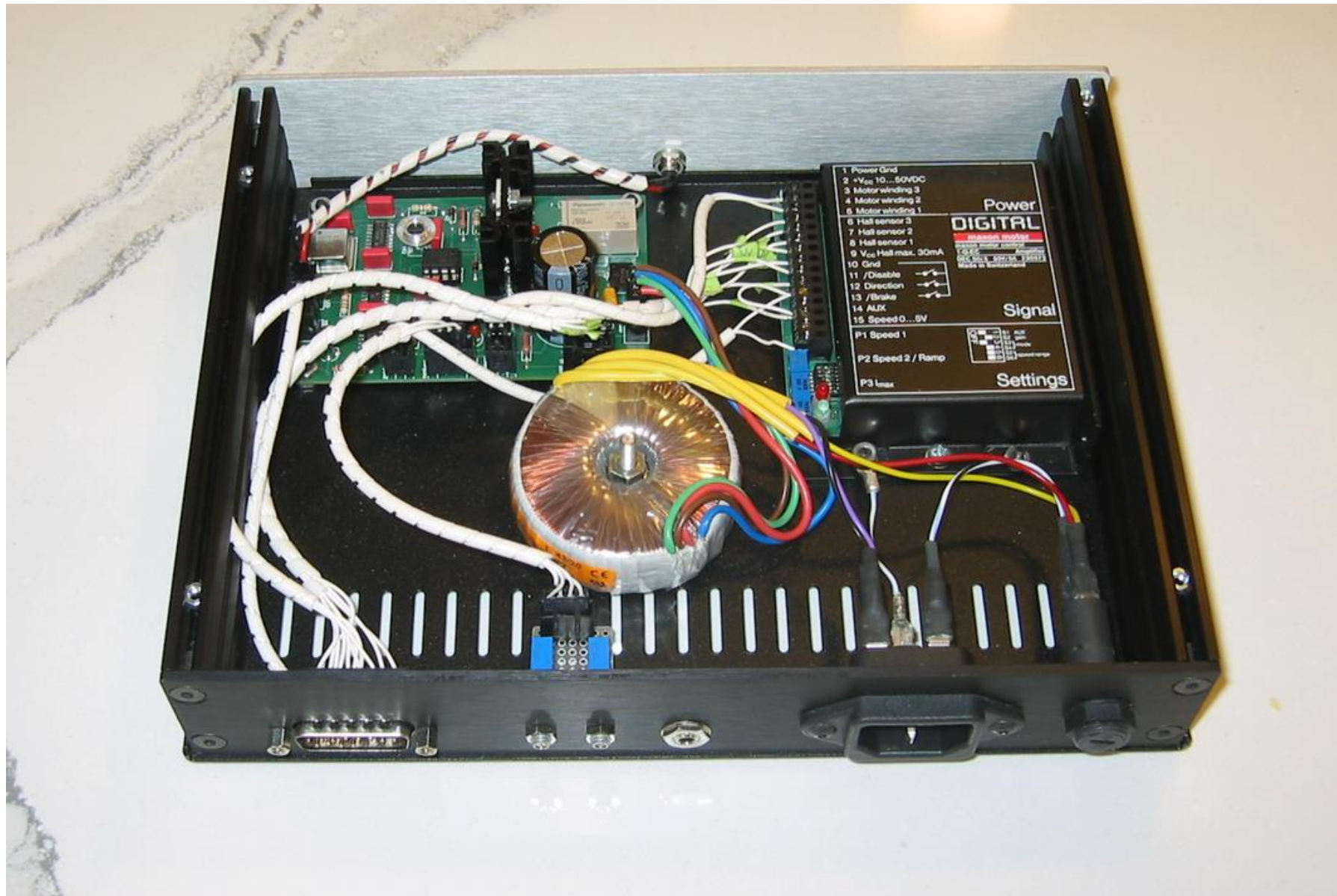


Back Panel



Front Panel

Power Supply, Controller Component Layout



TT Back View



TT Front View

