



RBF-DBW40 is a single-phase, bidirectional DC motor driver-based steer-by-wire and brake-by-wire control unit. It provides a simple CAN-Bus and serial interface for users to integrate as a drive-by-wire solution into their vehicles. With its user-friendly GUI, application-specific configurations like CAN message IDs, feedback sensor interface, limitations, etc. can be made. RBF-DBW40 has been designed to handle 40 A currents.

## Typical Applications

---

- Drive-by-Wire for Self-Driving Cars
- Electronic Power Assistant System
- Industrial Position Control

## Advantages

---

- High efficiency
- Fast response
- Torque sensor interface
- CAN-Bus and serial communication interfaces
- Linear and angular position control
- Open-loop or closed-loop control
- ROS1/2 drivers

# Typical Specification

## Low Signal Electrical Specifications

Item	Descriptions	Min	Typical	Max	Unit
Power Supply	V Supply-Input	5	-	24	V
Power Consumption	Normal operation conditions		1		W
5V	Power supply output for Torque Sensor, up to 1A, Output	-	5	-	V
CAN 2.0b	Recessive Bus Voltage	2	2.5	3	V
	CAN H Output Voltage	2.75	3.5	4.5	V
	CAN L Output Voltage	0.5	1.25	2.25	V
	Absolute Input Voltage	-58	-	58	V
USB	UV <sub>OH</sub>	2.8	-	3.6	V
	UV <sub>OL</sub>	0	-	0.3	V
	Differential Common Mode	0.8	-	2.5	V
	Driver Output Impedance	26	29	44	Ohms
Torque Sensor A, B	Analog Digital Converter Pin, Low pass Filtered, Cutoff Frequency: 10kHz	0	-	5	V

## DC Motor Driver Electrical Specifications

Item	Descriptions	Min	Typical	Max	Unit
Power	DC Motor Power Input	8	-	40	V
VDS(HS)	Drain-Source Voltage High Side	-40	-	-	V
VDS(LS)	Drain-Source Voltage Low Side	-	-	40	V
Current	ID <sub>(HS)</sub> Continuous Drain Current	-50	-	50	A
	ID <sub>(LS)</sub> Continuous Drain Current	-44	-	44	A
	ID <sub>(HS)</sub> Pulsed Drain Current	-117		117	A
	ID <sub>(LS)</sub> Pulsed Drain Current	-104	-	104	A



## Features

---

- CAN 2.0b interface with configurable 250, 500, 1000 kbps
- Fully configurable CAN transmit and receive ID with user interface
- 1 KB internal E<sup>2</sup>PROM for configurations
- 2 x Analog or digital input
- Closed-loop control via user interface
- Direct duty-cycle control mode option
- Driver intervention detection with torque sensor interface
- Current, voltage, temperature, angle monitoring
- Over current protection
- Error management (over current, motor connection, under voltage, temperature)
- ROS1/ROS2 driver support
- 1-Watt idle consumption
- IP-65

The user interface is able to display all the data in the control unit. Users can configure limits, CAN Bus messages, and controller coefficients with the user interface.



# Dimensions(mm)

---



