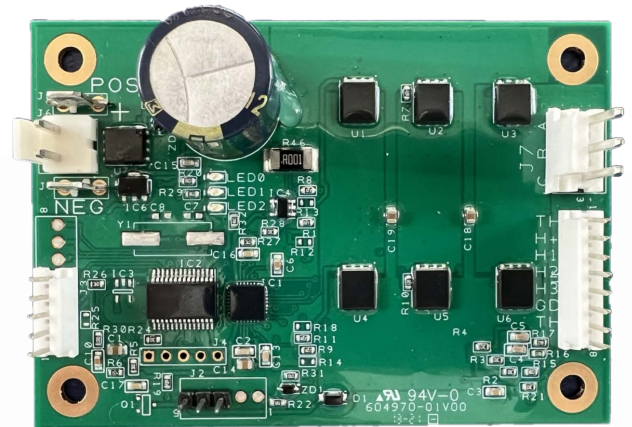


## FEATURES

- > Easy to use BLDC technology/operation
- > Off-the-shelf integration with many Thomas pumps
- > Go from development to production with no changes
- > No PCBA cooling required
- > Variable speed PWM input signal for full range flexibility
- > Closed loop speed operation for consistent performance
- > Advanced algorithm for better efficiency at low speeds
- > Integrated mounting plate for simple and safe install
- > Optional PWM generator accessory for quick testing

## COMPATIBLE STANDARD PUMPS

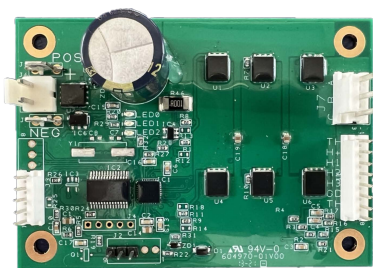
230ZC30/12  
250ZC35/24  
260ZC35/24  
2110ZA26/12  
2109ZA26/12M  
2220ZA30/12  
2220ZA3012M  
2250ZC35/24



**BLDC**

# ZB Series

Voltage	12V or 24V
Continuous Motor Current	8 Amps



## GENERAL PERFORMANCE INFORMATION

Compatible pump series (8 pole motor)	2109ZA26/12M, 2110ZA26/12, 2220ZA30/12, 2220ZA3012M			
Compatible pump series (10 pole motor)	230ZC30/12, 250ZC35/24, 260ZC35/24, 2250ZC35/24			
	<b>Minimum</b>	<b>Typical</b>	<b>Maximum</b>	<b>Unit</b>
Operating input voltage	11	24	30	kHz
Continuous motor current	-	-	8	A RMS
Tachometer output signal	3.1	3.3	3.5	Vdc
Tachometer pulses per revolution (8 pole)	-	4	-	Digital pulse
Tachometer pulses per revolution (10 pole)	-	5	-	Digital pulse
Operating ambient temperature	32° (0°)	-	113° (45°)	Fahrenheit (Celcius)
Operating ambient humidity	0%	-	90%	RH, Non-Condensing
Net weight	-	2.9 (83)	-	Ounces (Grams)

For additional details or special requirements, please consult your Thomas representative regarding your system needs. All test values are nominal and for reference only. They are not guaranteed maximum or minimum limits, nor do they imply mean or median. See Thomas instruction sheet 603288DOC for more details on the ZB controller. Test Reference: T22-0205, T22-212, T22-213, T22-214, T22-0215, T22-0216.

## PWM CONTROL INFORMATION

The PWM configuration of the ZB controller requires a PWM signal to operate. PWM is a "Pulse Width Modulation" signal input that tells the controller what speed to operate the pump.

There are 3 possible modes of operation:

- External PWM signal connected to the control board
- Optional Thomas PWM generator accessory for lab testing
- To operate at 100% speed, a 3.3Vdc voltage can be applied to the PWM input pin. This can be done externally, or by connecting pin 3 on connector J3 (PWM input) to pin 5 on connector J3 (3.3Vdc source, see instruction sheet 603288DOC for more detail.)

Description	Minimum	Typical	Maximum	Unit
PWM Input Frequency	14	20	26	kHz
PWM Signal Voltage	2.0 (high trigger)	3.3	3.5	Vdc
Input Speed Range (8 Pole Motors)	1062 (5% PWM)	-	4375 (95%)	RPM
Input Speed Range (10 Pole Motors)	850 (5% PWM)	-	3500 (95%)	RPM

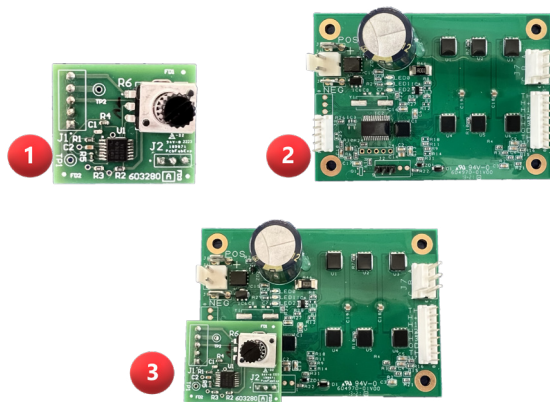
## ORDER INFORMATION

Discription	Type/Features	Model Number
ZB Controller	PWM Input	ZB603288P0IW
PWM Generator Accessory	-	ZZ603287P00
ZB Controller Instruction Sheet	Available on thomaspumps.com	603288DOC
PWM Generator Instruction Sheet	Available on thomaspumps.com	603287DOC

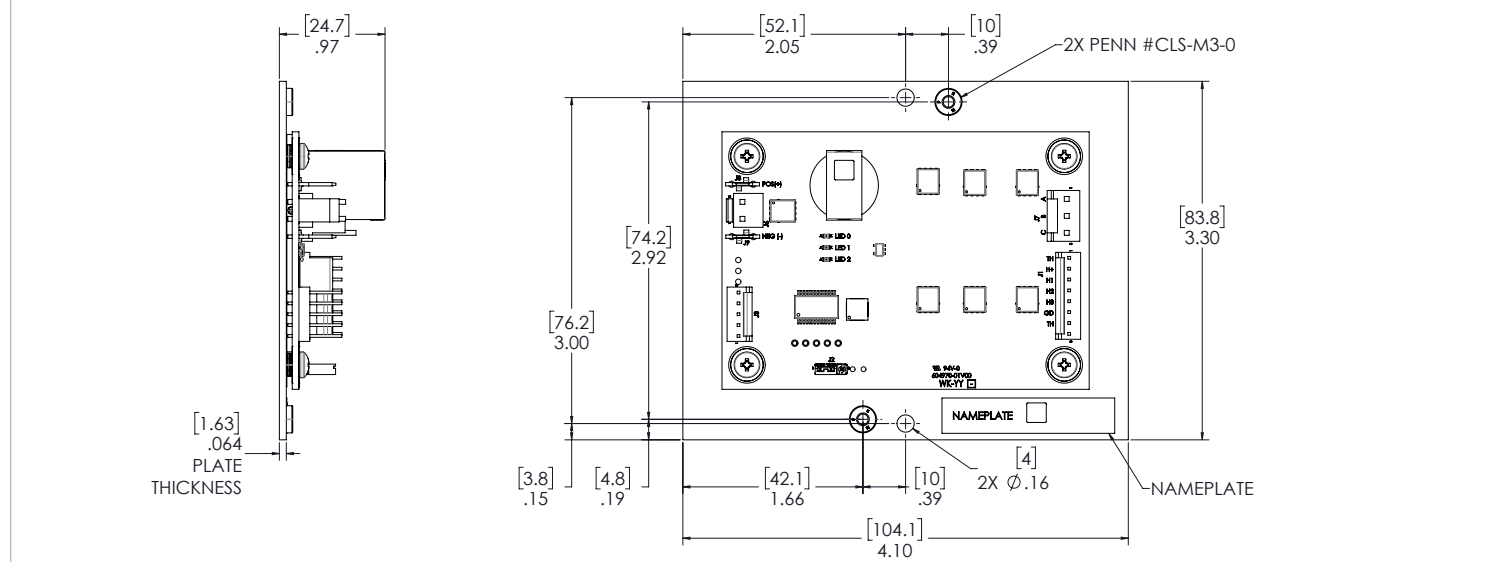
## PWM GENERATOR ACCESSORY

The PWM generator accessory (1) can be installed on the ZB controller for quick lab testing. This accessory is sold separately and installed on the J3 & J2 header (2) of the standard ZB controller with PWM input. Once installed on the ZB controller (3) the potentiometer will adjust the speed of a connected pump.

See Thomas instruction sheet 603287DOC for more details on the PWM generator accessory.



## PRODUCT DIMENSIONS



## GENERAL CONTACT

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