

Feature

- Wide supply voltage (12 ~ 70 VDC).
- Output up to 190A.
- Built-in electromagnetic brake control.
- RS485 (Trumman Multi-drive ModBus protocol) or CANopen control.
- Seamless operation in speed and position mode (encoder model only).
- Programmable I/O and operation parameters.
- A minor built-in regenerative shunt circuit (external resistor required).

Product Number Code

BVP C - F 130 C E

① ② ③ ④ ⑤ ⑥

① Series	BVP : BVP (J06) series BLDC motor drive.	
② Communication	Blank : RS232	C : RS485/CAN BUS
③ Power Supply Voltage	F : 12 ~ 70VDC	
④ Max Output Current	130 : 130A	190: 190A
⑤ Reserved	-	
⑥ Feature	E : Standard (Encoder)	P: Pallet(lift fork) model

Power Specifications

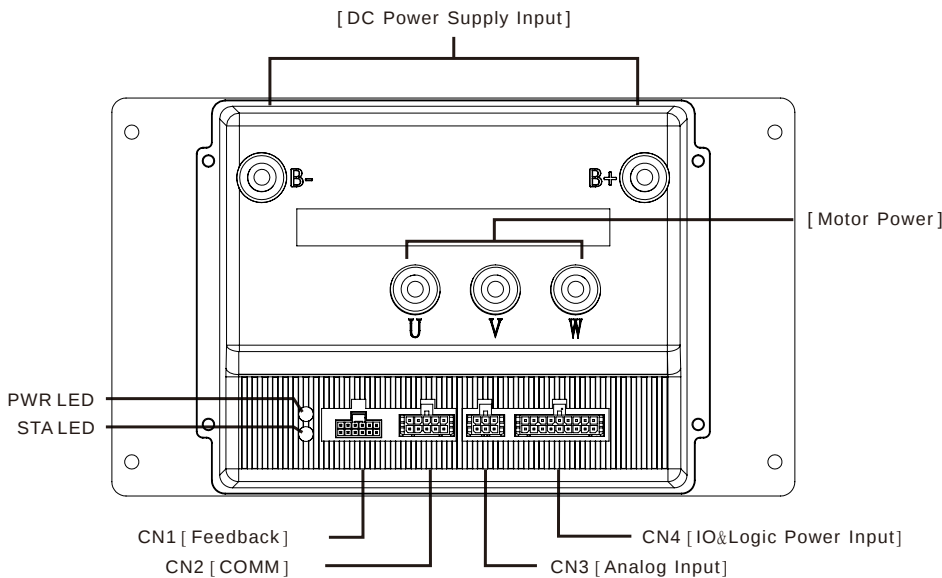
Model	BVP-F130CP BVPC-F130CE	BVP-F190CP BVPC-F190CE
Power Supply Voltage	12VDC ~ 70VDC	
Regenerative active voltage	73 VDC (programmable), 2Amax, External resistor specification depends on the power system and the load.	
Over Voltage Limit	80 VDC	
Under Voltage Limit	8 VDC	
Rated Continuous Output Current	65 Arms	95 Arms
Peak Output Current	130 A	190 A
Motor Feedback Supported	Incremental encoder, Hall	
Cooling	Natural convection	
Operating Temperature	-20 ~ 45 degC	
Storage Temperature	-20 ~ 70 degC	
Dimension (mm)	(240.5) * (140.5) * (71)	

Control Specifications

Model	BVP-F130CP BVP-F190CP	BVPC-F130CE BVPC-F190CE
Inputs Specifications	4 transistor input (X1 to X4), SOURCE/SINK (set by internal pull-up 5V). 1 transistor in/out (DIO1), Either IN or OUT at a time. SOURCE/SINK (set by internal pull-up 5V shared with X1 to X4). 1 transistor input (X6-KEY-IN), SINK with internal pull-up 5V. Internal Power Supply: 5VDC External Power Supply: 15 to 60VDC Low active of high active programmable (low level on voltage <= 0.5VDC).	
	NA	2 differential digital inputs (XH1+/-, XH2+/-) XH2 shared the same pin with Y3. Support 5V differential / Internal 5V SINK / External 24VDC (external resistor 2.4K required). Low active of high active programmable.
Input Functions	Can be set to the following functions: S/S(FWD) 、 DIR(REV) 、 FREE 、 STOP-MODE 、 EBRAKE/ALM-RST 、 ALM-RST 、 D0 、 D1 、 EBRAKE/RUN 、 SERVO-ON 、 E-FWD 、 E-REV 、 STOP 、 EXT-ERROR 、 CW-LIMIT 、 CCW-LIMIT	
STO	NA	STO1, STO2, 5 to 30V PNP input (Both STO1 and STO2 must be active to operate the motor).
Outputs Specifications	3 SINK logic digital inputs (Y1, Y2, 3) XH2 shared the same pin with Y3. Internal 5VDC 3mA External 5 to 60VDC 25mA (on voltage <0.5VDC).	
High Power Output	POUT1: 2A switch to GND (PWM supported) POUT2: 3A switch to GND (PWM supported)	

Model	BVP-F130CP BVPC-F130CE	BVP-F190CP BVPC-F190CE
Output Functions	Can be set to the following functions: SPD-OUT 、ALM-OUT 、BUSY-OUT 、VA-OUT 、EN-OUT 、ALM-PULSE 、BUSY-ALM-PULSE 、RUN-OUT 、DIR-OUT 、VA-OUT2 、VA-EN-OUT 、BATT-GAUGE1 、BATT-GAUGE2 、RGN-OUT	
Analog Inputs	2 sets 0 to 5 VDC or 0 to 10 VDC (A1X, A2X)	
RS232	115200 bps. Can be connected to a PC with A_HMI software to program the drive. Modbus RTU/ASCII , Support speed/position control.	
RS485	NA	RS485: 115200 bps, Modbus RTU/ASCII, (Multi-drive / Multi-drive Lite), Support speed/position control.
CAN BUS	NA	CAN BUS: 1Mbps, CANopen, Support speed/position control.
Protect Functions	Over-current, Over-load, Over-voltage, Under-voltage, Main circuit overheat, Feedback sensor error, Over-speed, EEPROM error, communication error.	
Operation Functions	Open-loop duty, speed mode, position mode, torque limit, slight position keeping (hall model), regenerative energy release (external resistor connect to POUT2 for 3A max).	
Support Motor Feedback	Halls	Standard/Simplified incremental encoder (resolution programmable), Halls

Interface



LED	
Function	Description
PWR-LED (Green)	ON: Normal (logic power on) OFF: logic power off Super-Fast Blink (30ms): STO OFF (STO power not connected). Fast Blink (80ms): Drive in WAIT status (KEY-SWITCH is OFF, motor drive disabled). Slow Blink: Alarm occurs. The type of alarm can be confirmed by the blink count.
STA-LED (Orange)	ON: RS-485/CANBUS normal Blank: RS-485/CANBUS signal received but cannot identify the message (baud-rate or protocol error). OFF RS-485/CANBUS no signal (not connected).

DC Main Power Supply Input Terminals (B+ B-)

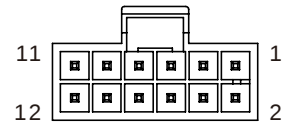
Terminal	Description
B+	Main power supply input (reference to B-).
B-	DC power ground.

Motor Power Terminals (U, V, W)

Terminal	Description
U	Motor phase U
V	Motor phase V
W	Motor phase W

CN1 Motor Feedback Connector

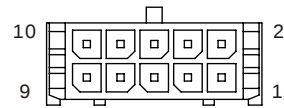
Pin	Function	Description
1	5V	5V for feedback sensor (reference go signal ground).
2	GND	Signal ground.
3	A-	ENC A-/Hall U (either one)
4	A+	ENC A+
5	B-	ENC B-/Hall V (either one)
6	B+	ENC B+
7	C-	ENC C-/Hall W (either one)
8	C+	ENC C+
9	S0	ENC with Hall U / MOTOR-OT (either one)
10	S2	ENC with Hall W /PWM-IN (either one)
11	S1	ENC with Hall V
12	NC	NC



2.50mm pitch
Mating Connector: optional accessory

CN2 COMM Connector

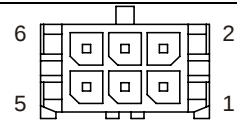
Pin	Function	Description
1	CAN_L	CANBUS L
2	CAN_H	CANBUS H
3	RS485_B	RS485 B
4	RS485_A	RS485 A
5	5V	Signal 5V (reference go signal ground).
6	GND	Signal ground.
7	RS232_TX	Drive RS232 TX
8	RS232_RX	Drive RS232 RX
9	NC	Do not use.
10	NC	Do not use.



3.0mm pitch
Mating Connector: optional accessory

CN3 Analog/STO Input Connector

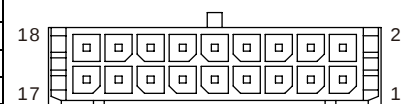
Pin	Function	Description
1	STO1	STO signal 1
2	A2X	Analog input 2(Can be used as 5V SOURCE digital input.)
3	STO2	STO signal 2
4	GND	Signal ground.
5	A1X	Analog input 1 (Can be used as 5V SOURCE digital input.)
6	5V	Signal 5V (reference go signal ground).



3.0mm pitch
Mating Connector: optional accessory

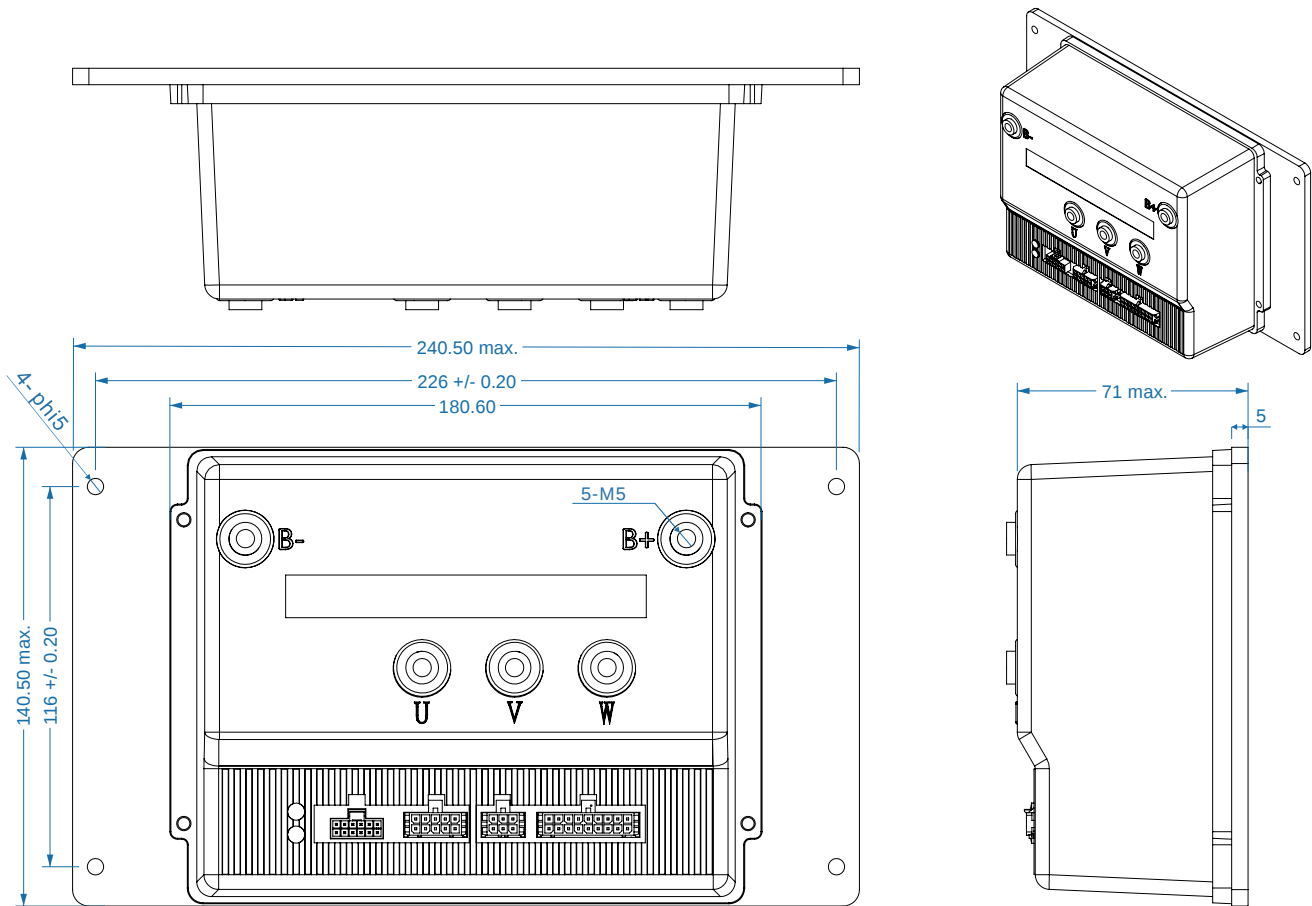
CN4 IO & Logic Input Connector

Pin	Function	Description	Default
1	X1	Programmable digital input X1	CCW/CW(REV)
2	X3	Programmable digital input X3	E-REV
3	X2	Programmable digital input X2	START/STOP(FWD)
4	X4	Programmable digital input X4	ALM-RST
5	XH1-	Differential digital input XH1-	Reserved.
6	DIO1	Programmable digital input/output DIO1 (either input or output at a time)	D0 (input)
7	XH1+	Differential digital input XH1+	Reserved.
8	X6-KEY-IN	Programmable digital input X6 / KEY-IN	KEY-SWITCH
9	XH2-	Differential digital input XH2-	Reserved.
10	Y1	Programmable digital output Y1	BUSY-OUT
11	Y3/XH2+	Programmable digital output Y3 / Differential digital input XH2+ (either one)	SPD-OUT
12	Y2	Programmable digital output Y2	ALM-OUT
13	GND	Logic power ground/signal ground.	-
14	POUT1	High power output 1 (2A)	PWR-RELAY-OUT
15	12V	12VDC supply output 20mA	-
16	POUT2	High power output 2 (3A)	MBRAKE-OUT
17	CTRL+	Logic power supply input (12 to 70VDC)	-
18	PO-PWR	High power output high side (Main power voltage)	-



3.0mm pitch
Mating Connector: optional accessory

Dimension (Unit: mm)



Protect Function (Alarm)

When an alarm occurs, the motor coasts to stop, the ALM-OUT outputs ON and the ALM-LED blinks.

Before resetting an alarm, always remove the cause of the alarm and ensure safety then perform one of the reset operations specified below.

- Set the ALM-RST input "OFF" for more than 0.5 sec then set it to "ON" for more than 0.5 sec then set it to "OFF".
- Cycle the power. When cycling the power please turn the power off for at least 30sec or till the PWR LED off then turn the power on again.

NOTE Some alarm can only be rest by cycling the power.

NOTE The alarm cannot be reset if the drive operation command is "ON" (e.g. START/STOP input is ON). Please set all the operation command/signal to "OFF" before rest the alarm.

■ Alarm status register

Register Address	Description
0003h	Alarm code. 0 = no alarm.

■ ALM LED

ALM LED blinks in a cycle when an alarm occurs. The blink time in each cycle is corresponding to the alarm error code.

LED Blinks/ Alarm Code	Protect Function	Description
1	Over-current	Excessive current has flown through the drive. Could be motor power short, motor stall ,or drive power is not enough.
2	Over-load	The load exceeds the rated value has applied to the motor for more than 5 sec. The load exceeds the torque limit value has applied to the motor for more than x sec (x can be set by parameter).
3	Motor feedback fault	Hall or encoder signal bad or not connected.
4	Over-voltage	The input power supply voltage has exceeded the maximum limit. Or the inertia of the load is too large.
5	Under-voltage	The input power supply voltage is under the low limit. Or bad power connection.
6	Drive main circuit overheat	The drive's heat sink temperature is over maximum limit.
7	Motor startup failed	Error in EEPROM data (Can NOT be reset by ALM-RST).
8	EEP data error	The motor temperature is too high. Or parameter 01-06 setting incorrect.
10	Motor overheat	Motor operation speed is over the parameter 05-03 setting.
12	Over-speed	(1) Encoder not connected (Can NOT be reset by ALM-RST). (2) Encoder position overflow. Reset the position with CS command before ALM-RST.
13	Encoder error	Error in EEPROM data (Can NOT be reset by ALM-RST).
14	Power On Inhibit	A run command is ON during power on.
15	External stop	EXT-ERROR input is ON. When cross-channel alarm is set to on, alarm of one channel will trigger the EXT-ERROR alarm of the other channel.
20	Hall sequence fault	The hall sequences no matching the drive's setting.
21	Communication error	The parameter setup value exceeds its limit, or the communication command was not supported. RS232 or RS485 timeout.
22	Parameter error	Parameter setup value was incorrect.

Revision History

REV	Date	Remark
1.0	20220621	1 st Release.
1.1	20220621	Minor error modification.
1.2	20220627	POUT1, POUT2 default function edited. A1X, A2X support voltage range updated. Wiring diagram updated.
1.3	20221207	M0, M1 function name modified to D0, D1. POUT2 current modified to 3Amax. I/O function description updated. Several minor content updated.