

# Bardac drives



## Instruction manual F2V

FREQUENCY SCALING			FULL SCALE INPUT	
A	B	C	ACW	CW
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20KHZ	10KHZ
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10KHZ	5KHZ
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5KHZ	2.5KHZ
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.5KHZ	2KHZ

**INPUT OPTIONS**

The input stage is a voltage comparator with one input biased midway and the other with a 47K pull up resistor to +10V.

This configuration allows either or both inputs to be taken to +/-24V.

1 single ended open collector

2 single ended driver

If pulse > 5V resistor not required

3 complementary open collector

4 complementary driver

5 magnetic pick up

Provision has been made to fit an opto isolator. This may be required if a non-isolated drive is to be used and the pulse encoder is not able to float at mains potential. The pulses energise the opto LED through R11 via T2 and T3. Two solder side links L1 and L2 are broken to allow the opto isolator to be fitted. NOTE the circuitry will be at a dangerous potential. The input frequency is limited to 10KHZ with the opto isolator fitted. T3 is the pulse input.

**SPECIFICATION**

- input 0 to 20KHZ
- output 0 to 5V
- supply +10V 5mA
- linearity 0.3%
- time constant 5mS

**ADJUSTABLE FUNCTIONS**

- input range
- output voltage
- negative output
- time constant
- opto isolation

**MECHANICAL DIMENSIONS**

- 98 mm (width)
- 25 mm (height)
- 90 mm (depth)
- 18 mm (mounting hole offset)

**WARNING**

THE F2V MIGHT BE CONNECTED TO HIGH VOLTAGE

**DANGER**

ELECTRIC SHOCK RISK

**OUTPUT OPTIONS**

The analogue output voltage is directly proportional to the input frequency. The +10V supply is taken from the drive reference which is also usually fed to the speed setpoint potentiometer. This method eliminates errors due to reference drift. The output is a 0-5V signal available at T5. A separate output is also available via a 6.8K resistor at T6 which is designed to interface directly with the tach input of drive units.

**INVERTED OUTPUT**

Provision is made for the output to be inverted. Two links must be altered to provide this function. GH broken HI made DE broken EF made a negative supply of -12V must also be connected to the -solder pad. The output range is 0 to -5V. This mode is required if the speed feedback signal must be negative. EG with the 370 type drive.

**wiring details drive types 400 800 1200**

**wiring details drive types 1600 3200**

**The F2V output must be in the inverted mode and the -12V connected.**

**The drive tacho scaling resistor R2 (470K) must be shorted. It is behind terminal 5 on the drive**

**The drive tacho scaling resistor R2 (910K) must be shorted. It is behind terminal 10 next to the relay on the drive**

**The tacho sensitivity of the 370 must be increased to accommodate the -5V full scale output of the F2V. Refer to the 370 manual.**

The drives E400i and 400i have 4 mounting holes for the F2V unit. Terminals 1, 2, 4, 6 are connected to the signal pads marked 1, 2, 4, 6 and R2 (470K) is removed. Pin 16 which was the tacho input now becomes a single ended open collector pulse input. R2 can be found directly behind the connector pin 22.

**SET UP PROCEDURE** first set the drive up in armature voltage feedback mode with the output from the F2V unit disconnected. Calculate the full scale frequency and select the appropriate frequency range on the F2V. With the drive at full speed adjust the SCALE preset to obtain 5V at terminal 5 of the F2V. When this has been achieved TURN OFF the power and connect the F2V output to the drive and modify the drive feedback resistors as detailed above. Turn on and fine tune MAX SPEED.

HEALTH AND SAFETY AT WORK. ELECTRICAL DEVICES CONSTITUTE A SAFETY HAZARD. IT IS THE RESPONSIBILITY OF THE USER TO ENSURE COMPLIANCE WITH ANY ACTS OR BYLAWS IN FORCE. ONLY SKILLED PERSONS SHOULD INSTALL THIS EQUIPMENT.

BARDAC CORP. DOES NOT ACCEPT ANY LIABILITY WHATSOEVER FOR THE INSTALLATION, FITNESS FOR PURPOSE OR APPLICATION OF ITS PRODUCTS. IT IS THE USER'S RESPONSIBILITY TO ENSURE THE UNIT IS CORRECTLY USED AND INSTALLED.



The F2V is a complex component only for professional assemblers. The unit is CE marked according to LVD 73/23/EEC amended 93/68/EEC. Follow these installation guidelines for EMC compatibility. Further measures may be necessary. Installers must have a level of technical competence to correctly install. The EMC behaviour is the responsibility of the manufacturer of the system or installation using this component. The F2V is a linear analogue component and noise emissions are minimal. Use the unit in the same enclosure as the drive unit. Comply with the installation guidelines of the drive unit.