

## Application Note #2509

### ICS-48032-F Opto-Isolated break for the DMC-40x0 extended IO

The ICS-48032-F is a breakout board for the DMC-40x0 series controllers that provides opto-isolation for the extended I/O.

There are 4 banks of 8 configurable I/O available on the DMC-40x0. With the ICS-48032-F each bank can be ordered pre-configured as inputs, sinking outputs or sourcing outputs. This application note provides the dimensions (Figure 1), ordering information and technical information for the ICS-48032-F.

#### Dimensions:

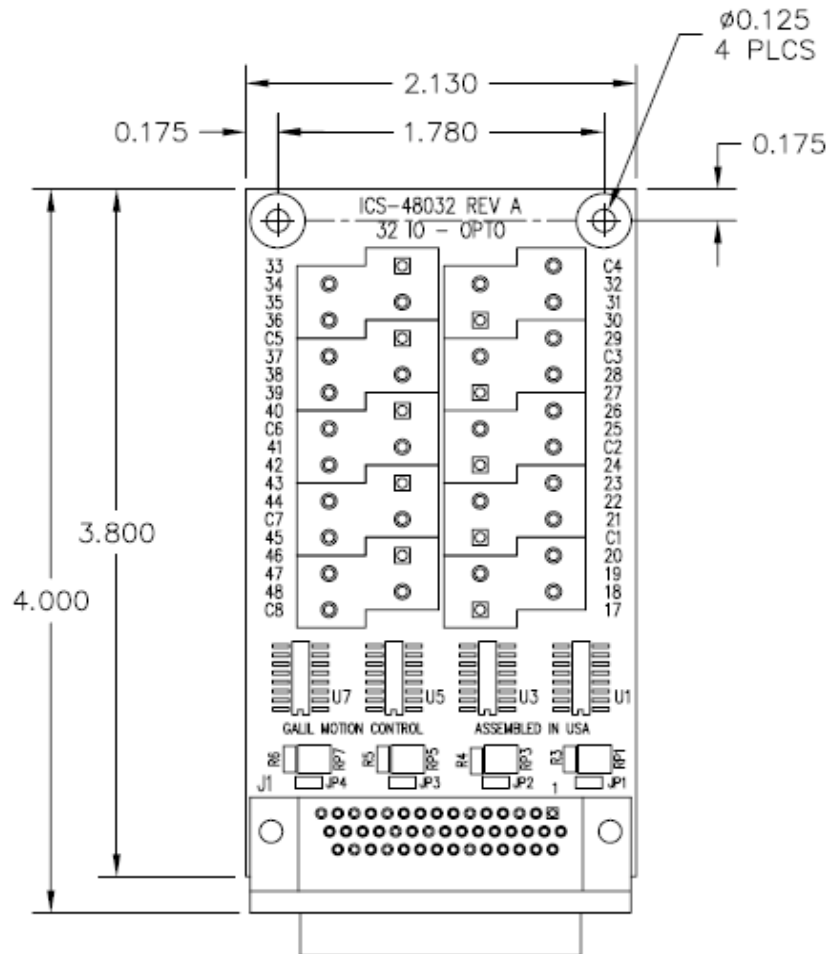


Figure 1 : Dimensions of ICS-48032-F



## Sourcing Outputs:

### Electrical Specifications:

Maximum A-Common Voltage: 28 VDC

Minimum A-Common Voltage: 5 VDC

Current Rating: 25mA max sourcing

Figure 2 shows the opto-isolated sourcing outputs for the ICS-48032-F.

Banks configured as sourcing outputs have the ability to source 25mA to an external device. An external supply is needed to power the opto-isolated outputs in the range of 5-28 VDC. The positive voltage of the supply (+Vs) should be connected to the A-Common, and the power supply ground (-Vs) should be connected to B-Common. As shown in Figure 3, the load should be connected to the appropriate terminal number on one side and to -Vs or B-Common on the other.

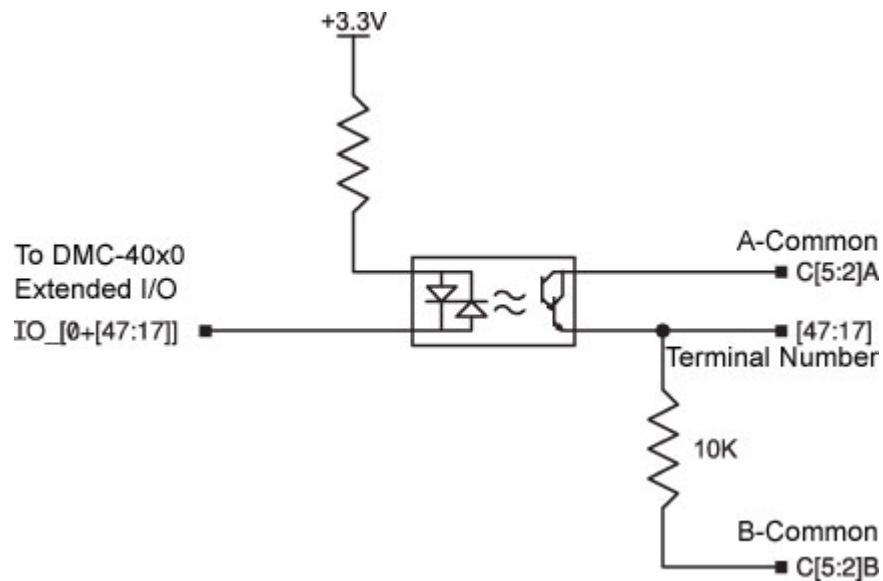


Figure 2 : Sourcing Output Circuit for ICS-48032-F

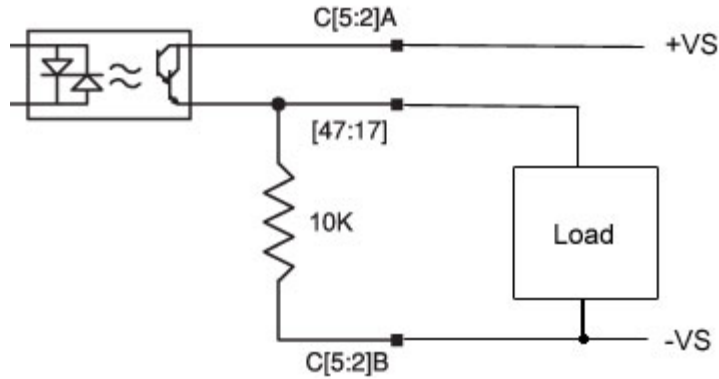


Figure 3 : Sourcing Output with Load

## Sinking Outputs:

### Electrical Specifications:

- Maximum B-Common Voltage: 28 VDC
- Minimum B-Common Voltage: 5 VDC
- Maximum sinking current: 25 mA

Figure 4 shows the opto-isolated sinking outputs for the ICS-48032-F.

Banks configured as sinking outputs have the ability to sink 25mA to an external device. An external supply is needed to power the opto-isolated outputs in the range of 5-28 VDC. The positive voltage of the supply (+Vs) should be connected to the B-Common, and the power supply ground (-Vs) should be connected to A-Common. As shown in Figure 5, the load should be connected to the appropriate terminal number on one side and to +Vs or B-Common on the other.

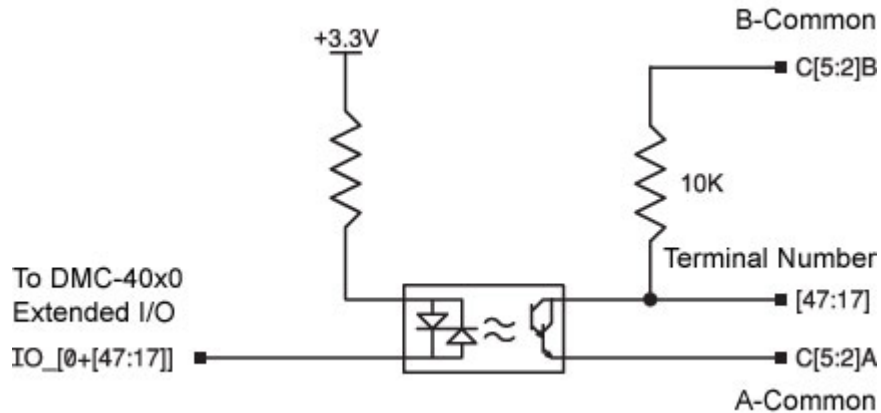


Figure 4 : Sinking Output Circuit for ICS-48032-F

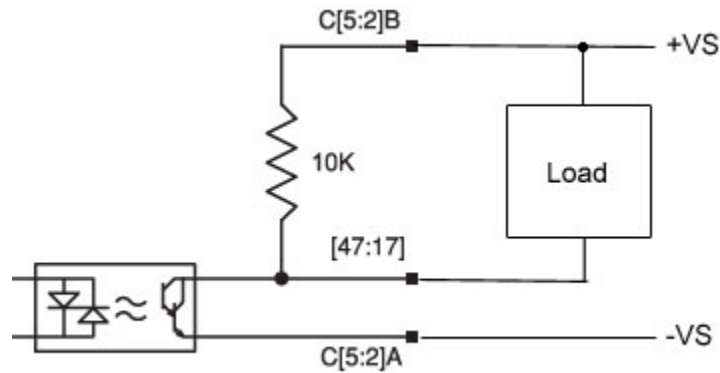


Figure 5 : Sinking Output with Load

## Inputs:

### Electrical Specifications:

Maximum A-Common Voltage : 28 VDC  
 Minimum Current to turn on an Input : 1mA

Figure 6 shows the opto-isolated input circuit for the ICS-48032-F.

All inputs can be used as active high or low – An external supply is needed to power the opto-isolated inputs. The positive voltage of the supply (+Vs) connected to the A-Common will configure the inputs for active low. Connecting the power supply ground to the A-Common will configure the inputs for active high.

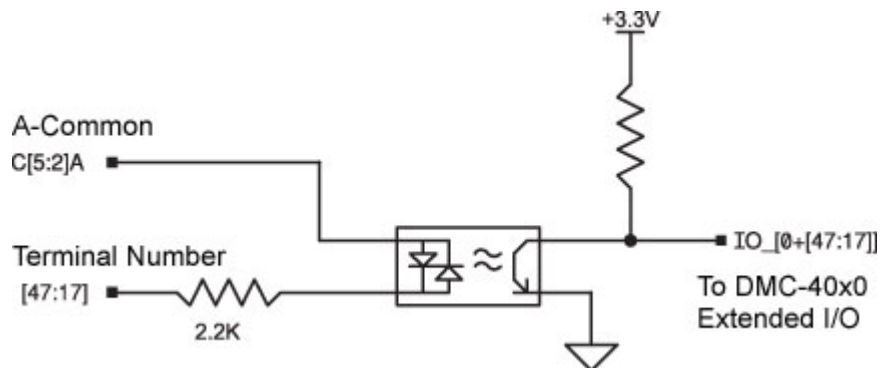


Figure 6 : Input Circuit for ICS-48032-F

## RoHS:

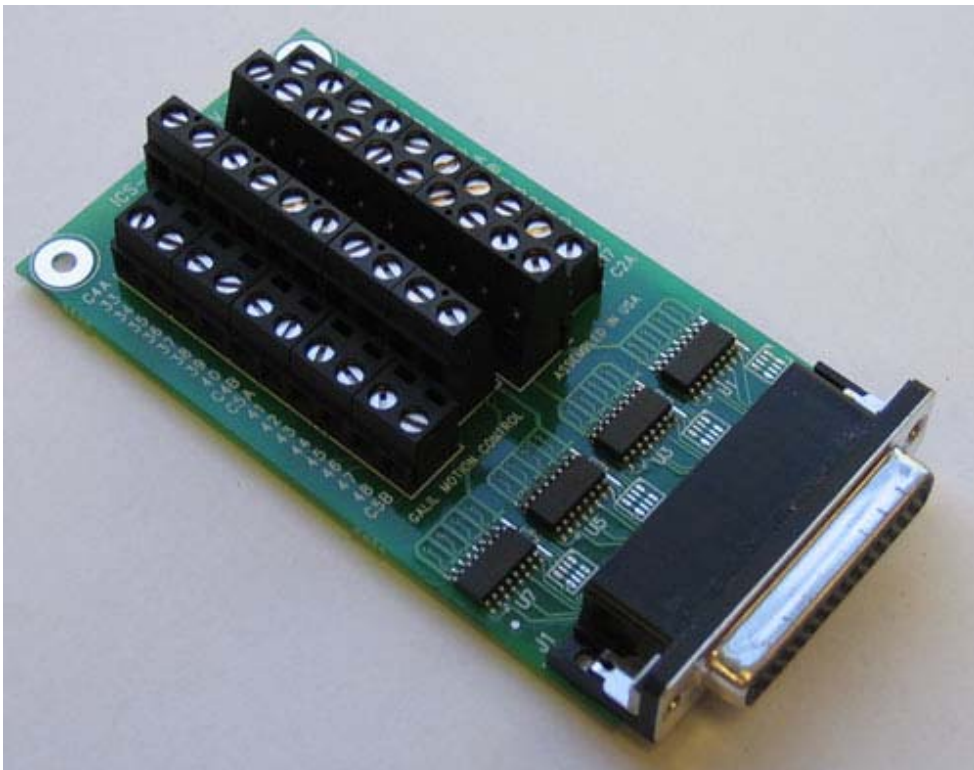
Galil Motion Control, Inc. certifies that the ICS-48044-M meets the 2002/95/EC (RoHS) requirements.

Level 1: RoHS Compliance Certification

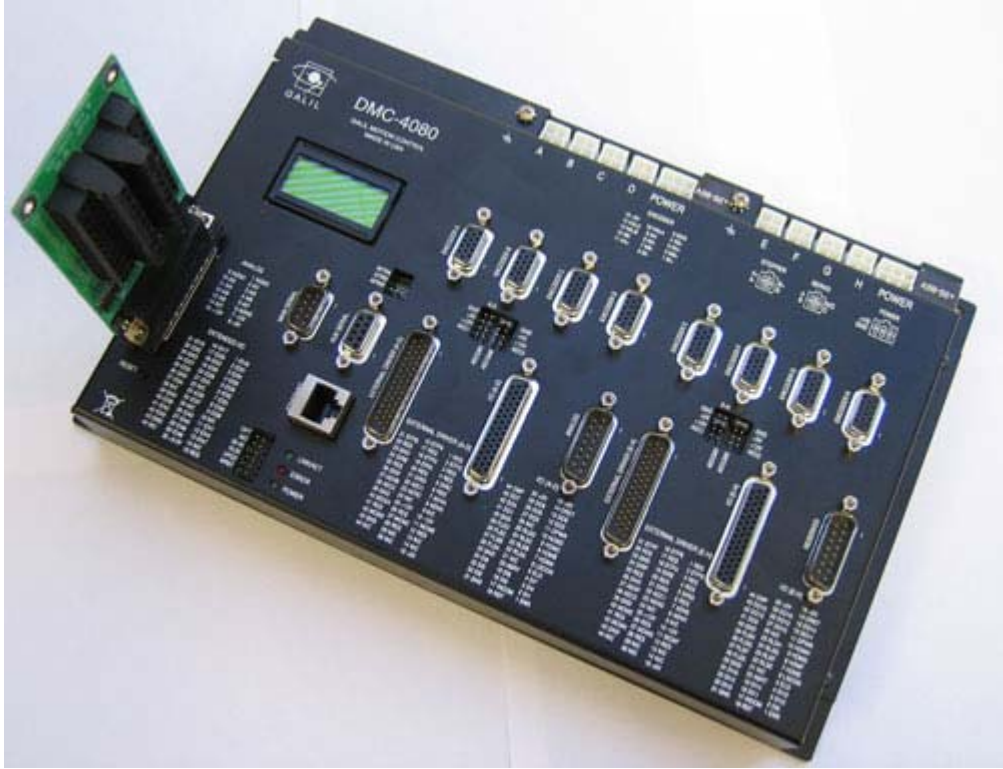
Galil Motion Control, Inc. states the above products and any of its homogenous materials, do not contain each of the 6 substances above the RoHS thresholds.

Lead	<1000 PPM
Mercury	<1000 PPM
Hexavalent Chromium	<1000 PPM
PBB	<1000 PPM
PBDE	<1000 PPM
Cadmium	< 100 PPM

**Pictures:**



**Figure 7 : ICS-48032-F**



**Figure 8 : ICS-48032-F on DMC-4080**