

## Instruction notes for electrical personnel

### UL-Recognition (UL 61800-5-1 and CSA C22.2 No 274-13)

While operating the mcDSA-F15-EtherCAT in USA or Canada it is essential to observe the following information.

### Input / Output Ratings

#### Input ratings: DC Voltage Isolated Power Source

Circuit	Input Voltage (V DC)	Input Current (A DC)	Frequency (Hz)	Base Frequency PWM (kHz) / Duty Cycle	Phases
Control	24	3.2	DC	-	1
Power	24	54	DC	-	1
	60	45	DC	-	1

#### Output ratings:

Circuit	Output Voltage (V DC)	Output Current (A)	Frequency (Hz)	Base Frequency PWM (kHz) / Duty Cycle	Phases
Power	24	54	0 .. 5k	25, 32, 50	3
	60	45	0 .. 5k	25, 32, 50	3
	Max 60	225 ( peak )	0 .. 5k	Ton = x s Min. Toff = 30 s	3

Current and Ton values can be chosen freely if the I<sup>2</sup>t is under 75973 A<sup>2</sup>s with following formula: I<sup>2</sup> x Ton <= 75973 A<sup>2</sup>s = (I<sup>2</sup>)<sub>max</sub>



**Important**

#### General Requirements:

- Open type brushless DC (BLDC) servo motor controller
- Maximum Surrounding Air Temperature 40°C
- Installation on a secondary side of an PELV isolated power supply (DVC A circuit)
- For use in pollution Degree 2 and overvoltage Category II environments only
- Motor overtemperature sensing is not provided by the drive. Where required, integral thermal protection shall be provided on or in the motor(s).
- Multiple rated equipment (See **Input / Output Ratings**)
- Torque of Terminal X1 = 20.5 Lb. in.



**Important**

#### Solid State Short Circuit Protection:

**USA:** Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

**Canada:** Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the Canadian Electrical Code, Part I.



**Important**

**Motor Overload Protection:** provided by IxT current limit at 115% rated motor load

The motor is protected by a dynamic current limitation (IxT) which must be adjusted for each used type of motor. Information on peak current, continuous current and permissible overload time have to be gathered from the motor manufacturer.

The following parameters have to be set:

- 3224.00h - Mode (CURR\_DynLimitMode)
- 3224.01h - Peak Current (CURR\_DynLimitPeak)
- 3224.02h - Continuous Current (CURR\_DynLimitCont)
- 3224.03h - Time (CURR\_DynLimitTime)

The dynamic current limitation is set back to default with power loss. Therefore the motor has to cool down to ambient temperature before restart. Cooling down times are provided by the motor manufacturer. A restart without enough cooling down time can damage the motor and drive controller even if the dynamic current limiting is set properly. To set the parameters please read the manual.



**Important**

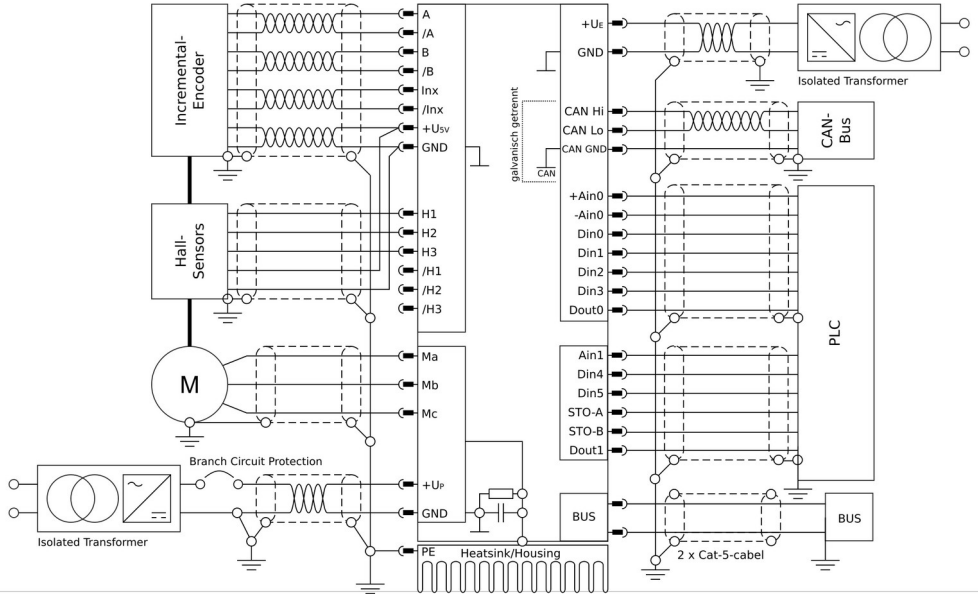
#### Branch Circuit Protection:

UL 489 circuit breaker  
 60A, 60VDC, 1 pole, 10kA SCCR

#### Field wiring terminals:

- Use 60°C/75°C copper conductors only
- X1 – AWG 6, X2 – AWG 24, X3 – AWG 24, X4 – AWG 24

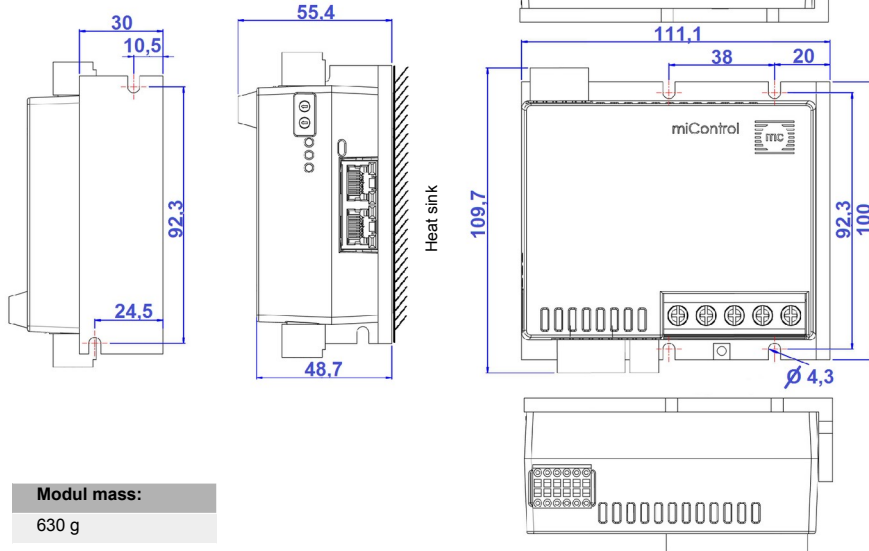
# Wiring Diagram (Principle Circuit Diagram) and Dimension



## Mounting / Heat sink:

Use 14" x 14" x 0.08" aluminium plate or heat sink with equivalent thermal characteristic

Mounting / Heat sink drawing



## Modul mass:

630 g