

Interface Control Document FICD #012	Revision: 0	Date: 05-may-09
Motors - YAMS Motor Controller connections		
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Brief Summary:

The present Interface document describes the interface between motors and the YAMS motor controller.

Keywords: *motor, stepper motor, limit switch, safety stop*



1 Introduction

YAMS, “Yet Another Motor Subrack”, is a modular motor subrack equipped with an intelligent motor controller (Galil DMC-21x3 series) and various motor power drives (IMS ImxH Plus series, Elmo Ocarina/Castanet, etc...).

This document presents the motor and ancillary circuits connections.



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3 YAMS Connectors

3.1 Stepper Motor connector

Cannon Trident Connector System – Ringlock Circular Connector

12 socket contacts, mates with Standard Plugs

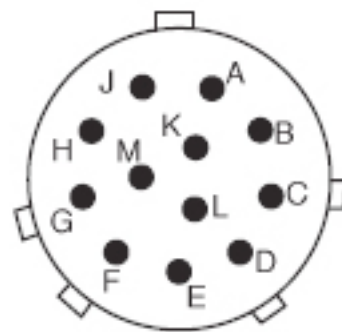
Type ITT-CANNON 192922-1210 (Elettra Catalogue 321730212)

Cannon Trident Connector System

Ringlock Circular Connectors

Contact Cavity Arrangements

Mating Face View, Standard Plug
(Mating Face View, Reversed Plug is mirror image)



**12 Way
Shell Size 14**

Socket	Function	Socket	Function
A	Motor phase A+	G	RLS
B	Motor phase A-	H	HOME
C	Motor phase B+	J	Brake+
D	Motor phase B-	K	Estop in
E	Opto+	L	GND
F	FLS	M	PE

MotorphaseA+,A-,B+,B-

These are the power connections to the 2-phase stepper motor.

Opto+

External supply for FLS/RLS/HOME optocouplers.

FLS

Forward Limit Switch (closed/tied to GND=motor not on limit)

RLS

Reverse Limit Switch (closed/tied to GND=motor not on limit)

HOME

Home Limit Switch (closed/tied to GND=motor not on limit)

Brake+

Brake supply (max 1Amp @ 24Vdc, return to GND),

(no current/0V = brake on, current/24V = brake off)

Estopin

Motion abort input, abort on +24V/disconnected (normal motion on closed/tied to GND)

GND

Ground

PE

Protective Earth

FLS, RLS, HOME, Estopin are optocouplers input (20 mA activation current) of TLP627.

3.2 Encoder connector



Receptacle
e

D Subminiature 15 socket contacts

Socket	Function	Socket	Function
1	RS422 Encoder A+	9	RS422 Encoder A-
2	GND	10	Reserved
3	RS422 Encoder B+	11	RS422 Encoder B-
4	+5V	12	Reserved
5	AIN_Power+	13	Fault
6	AIN_Power-	14	RS422 Encoder I+
7	RS422 Encoder I-	15	AIN_Power_GND
8	AIN		

RS422-encodersignals:A+/A-,B+/B-,I+/I-

These are the encoder quadrature signals and index (reference mark).

Fault

RS422 fault signal (currentlty not implemented)

+5V/GND

RS422 encoder supply.

AIN_Power+/AIN_Power-/AIN_Power_GND

Analog encoder supply.

AIN

Analog encoder signal.

3.3 Power connector

Cannon Trident Connector System – Ringlock Circular Connector

8 socket contacts, mates with Standard Plugs

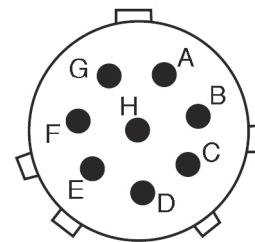
Type ITT-CANNON 192922-1200 (Elettra Catalogue 321730208)

Cannon Trident Connector System

Ringlock Circular Connectors

Contact Cavity Arrangements

Mating Face View, Standard Plug
(Mating Face View, Reversed Plug is mirror image)



**8 Way
Shell Size 12**

Socket	Function	Socket	Function
A	+24V Power out	E	GND Power in
B	+24V Power in	F	GND Power in
C	+24V Power out	G	Reserved
D	+24V Power in	H	Reserved

+24V Power out

Power (+24V) supply provided by subrack

+24V Power in

Power (+24V) supply provided by external device

GND Power in

Power (GND) supply provided by external device



Normally pins A & B, and pins C & D, and pins E & F are shorted in the mating male connector.