

7.3.1 Beckhoff I/O

Introduction

This page documents the I/O modules, process variables, and use of Beckhoff PLC systems at MEC.

IOC	Host	Location	Beckhoff	Location	PVs
ioc-mec-ek9000-01	ioc-mec-rec01	MEZZ R63B E15	bhc-mec-ek9000-01 "MEC EK9000 Ethercat Coupler"	R64B E29	MEC:EK9K1*
ioc-mec-flp-cil	None	None	bhc-mec-01 "Beckhoff controller for camera illum and flipper"	Unknown	None
ioc-mec-potentiometer	ioc-mec-misc01	MEZ R64A E42	bhc-mec-02 "Beckhoff controller for camera illum and questar encoder"	Unknown	MEC:R60:BHC:02:*
ioc-mec-userBhc	ioc-mec-misc01	MEZZ R64A E42	bhc-mec-03 "Beckhoff controller for user I/O"	R62 Rear Bottom	MEC:USR:*

IOC-MEC-EK9000-01

IOC-MEC-USERBHC

Rack layout

L->R								
Card #	1	2	3	4	5	6	7	8
Module	KS2512	KS2512	KL2808	KS3162	KS3162	KS4132	KS4132	KS4132
Function	Dual Channel Pulse Width Output Terminals, 24 V DC	Dual Channel Pulse Width Output Terminals, 24 V DC	8-channel digital output, 24 V DC, 0.5 A	2-channel analog input, voltage, 0...10 V, 16 bit, differential	2-channel analog input, voltage, 0...10 V, 16 bit, differential	Dual Channel Analog Output Terminal, -10 V to +10 V, 16 Bit	Dual Channel Analog Output Terminal, -10 V to +10 V, 16 Bit	Dual Channel Analog Output Terminal, -10 V to +10 V, 16 Bit
Card #	9	10	11	12	13	14	15	16
Module	KS4132	KL3404	KL3404	KL3312	KL3312	KL3204	KL3204	KL2124
Function	Dual Channel Analog Output Terminal, -10 V to +10 V, 16 Bit	4-channel analog input, voltage, ± 10 V, 12 bit, single-ended	4-channel analog input, voltage, ± 10 V, 12 bit, single-ended	2-channel analog input, temperature, thermocouple, 16 bit	2-channel analog input, temperature, thermocouple, 16 bit	4-channel analog input, temperature, RTD (Pt100), 16 bit	4-channel analog input, temperature, RTD (Pt100), 16 bit	4-channel digital output, 5 V DC, 20 mA

Process Variables

Type	Model	Specifications	PV	Use
Analog Input	K3162	Bus Terminal, 2-channel analog input, voltage, 0...10 V, 16 bit, differential, high-precision	MEC:USR:AIN:1	
			MEC:USR:AIN:2	
			MEC:USR:AIN:3	
			MEC:USR:AIN:4	
	K3404	Bus Terminal, 4-channel analog input, voltage, ± 10 V, 12 bit, single-ended	MEC:USR:AIN:5	Ch 1 Diode Power
			MEC:USR:AIN:6	Ch 1 RF Power
			MEC:USR:AIN:7	Ch 1 Phase
			MEC:USR:AIN:8	Ch 1 Phase x 30
			MEC:USR:AIN:9	Piezo Monitor
			MEC:USR:AIN:10	
			MEC:USR:AIN:11	

			MEC:USR:AIN:12	
Analog Output			MEC:USR:AOUT:1	
			MEC:USR:AOUT:2	
			MEC:USR:AOUT:3	
			MEC:USR:AOUT:4	
			MEC:USR:AOUT:5	RF Lock Enable
			MEC:USR:AOUT:6	Feedback Gain
Camera Illumination LEDs			MEC:USR:CIL:1	
			MEC:USR:CIL:2	
			MEC:USR:CIL:3	
			MEC:USR:CIL:4	
Digital Thermocouple Outputs			MEC:USR:DOT:1	Switch box for users LGO
			MEC:USR:DOT:2	
			MEC:USR:DOT:3	
			MEC:USR:DOT:4	
			MEC:USR:DOT:5	Digital Output < 5A
Thermocouples			MEC:USR:TC:1	
			MEC:USR:TC:1	sample_holder_top
			MEC:USR:TC:1	sample_holder_bottom
			MEC:USR:TC:1	