

The Kawasaki **I/O Interface Course** is designed to specifically address types of I/O signals, their characteristics and applications and to implement I/O signal interfaces as described below:

- Expanded use of Slogic program status
- Process control (PC) program status
- Signal timing
- External configuration and wiring
- Teach pendant interface (I/F) panel device signals
- Serial I/O signal interface with a PLC
- Zone interference signal communication

Robot motion, process control, and Slogic programs will be used to apply different types of I/O signals. Course time will consist of approximately 70% hands-on exercises and 30% classroom discussion.

**Course Goal:** Upon successful completion, the student should be able to use general purpose I/O signals, software and hardware dedicated I/O signals, external I/O signal configuration, connection of external I/O signals and remote I/O.

**Audience:** This course is primarily intended for robot operators, technicians, engineers and programmers.

**Prerequisites:** Operation and Programming

**Course Length:** 3-days (21 clock hours)

**To register:**

Call (248) 446-4298 -or-  
 email [kri-training@kri-us.com](mailto:kri-training@kri-us.com)

## Course Outline

### Day 1

#### Safety

#### Remote I/O and Expanded Slogic

- Timers
- Counters
- Retentive and non-retentive relays
- Message display

#### Process Control Programs

- Robot internal signals

### Day 2

#### Signal Timing

- General purpose I/O signals
- Clamp signals
- Block Step vs AS Language programming
- System switches

#### Discrete I/O Wiring

- Dedicated signals
- DC input and output relays, terminal blocks
- Switches, push buttons, light curtains
- Multiple parallel I/O boards, addressing

#### Teach Pendant Interface (I/F) Panel

- Lamps, push buttons
- Digital switches, toggle switches
- PLC signal addressing—Introduction

### Day 3

#### Serial I/O Communication—A/B SLC 5/03 PLC (Utilize Conveyor Process)

- Signal addressing
- External I/O devices including clamps, lever switches, photo eyes, push buttons, E-stop switches, lamps, light curtains and relays
- I/O signals associated with material handling, welding and sealing applications

#### 2-Robot Zone Communication

- 2-robot communication with zone interference signal communication
- Discrete I/O signals coordinated between robots

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