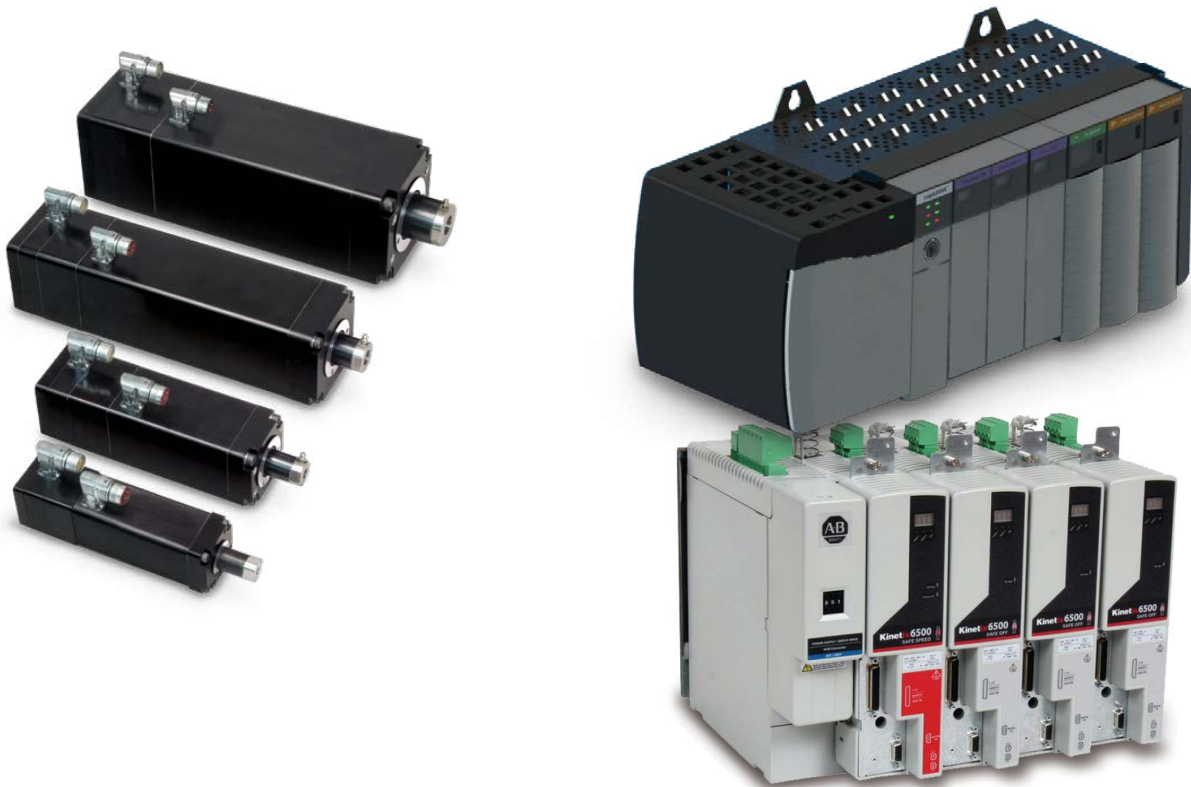


# Interfacing the Tolomatic IMA Actuator and Absolute Encoder with Allen Bradley Servo Drives



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# RA Integrated Architecture

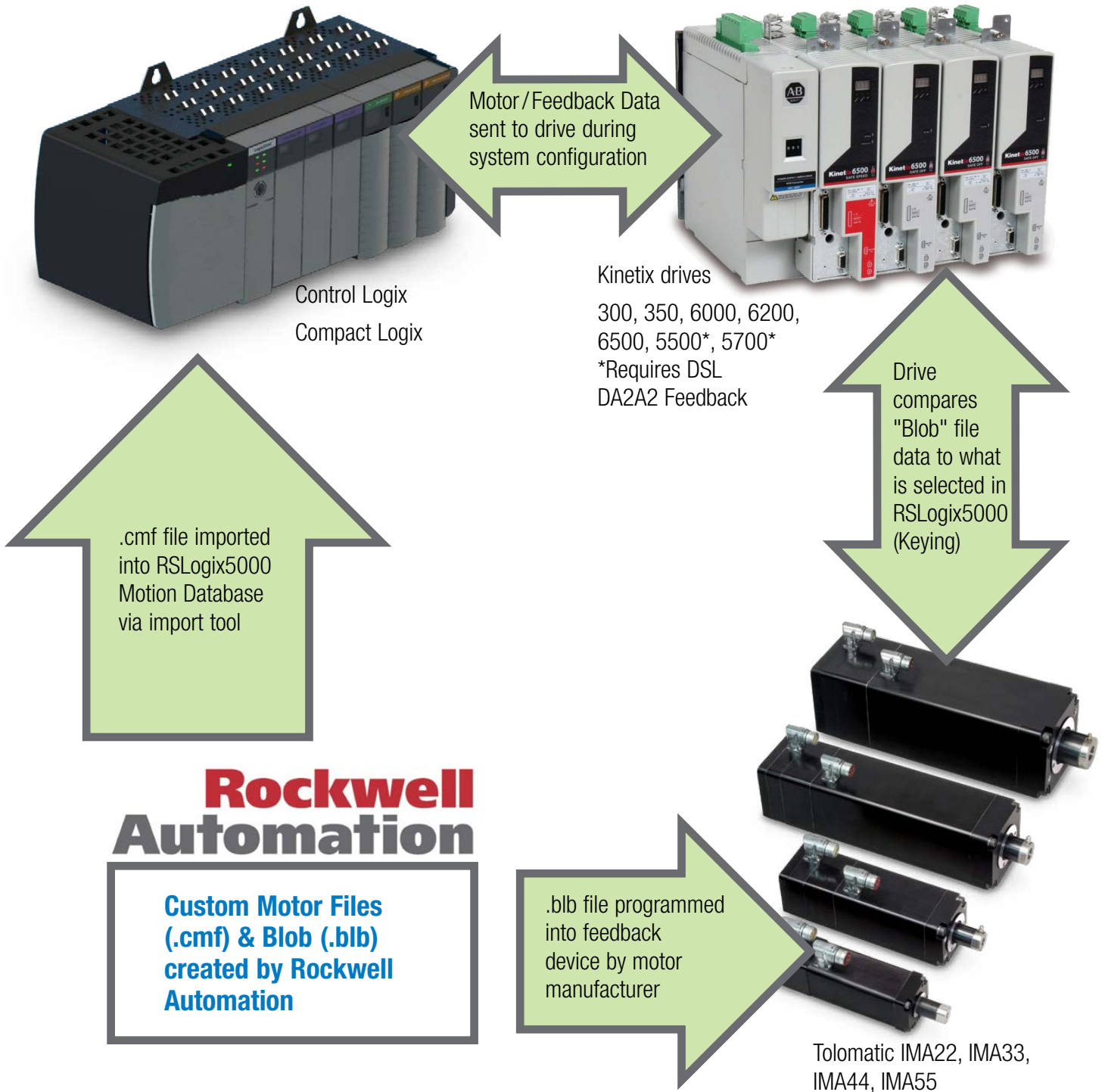


Figure 1: RA Integrated Architecture

## 1. Introduction

This technical note is meant to help explain the process of integrating the Tolomatic IMA actuators with a multi-turn absolute feedback device (Sick Hiperface Sin-Cos) for use with an Allen Bradley (Rockwell Automation) servo drive, motor/feedback cables, and PLC. Tolomatic has a technology license with Rockwell Automation to integrate the .blb file into the IMA actuator for seamless integration into the Allen Bradley control system.

## 2. Requirements:

### 1.) Tolomatic IMA actuator with absolute encoder and Allen Bradley connectors

The IMA actuator must be ordered with the Allen Bradley connectors and absolute Stegmann Hiperface encoder. The configuration to include these connectors would be 'DA1' or 'DA2'.

Example 1: IMA33 BN05 SM152.4 MV23 **DA1A1N** *Note: Hiperface with 2 connectors*

Example 2: IMA33 BN05 SM152.4 MV23 **DA2A2N** *Note: Hiperface with 1 connector*

### 2.) Allen Bradley Servo Drive

An Allen Bradley Servo Drive with the appropriate capabilities (performance) and the ability to interface with the Absolute Encoder should be used. The drive is typically selected by an Allen Bradley representative. Some of the possible drive platforms are as follows:

- **SERCOS Based:** Kinetix 2000, Kinetix 6000, Ultra3000SE, Kinetix 6200
- **CIPMotion Ethernet Based:** Kinetix 6500 (460V only), Kinetix 350, Kinetix 5500\*, Kinetix 5700\*  
\*Requires DSL DA2A2 Feedback
- **CIP/IO Ethernet Based:** Kinetix 300

### 3.) Power and Encoder Cables

The connectors on the IMA are SpeedTEC ready and wired to match an Allen Bradley MPL motor with the DA1A1 designation and an Allen Bradley VPL motor with the DA2A2 designation. Allen Bradley cables are compatible and should be used with this actuator. Please reference the IMA User Guide for the connector pinout on the IMA actuator.

[IMA User Guide](#)

### 4.) Encoder .blb File

An Allen Bradley (Rockwell Automation) generated file (.blb) is loaded into the memory of the absolute encoder. The .blb file is created by Rockwell Automation and provided to Tolomatic. The .blb file is loaded by Tolomatic prior to shipping the IMA actuator. CMF files for Tolomatic IMA actuators can be downloaded at: <https://www.tolomatic.com/info-center/product-support/#software-firmware> search for CMF

### 5.) Custom Motor File

The Allen Bradley software will need a custom motor file (.cmf) to pair the Allen Bradley drive with the actuator

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properly. This file is also created by Rockwell Automation. There are three ways to get this file:

1. Click on the previous link (<https://www.tolomatic.com/info-center/product-support/#software-firmware>) search for CMF) to download the .cmf file for Tolomatic IMA actuators.
2. Through the RSLogix 5000 V28 or newer Motor Database
3. Obtain it through Tolomatic and Allen Bradley, using the CMF Import Tool to install on the latter two.

*The two cases below describe this further.*

### **3. Examples**

#### **CASE #1**

The IMA actuator with absolute encoder will have the .blb file installed at Tolomatic. The IMA custom motor file for the Allen Bradley drive will be found within the Motor Database on RSLogix 5000 V28 or newer.

#### **CASE #2**

The IMA actuator with absolute encoder will have the .blb file installed at Tolomatic. If the IMA motor file is not in the knowledge library, the user can install the CMF Import Tool, get the motor file from Tolomatic, then import the motor file in the drive.

The CMF Import Tool can be downloaded at the following link: [Import\\_Tool.msi](#)

For information and a procedure for using the CMF Import Tool, see the document at the following link:

[Logix cmf File Import Instructions 2011 07 21.doc](#)