



## Application Spotlight

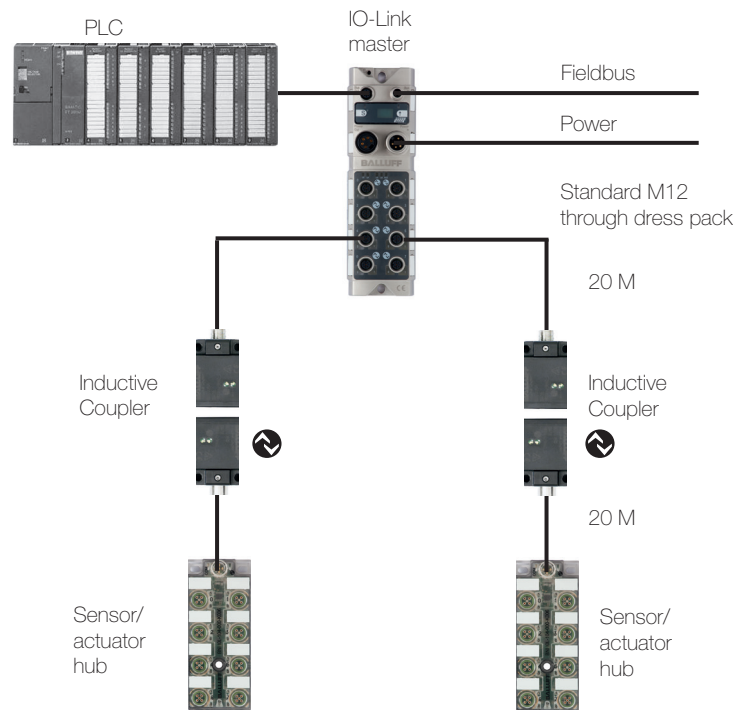
Simplify end of arm tooling with IO-Link and Balluff inductive coupling solution

The customer was experiencing excessive downtime due to the relatively low flex rating of a 23 conductor cord set. The cable ran up the dress pack to the end effector of the Fanuc Robot with a total of 30 inputs that needed to be returned to the PLC. The customer wanted a solution that could be easily integrated onto other robots while also offering flexibility to meet the needs of various other end effectors that they may install.

Through the use of a DeviceNet IO-Link Master, 2 sets of Inductive Couplers (base and remote) and 2 standard M12 sensor cables, Balluff was able to provide a solution that effectively replaced the large 23 conductor cable with a high flex solution. This eliminated the cable breakage issue and provided the advanced diagnostic features available with Balluff's Distributed I/O Modules.

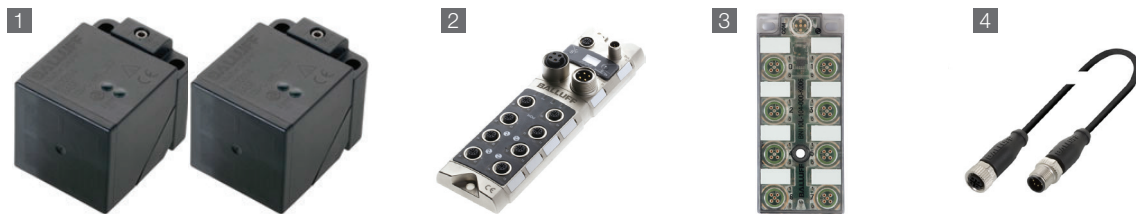
The DeviceNet IO-Link master was mounted at the base of the robot. Two high flex standard M12 sensor cables ran up the dress pack to the inductive coupler base units. The remote inductive coupler communicates with the IO-Link input hub and is permanently mounted on the end effector tool. The IO-Link input hub also features an ID capability enabling identification of the tooling. The identification of the tooling is key to this application due to the vast amount of tools that need to be identified.

After installation, the unplanned downtime was virtually eliminated. Similar solutions are possible with other major networks such as EtherNet/IP, PROFINET, EtherCAT, PROFIBUS or CC-LINK.



### Benefits of Balluff's Network IO-Link Master & Inductive Couplers:

- Inductive couplers pass signal and power through an air gap; eliminating physical contacts on the end effector tooling
- Minimizes unplanned downtime
- Eliminates cable breakage that caused the downtime
- Input requirements are addressed
- Solution can be applied to other robotic systems experiencing similar issues



Order Code	Part Number	Description	#
BIC0070	BIC 1B0-ITA50-Q40KFU-SM4A4A	Inductive Coupler Base	1
BIC0071	BIC 2B0-ITA50-Q40KFU-SM4A5A	Inductive Coupler Remote	1
BNI005A	BNI DNT-502-100-Z001	DeviceNet™ IO-Link Master	2
BNI005W	BNI IOL-302-S01-K006-C01	IO-Link Hub (16-input) with ID	3
BCC05M1	BCC M415-M414-3A-304-EX44T2-05	Standard M12, 5m Sensor Cable (high-flex)	4