

# Pluto D45 Safety PLC

## With Analog Inputs and High Speed Counters

### Inspired by industry

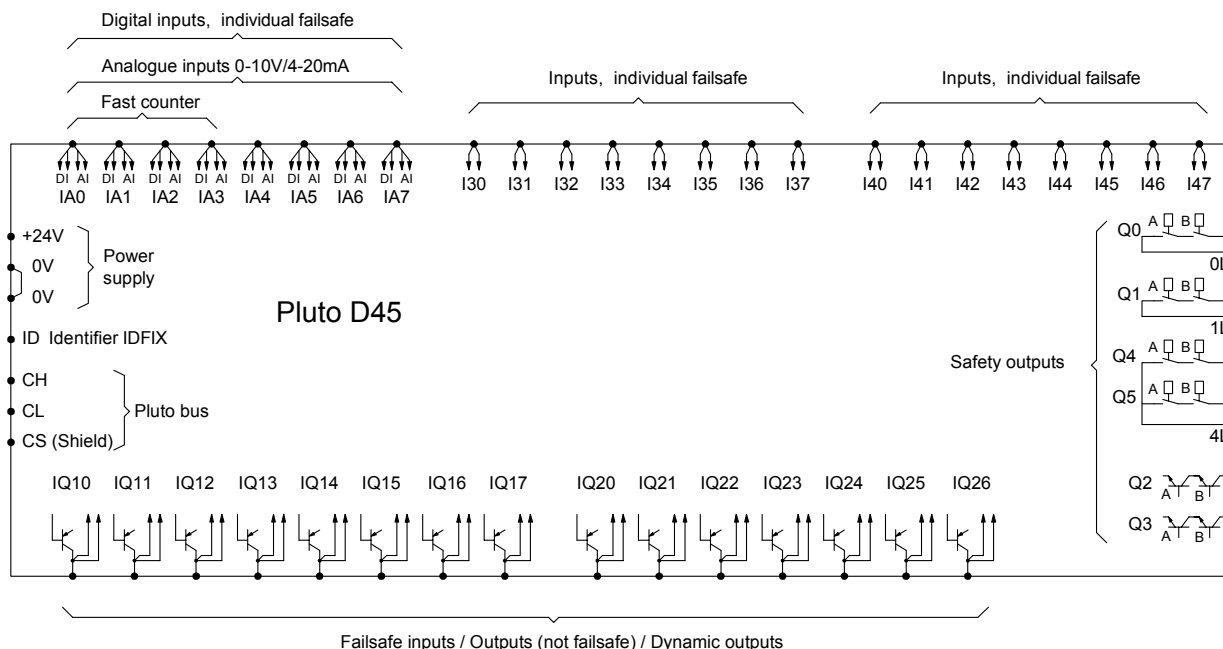
ABB JOKAB SAFETY has expanded the range of Pluto Safety PLC modules! The new unit, Pluto D45, is a 90mm wide module with 8 safe analog inputs 4 of which can also be high speed counter inputs. The I/O configuration is the same as for the Pluto B46, but with the added feature that 8 of the inputs can be used as either ordinary safe inputs or as safe analog inputs 0-10V or 4-20mA and 4 for counter inputs up to 14kHz.

The high speed counter feature allows Pluto to be used in applications where a “zero speed”, “over speed” or “safe speed” monitor is required for the Category 4/ SIL3 PLe protection of personal around hazardous machinery. The analog inputs allow Pluto to be used in application where proximity sensors, temperature sensors, pressure and flow sensor monitoring is required for the Category 4/SIL3 PLe protection of personal around hazardous machinery. For applications to reach SIL 3 PLe two sensors in parallel, with one analog/counter input and one function block each, must be used.

The key difference between Pluto Safety PLCs and conventional Safety PLCs is that while conventional controllers use a “supervisor-subordinate” methodology, the Pluto Safety PLC uses an “all-supervisor” concept. Since all Pluto’s are “supervisor” units, they can see each others’ inputs and outputs.

### Unparalleled value

- Flexible and modular units allow you to do much more with less
- Reduces wiring and panel space
- Pluto Manager software included with purchase and technical support available
- Simple and powerful programming interface and instruction set standard
- Easily applied to any industry
- Offers extremely fast response time – less than 55ms
- Eliminates the need for additional zero speed controllers for machines with inertia.



# Simplify the design of and changes to safety systems.

Pluto is an “all-supervisor” safety PLC concept that simplifies the design of safety systems and still achieves the highest level<sup>Ⓞ</sup> of safety. Since each Pluto is a “supervisor” unit and can see the other Plutos’ inputs and outputs, the concept enables simple communication, programming and changes to the safety system.

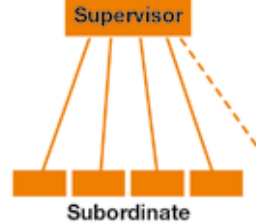
With the use of a “Gateway” device, a Pluto can communicate with other bus systems and thereby form part of a larger network. Gateway units are available for several different bus systems—i.e. Profibus, CANOpen, DeviceNet, Profinet, Ethernet/IP and Modbus TCP. With a Pluto AS-i both safety subordinates and standard subordinates can be handled.

Pluto offers a economic solution for both single machines and for major machine systems.

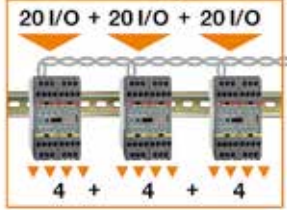
## ABB Jokab Safety Solution with All-Supervisor



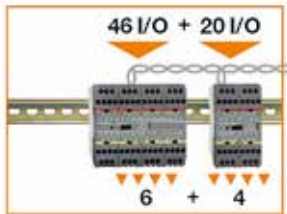
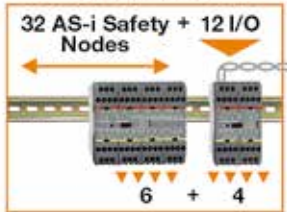
## Conventional Safety PLC



## Pluto All-Supervisor



## Pluto AS-i



## Supervise unlimited safety devices

Most safety devices on the market can be connected directly to Pluto units. by using dynamic signals with sensors from ABB JOKAB SAFETY, only one input is needed to achieve the highest level\* of safety, compared to two inputs for other manufacturers’ PLCs.

It is also possible to connect up to ten sensors in series to a single input on Pluto and still achieve the highest level<sup>Ⓞ</sup> of safety. For example, non-contact Eden sensors, safety guard mats and Tina emergency stop buttons can all be connected in series to a single Pluto input. Even mechanical switches can be connected to the “dynamic” safety circuit using Jokab’s various Tina adapters.

Pluto also has I/O connections that can be used as both inputs and outputs.



<sup>Ⓞ</sup> See web site for detailed list of third party approvals for standards and regulations.

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