# INDUSTRY4.0

**AUTOMATION    CONNECTION    CLOUD COMPUTING    IOT    BIG DATA    SYSTEM INTEGRATION**

## SatrindTech Srl – Industry 4.0

Dear Customer,

### Industry 4.0 Compliant Industrial Shredders

To benefit from the 250% hyper-amortisation, machines purchased by the 31st December (20% down-payment) and delivered by the 30th September 2018 must have 5+2 requisites, as well as fall under Appendixes A and B of the law. The shredders fall under Appendix A. For software relating to the goods the amortisation is 140%.
The legal representative must produce a declaration confirming these requisites. Above 500k Euro in goods value a technical audit must be provided by an engineer/auditor on the professional register or by an accredited certification organisation. The Italian Revenue Service verifies requisites (and fines). If the requisites are not met, amortisation is 140% not 250%.

### Requisites

The 5 requisites that must be respected are, in summary:

1. Machine controlled by PLC
2. IT interconnectivity with customer factory
3. Automated integration with factory logistics system (of customer)
4. Simple and intuitive Human/Machine Interface (HMI)
5. Compliance with safety in the workplace standards

As well as another 2 requisites (third omitted):

A. Remote maintenance and/or remote control system
B. Continuous monitoring of working conditions and process parameters

### Applications

The PLC and remote assistance partially respond to the requisites, not to all of them. There are however an indispensable starting point.

For the others:

2. For the interconnection with factory IT systems, the unit must exchange information with the management system, planning system, or design and development system, or product monitoring system. i.e., the PLC must access the customer's IT systems with an internationally recognised protocol (TCP/IP, HTTP) and be uniquely identified as a unique data source (IP address). Industry 4.0 ministerial guidelines do not explicitly mention the Profibus bus, which we sustain best suits the additional requisite A for remote control of the machine (e.g. DCS - *Distributed Control System*). Therefore, a network cable must connect the PLC directly to the customer network, defining what information is carried, what is done with it, and vice versa.

3. Integration with customer factory logistics may by physical (automated product handling in/out system) or informational (product tracking/lot tracking with automated tracking systems (RFID, barcodes); there are other possible options for data exchange with other machines of the production cycle in which the shredder is inserted. This aspect is to be defined with the customer from all points of view, unless an automated informational system is to be proposed "to record the advancement, position or other logistical information regarding shredded material subject to the production process".

4. The new touch-screen displays fitted to the latest PLC models are going in the direction of simple and intuitive interfaces.

5. It is given that the requisites regarding workplace safety are respected by our products, as per existing legislation.

A. Remote assistance, as well as remote connections via Profibus are going in this direction. Actually, it should be clarified if for Industry 4.0 remote assistance and remote diagnostics via Profibus (customer premises) are required, or remote assistance/diagnostics by the supplier. If so, the customer must generate a Profibus connection to a desktop that replicates the touch display of the control panel. If this must be part of the supply, an additional graphical interface must be included (SCADA software).

B. Regarding continuous monitoring of operating conditions and adaptability to process derivations it would be useful to go into more detail regarding the parameters to be recorded.

**Conclusions**

Requisites 2 and most of all 3 in particular, and additional requisite B should be explored further with the customer wishing to create an Industry 4.0 compliant installation.

Customers that control our PLC remotely via Profibus comply with additional requisite A, but not yet to requisites 2 and 3, which are a crucial for Industry 4.0:

- process data (which are not inversions and absorptions, but also productivity of treated material, treatment planning, energy consumption, cycle times, etc.)

- automatic handling management (automatic loading/unloading followed by automatic treatment by magazine or another machine) or information relating to factory logistics of the shredded and treated product (position in the treatment chain, position in factory)

Therefore, to complete and industrial shredder, even in fitted with PLC and assistance module, it CANNOT in itself respond to Industry 4.0 requisites, but can be prepared for them (compliance 4.0) in order to be part of a wider customer project.

**Bibliography**

Industry 4.0 guidelines dated 30 March 2017 by the Italian Revenue Service.

For any other request for free quotes of our industrial shredding solutions Industry 4.0 compliance, please contact our Sales Department by writing to sales@satrindtech.com or by calling the number +39 (02) 9037 6683.

## Our Sales Dept. is your disposal for any information.

### SatrindTech Srl