

Smart Data Transport and Control



Connecting and controlling of equipment and machines.

MATRANDA, manufacturer and supplier of machine control and data collection with data transport.
Trade mark 'Matranda'. All our offers and contracts are subject to our General Terms & Conditions of Supply.
Contact : Newtonlaan 115 , 3584 BH Utrecht , +31 (0)84 – 872 89 38 , info@matranda.com , www.matranda.com



Machine data processing and monitoring through the Matranda smart system

Matranda relieves the user by means of a smart system. The user is automatically kept informed by the smart system, and adjusts the system itself through an advanced control system. Equipment and machine parameters are linked together to improve operating conditions.

Some important tasks that can be performed by the smart system are:

- Identifying problems in production lines, machines, measuring equipment, and all processes.
- Predicting when maintenance is required, and predicting which part needs to be replaced.
- Machine Learning.
- Factory overview.
- Eliminating wasteful downtime.
- Reducing unexpected failures.
- Remote condition monitoring, by tracking machine, device parameters and KPIs (Key Performance Indicators).
- Monitoring and control of machines and equipment by the user.

The Matranda smart system offers the manufacturer to optimize compatible parts/devices. This means that periodic service can take place in the most efficient way as possible.

We are at the beginning of the 4th industrial revolution, in which the Matranda smart system will contribute. We deal with fast deliveries, reliable products, high quality standards and extremely competitive prices. The Matranda smart system offers the perfect solution to be able to perform all these disciplines properly.

The Matranda smart system manages, controls and visualizes your production process.
The system controls the machine and the production process, whereby the control can be performed by an employee.





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MTD - SERVER

Product code : MTD_SERVER



Specifications :

- *Dimensions to be determined*
- *Supply voltage 230V*
- *Power at least 65 Watt*
- *Data storage capacity 4 Tb*
- *Control Windows 11 IoT Enterprise 2021 LTSC High End (ESD)*
- *Switch at least with 5 ethernet ports*
- *Ambient temperature min 10°C max 45°C*
- *Storage data for 7 jears*
- *Protection class IP20*
- Data processing and to link for other applications such as PowerBI
- Matranda standard software, including expension of the extra software

* Price €15.619,-

Extra Software packages:

• *SVS fault indication system*	€3.570,-
• *Predictive maintenance*	€6.230,-
• *Machine Learning*	€8.650,-
• *Historian*	€1.235,-

The MTD_Server can be linked to PowerBI and other applications available within an organization. If required, Matranda can also take care of the dashboarding of PowerBI.

Matranda Extra Update Service (MUS) applies to:

1) Matranda Update Service for Historian and Factory Overview	*€1.250,- / year*
1) Matranda Update Service for SVS + Predictive Maintenance	*€1.750,- / year*
2) Matranda Update Service for SVS + Predictive Maintenance + Machine Learning	*€2.100,- / year*

MTD – CONTROL MODULE



Product code : MTD_CONTROL_MODULE

Specifications :

- *Dimensions to be determined*
- *Supply voltage 230V*
- *Power at least 65 Watt*
- *Storage capacity 512Gb*
- *Control Windows 11 IoT Enterprise 2021 LTSC High End (ESD)*
- *Switch at least with 5 ethernet ports*
- *Ambient temperature min 10°C max 45°C*
- *Real Time Data storage for 3 days*
- *Module for data transport*
- *Protection class IP20*
- *Matranda standaard software to link for MTD Fat Clients and MTD server*

* Price €4.502,-

The MTD_Control Module is directly connected to the MTD_Server and possibly to other MTD_Control Modules in the organization. It is not necessary to place the MTD_Control Modules in the same subnet, they can even be in a different location. Even in a foreign country. And all Control Modules can independently send data to the MTD_Server.

Machine link / MTD Fat Client link / MTD Control Module link : €275,- / link

*To guarantee data security, a private network has been chosen to send the encrypted data. The network is therefore a wired network conform the **ISA95** model, equipped with RJ45 connectors (Ethernet).*

*** Prices are excluded VAT and valid until 31 December 2026**

MTD Master / Slave Module



The MTD_Masters and the MTD_Slaves can be expanded even further than indicated in this leaflet.
An additional quotation should then be requested from Matranda.

This makes it possible to build a customer-specific MTD_Master and/or a customer-specific MTD_Slave.

All components used in our modules are suitable for industrial environments.

An MTD_Master usually occurs only once in one (factory) location. And are then expanded with MTD_Slave Modules.

Each MTD_Master has 2 different subnets, because the MTD_Master is in the Production network and in the Machine network.
An MTD_Slave Module has 1 subnet, and is connected to the Machine network.

MTD Slave Module	MTD_S 08D04R00D00A00A	MTD_S 04D04R00D02A00A	MTD_S 08D04R00D02A00A	MTD_S 04D04R00D04A00A	MTD_S 08D04R00D00A02P	MTD_S 04D04R00D02A02P
Digital galvanic parted inputs	8	4	8	4	8	4
Relais outputs	4	4	4	4	4	4
Digital outputs	X	X	X	X	X	X
Analog inputs 4-20mA	X	2	2	4	X	2
Analog outputs 4-20mA	X	X	X	X	X	X
PT100/ PT1000 inputs	X	X	X	X	2	2
Dimensions BxDxH	400x210x 500	400x210x 500	400x210x 500	400x210x 500	400x210x 500	400x210x 500
Supply voltage	230Vac	230Vac	230Vac	230Vac	230Vac	230Vac
P-Nom	15W	15W	15W	15W	15W	15W
Ethernet ports	4	4	4	4	4	4
Ambient temperature	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C
Protection class	IP66	IP66	IP66	IP66	IP66	IP66
Gland pass- through	Yes	Yes	Yes	Yes	Yes	Yes
Router	No	No	No	No	No	No
Price	€2.547,-	€2.547,-	€2.764,-	€2.764,-	€2.622,-	€2.622,-

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Machine data transport, -control, -monitoring, -collect, -surveillance.

MTD Slave Module	MTD_S 08D04R00D02A02A	MTD_S 04D04R00D04A02A	MTD_S 12D08R00D00A00A	MTD_S 08D08R00D02A00A	MTD_S 12D04R04D00A00A	MTD_S 08D04R04D02A00A
Digital galvanic parted inputs	8	4	12	8	12	8
Relais outputs	4	4	8	8	4	4
Digital outputs	X	X	X	X	4	4
Analog inputs 4-20mA	2	4	X	2	X	2
Analog outputs 4-20mA	2	2	X	X	X	X
PT100/ PT1000 inputs	X	X	X	X	X	X
Dimensions BxDxH	500x210x 500	500x210x 500	500x210x 500	500x210x 500	500x210x 500	500x210x 500
Supply voltage	230Vac	230Vac	230Vac	230Vac	230Vac	230Vac
P-Nom	15W	15W	15W	15W	15W	15W
Ethernet ports	4	4	4	4	4	4
Ambient temperature	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C
Protection class	IP66	IP66	IP66	IP66	IP66	IP66
Gland pass- through	Yes	Yes	Yes	Yes	Yes	Yes
Router	No	No	No	No	No	No
Price	€3.285,-	€3.285,-	€2.984,-	€2.984,-	€3.239,-	€3.239,-

MTD Master Module	MTD_M 08D04R00D00A00A	MTD_M 04D04R00D02A00A	MTD_M 08D04R00D02A00A	MTD_M 04D04R00D04A00A	MTD_M 08D04R00D00A02P	MTD_M 04D04R00D02A02P
Digital galvanic parted inputs	8	4	8	4	8	4
Relais outputs	4	4	4	4	4	4
Digital outputs	X	X	X	X	X	X
Analog inputs 4-20mA	X	2	2	4	X	2
Analog outputs 4-20mA	X	X	X	X	X	X
PT100/ PT1000 inputs	X	X	X	X	2	2
Dimensions BxDxH	400x210x 500	400x210x 500	400x210x 500	400x210x 500	400x210x 500	400x210x 500
Supply voltage	230Vac	230Vac	230Vac	230Vac	230Vac	230Vac
P-Nom	15W	15W	15W	15W	15W	15W
Ethernet ports	4	4	4	4	4	4
Ambient temperature	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C
Protection class	IP66	IP66	IP66	IP66	IP66	IP66
Gland pass- through	Yes	Yes	Yes	Yes	Yes	Yes
Router	Yes	Yes	Yes	Yes	Yes	Yes
Price	€3.497,-	€3.497,-	€3.714,-	€3.714,-	€3.572,-	€3.572,-

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Machine data transport, -control, -monitoring, -collect, -surveillance.

MTD Master Module	MTD_M 08D04R00D02A02A	MTD_M 04D04R00D04A02A	MTD_M 12D08R00D00A00A	MTD_M 08D08R00D02A00A	MTD_M 12D04R04D00A00A	MTD_M 08D04R04D02A00A
Digital galvanic parted inputs	8	4	12	8	12	8
Relais outputs	4	4	8	8	4	4
Digital outputs	X	X	X	X	4	4
Analog inputs 4-20mA	2	4	X	2	X	2
Analog outputs 4-20mA	2	2	X	X	X	X
PT100/ PT1000 inputs	X	X	X	X	X	X
Dimensions BxDxH	500x210x 500	500x210x 500	500x210x 500	500x210x 500	500x210x 500	500x210x 500
Supply voltage	230Vac	230Vac	230Vac	230Vac	230Vac	230Vac
P-Nom	15W	15W	15W	15W	15W	15W
Ethernet ports	4	4	4	4	4	4
Ambient temperature	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C	-10°C to 55°C
Protection class	IP66	IP66	IP66	IP66	IP66	IP66
Gland pass- through	Yes	Yes	Yes	Yes	Yes	Yes
Router	Yes	Yes	Yes	Yes	Yes	Yes
Price	€4.235,-	€4.235,-	€3.934,-	€3.934,-	€4.189,-	€4.189,-

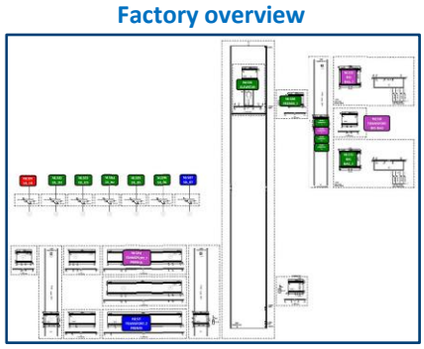


The Thick/Fat Client is directly connected to the MTD Control Module through the same subnet "Production Network".

The MTD Fat Clients are equipped with all Matranda software for the connections with the MTD Control Module and the MTD Server.

MTD_Clients	MTD_FAT CLIENT	MTD_THIN CLIENT	MTD_ FAT CLIENT ALL IN
Led Screen	22 "	21,5 "	23,8 "
Power supply	2x 230Vac	2x 230Vac	1x 230Vac
Max. ambient temperature	+45°C	+45°C	+45°C
Min. ambient temperature	-10 °C	-10 °C	-10 °C
Protection class	IP20	IP20	IP20
Optical mouse, with cable	Optical	Optical	Optical
Querty keyboard, cabled	Querty	Querty	Querty
Operating System	Windows 11 IoT Enterprise 2021	Thin OS4 Core	Windows 11 IoT Enterprise 2021
Cables	HDMI Cable	HDMI Cable	X
Price	€ 1.629,-	€ 814,08	€ 1.503,-

Factory overview



The factory overview software is programmed in the MTD Fat Client. The status of a machine is visible. Which allows immediate intervention. The status of machines/equipment is visualised with a push button. Each colour has a meaning. As soon as the button is pressed, an extra screen will be shown where any malfunction is located, with all documents visualised.

The software is linked to the SVS of the MTD Server. But it can also be further extended for an OEE application, for example.

The price for the factory overview software in a Fat Client :
- *Template factory overview: €1.235,-*
- *Linking of machines : €350,- / machine*

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The MTD Load indicator, is directly linked to the MTD Master- / Slave Module. With this indicator the load of a device / machine is read out and sent to the MTD Control Module.

MTD Load indicator	MTD_ PWR0050161000	MTD_ PWR0050251000	MTD_ PWR0100161000	MTD_ PWR0100321000	MTD_ PWR0100631000
Control range (Ampère)	0A – 5A	0A – 5A	0,5A – 10A	0,5A – 10A	0,5A – 10A
Max. Current (Ampère)	16A	25A	16A	32A	63A
Pulse count per Ah	0 - 1.000	0 - 1.000	0 - 1.000	0 - 1.000	0 - 1.000
Mains voltage	230Vac	230Vac	400Vac	400Vac	400Vac
Number of poles connector	2P + Earth	2P + Earth	4P + Earth	4P + Earth	4P + Earth
Ethernet	No	No	No	No	No
Protection class casing	IP65	IP65	IP65	IP65	IP65
Measurements casing	200x123x112	200x123x112	200x267x112	200x267x112	200x267x112
Performance	Gland pass - through	Gland pass - through	Gland pass - through	Gland pass - through	Gland pass - through
Price	€ 277,-	€ 297,-	€ 525,-	€ 657,-	€ 822,-

The MTD Load indicator has a plug connection which can be plugged into the power supply (230Vac / 400Vac) of a device and/or machine.



The MTD Card Reader, is used to indicate the status of a machine, when it cannot be generated by the machine itself.The MTD Card reader is connected directly to an MTD_Fat Client.

MTD Card Reader	MTD_ CRE000USB	MTD_ CRE010USB	MTD_ CRE020USB	MTD_ CRE030USB	MTD_ CRE050USB
Power supply	TTL	TTL	TTL	TTL	TTL
Network cable / 2x USB transition	-	10 mtr	20 mtr	30 mtr	50 mtr
USB connection	Ja	Ja	Ja	Ja	Ja
Number of Smart Cards	5	5	5	5	5
Ethernet TCP/IP (included 230Vac adapter)	No	No	No	No	No
Protection class	IP20	IP20	IP20	IP20	IP20
Extra Holder Smart Card	Yes	Yes	Yes	Yes	Yes
* Prijs	€ 170,-	€ 201,-	€ 214,-	€ 228,-	€ 255,-

The Smart Card is classified by the customer. The most common machine status : -Machine Switching, -Machine in Maintenance, -Machine in Production, -No Operator Present, -No Products Present.



Additional extension with power meter :

- *Power meter*
- *Modbus/TCP to Ethernet/IP*
- *3x Power measurement transformers*
- *1x Circuit breaker 3 phase*
- *1x Circuit breaker 1 phase*
- *Power meter built into the module door*
- *Suitable up to 1,000Amp / phase*

Price on top of Slave- or Master Module : € 3.5907,-



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MATRANDA

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What is meant by basic software and user software?

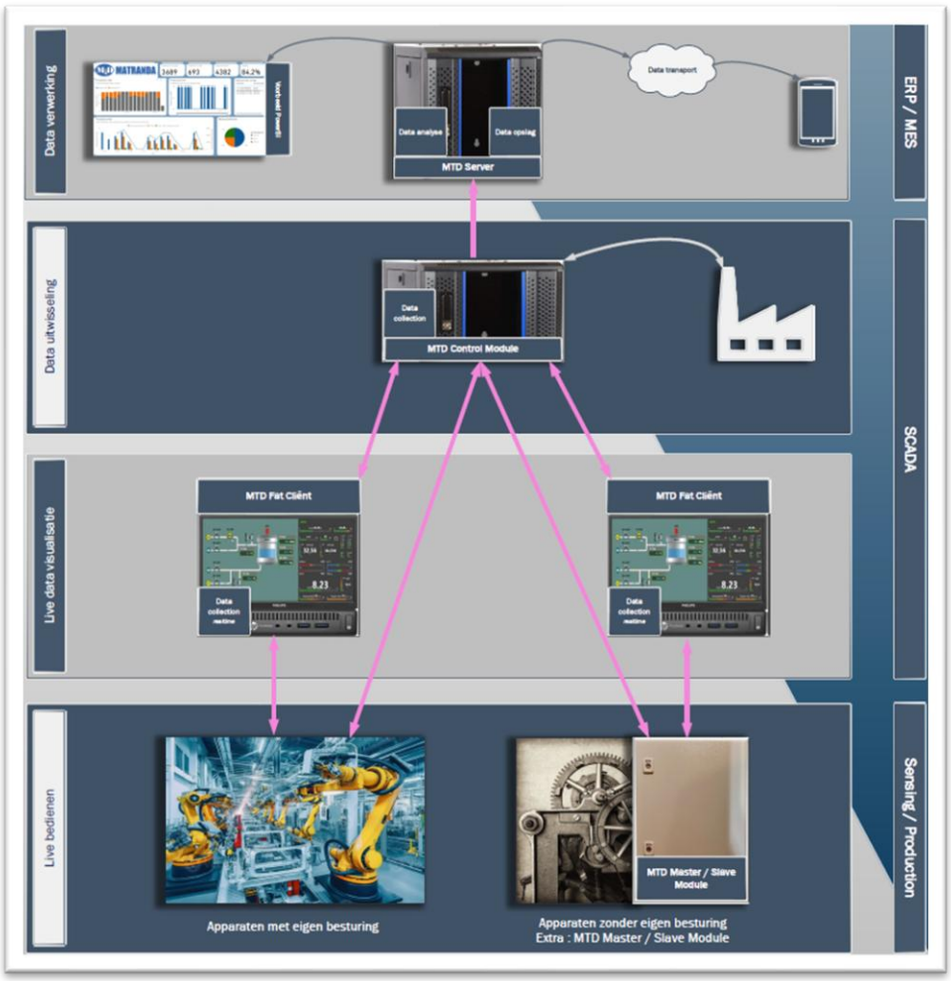
Basic software is software which standard is programmed in all PLCs of the *Master and Slave modules.* The *basic software* is also included in the PCs of the Server and Control module. An example of the *basic software* is **Windows 10 IoT Enterprise 2021 LTSC High End.**
User software is software which is compiled together with the user and programmed by **Matranda**. These programs are controlled by the *Basic software*. For example, a sensor and a lamp are connected to the *Master/Slave module*. Software is required to be able to read this sensor and to control the lamp with it.
This software is called *User software*.

The most detailed composition of a **Matranda Smart System** is shown schematically below.

This configuration consists of:

- *MTD Control Module*
- *MTD Master Module (1x)*
- *Screen, mouse and keyboard*
- *Thin Clients (optional)*
- *Fat Clients*
- *MTD Server*
- *MTD Slaves Modules (max 15 modules)*
- *Another location*

The MTD Control Modules are all interconnected, even if they are in a different location. This location can also be in another country, around the world.
This is what makes the **Matranda system** so unique.
The data that is sent to other locations is also encrypted data. As a result, we completely rule out corporate espionage. The MTD Servers are installed in each location. With this system it is therefore possible that devices and machines at one location, and other machines and devices at another location, can be controlled.



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