

RemDataLogger

User manual

Version 1.2

Introduction

RemDataLogger is the solution for sampling production data developed by REM Software & Automation.

RemDataLogger is made of two applications:

1. **RemDataLogger.exe**: it is the application that takes care of the connection to the CNC (or PLC) of the machine and detects the production information by saving it on a local database. The local database is used to avoid losing data if the definitive database is not accessible due to problems on the network.
2. **RemIndustryService**: it is a windows service that takes care of transferring the sampled information from the local database to the final database.

System requirements for installation

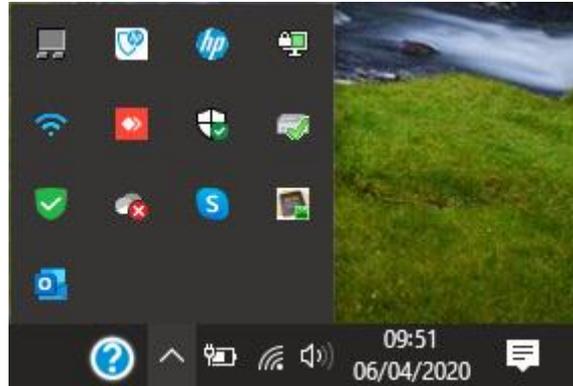
RemDataLogger needs to be installed on a PC with the following system requirements:

- OS Windows 7 professional 64 bit or more recent
- 1 or 2 ethernet ports depending on the selected configuration:
 - 1 ethernet port for the connection to CNC
 - 1 ethernet port for the connection to PC where the data saving database is placed: in case the database is on the same PC where the datalogger is installed, the second port is useless
- 10 GB of available memory on the disk
- Screen resolution minimum 1024x768

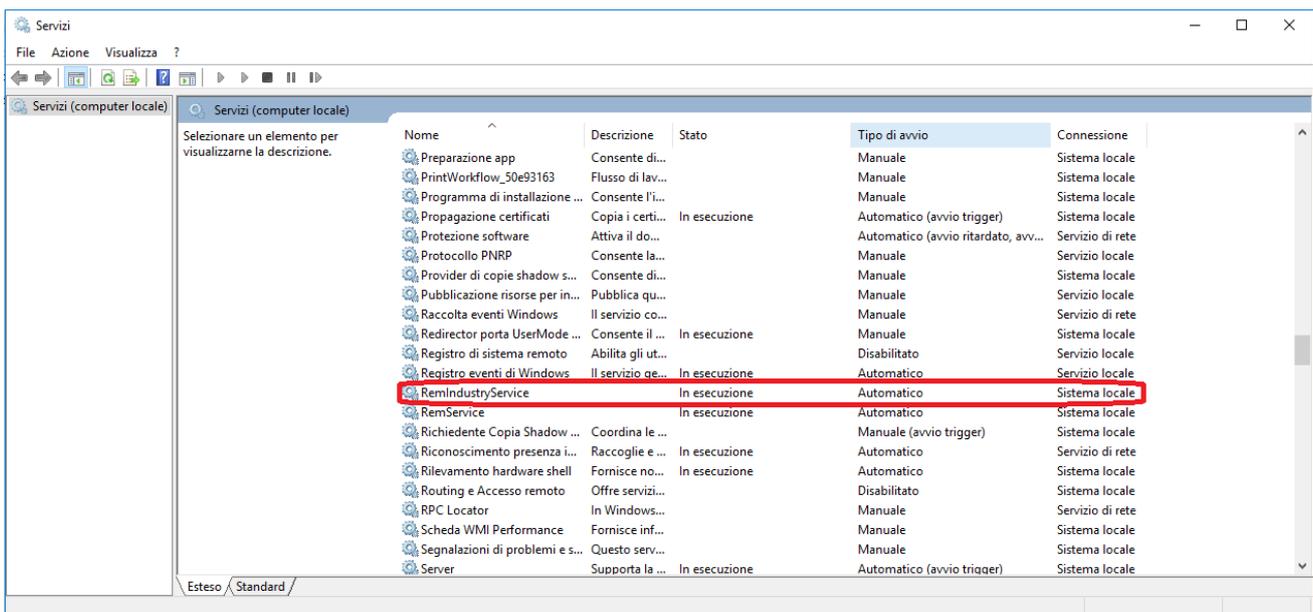
Conditions of use

RemDataLogger must be active all the time when the data are sampled, therefore it is suggested to create a link of the executable file in the automatic execution folder so the RemDataLogger starts every time the PC is on.

RemDataLogger starts showing the interface that allows the user to verify if the connections are correctly active. Once minimized, the icon is visible in the system tray:

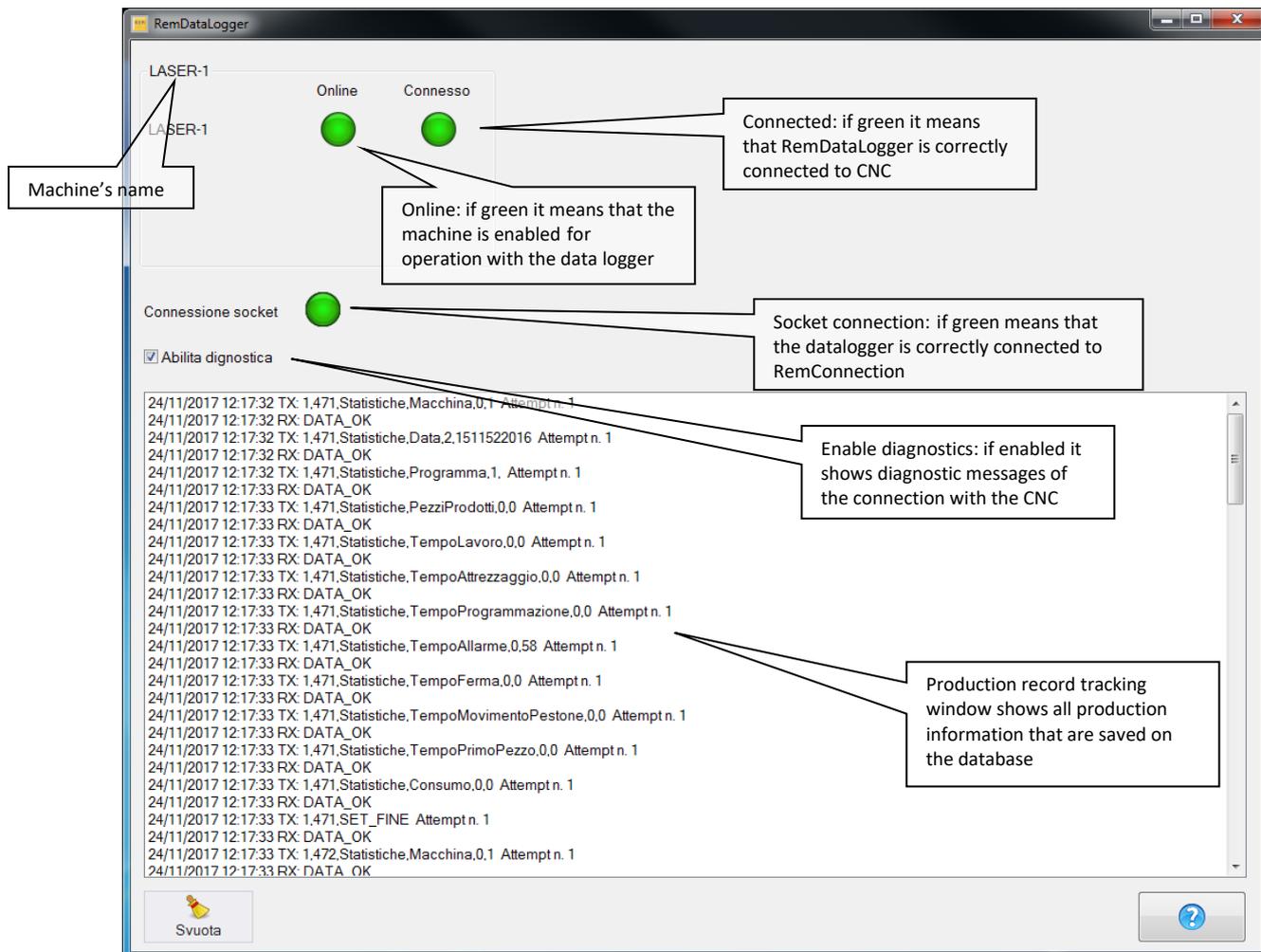


RemIndustryService is a service that must be running all the time. If for some reason it stops, it is necessary to restart it by using the Windows "Services" interface and search it with its name:



Interface

When RemDataLogger is launched shows the following interface that consists in a single diagnostic page:

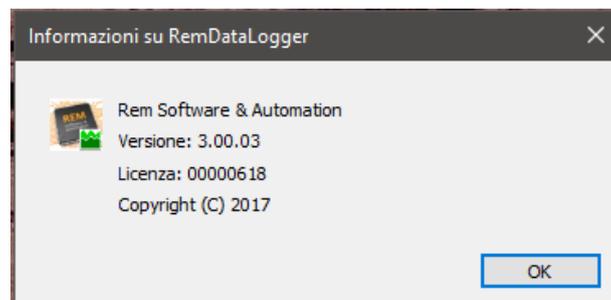


Functionality of the buttons:

Button  : it deletes every line in the record tracking window

Button  : it closes RemDataLogger application

Button  : it shows the information windows with the version and license of the application:



Example of information generated by RemDataLogger

The DataLogger generates different types of production records:

- **Monitor:** it contains the instant information about what the machine is producing (current state, running program, etc.)
- **Eventi:** it indicates the period of time that an alarm or a machine status, or rather an ON / OFF type information, has been in the ON state. Thanks to this information, the user knows how long an event has been present or absent.
- **Statistiche:** it is linked to the production cycle so it may change depending on the type of the machine. The record is generated cyclically and, if communication with the CNC is active, the cycle usually lasts one minute. For each sampling it generates a record that contains all the information linked to the time interval. For example, it indicates how many pieces were produced in the previous minute or how long the machine was in each expected machine state (production, alarm, etc.) during the previous minute.
- **Produzione:** it is linked to the production cycle so it may change depending on the type of the machine. It gathers in a single record all the information related the same production cycle: it identifies, according to the selected program, how many pieces were produced during the execution of the program, at what time did the production - linked to the selected program - started and ended, at what time did the machine tooling started.

In the database there are a series of tables that contain the admissible values for some of the record fields; for example, the following values are present in the *Stato* table:

ID	Nome	Aggiungi nuovo campo
1	Manuale	
2	Semiautomatico	
3	Automatico	
4	Editor	

The *Stato* field in the *Eventi* table can be evaluated only with one of the values in the table here below. It works in the same way as the *Device* field that is present in all the tables and it is valorized only with one of the possible devices presents in the table:

ID	Nome	Aggiungi nuovo campo
1	CNC PRESSA 1	
2	CNC PRESSA 2	
3	LASER 1	
*	Nuovo	

NOTE: the tables are customizable and can be modified according to customer needs.

Eventi table

The *Eventi* table is structured as follows:

ID	Codice	Nome	Categoria	DataInizio	DataFine	Utente	Commessa	Lotto	Fase	Programma	Stato	Device	Macchina
(Nuovo)				0 19/09/2018 09:14:17	19/09/2018 09:14:17		0			0		0	0

Field Name	Description
ID	Progressive identification of the event
Codice	Code of the variable associated with the event (for example: %PLCerr0.0)
Nome	Description of the event (for example General Emergency)
DataInizio	Date and time when the event activated
DataFine	Date and time when the event deactivated
Utente	Identification of the operator who is working during the event (it must be enabled)
Commessa	Current job order processed during the event (it must be enabled)
Lotto	Current batch processed during the event (it must be enabled)
Fase	Identification of the phase in progress during the event (it must be enabled)
Programma	Program active during the event
Stato	Status active during the event
Device	Device that generated the event (for example BENDING 1 or CNC1)
Macchina	Indicates the identification of the machine to which the device belongs

Statistiche Table

The *Statistiche* table is structured as follows:

ID	Macchina	Data	Utente	Commessa	Lotto	Fase	Programma	PezziProdotti	NPieghe	TempoLavoro	TempoAttrezzaggio	TempoProgrammazione	TempoAllarme	TempoFerma	TempoMovimentoPestone	TempoPrimoPezzo	Consumo	PausaPranzo	
(Nuovo)		0 19/09/2018 09:14:40		0				0	0	0	0	0	0	0	0	0	0	0	0

Field Name	Description
ID	Progressive identification of the event
Macchina	Machine number
Data	Date and time of the statistics (minute by minute)
Utente	Identification of the operator who is working (it must be enabled)
Commessa	Order in progress (it must be enabled)
Lotto	Batch in progress (it must be enabled)
Fase	Identifier of the phase in progress (it must be enabled)
Programma	Program in progress
PezziProdotti	Number of pieces produced in the time interval
NPieghe	Number of folds in the time interval
TempoLavoro	Indicates in a period of time for how many seconds the machine has been in production
TempoAttrezzaggio	Indicates in a period of time for how many seconds the machine has been tooled up (manual)
TempoProgrammazione	Indicates in a period of time for how many seconds the machine has been in programming
TempoAllarme	Indicates in a period of time for how many seconds the machine has been producing in alarm
TempoFerma	Indicates in a period of time for how many seconds the machine has been stopped in idle state (automatic with stationary axes)
TempoMovimentoPestone	Indicates in a period of time for how many seconds the beam has moved
TempoPrimoPezzo	Indicate in a period of time for how many seconds the machine has been in semiautomatic (sample piece)
Consumo	Instant consumption (it must be enabled)
PausaPranzo	Indicates in a period of time if the operator is in lunch break (it must be enabled)

Produzione Table

The *Produzione* table is structured as follows:

ID	Utente	Commessa	Lotto	Fase	Programma	Orainizio	OraProgrammazione	OraAttrezzaggio	OraPrimoPezzo	OraProduzione	OraFine	PezziDafare	PezziProdotti	NPieghe	Macchina
* Nuovo	0			0		19/09/2018 09:29:08	19/09/2018 09:29:08	19/09/2018 09:29:08	19/09/2018 09:29:08	19/09/2018 09:29:08	19/09/2018 09:29:08	0	0	0	0

Field Name	Description
ID	progressive identification of the event
Utente	Identification of the operator who is working (it must be enabled)
Commessa	Current job order (must be enabled)
Lotto	Current batch in production (it must be enabled)
Fase	Identifier of the current phase (it must be enabled)
Programma	Active program during the production cycle
Orainizio	Date and time when the program has been loaded
OraProgrammazione	Date and time when the programming of the piece started (editor state)
OraAttrezzaggio	Date and time when the tooling started (manual state)
OraPrimoPezzo	Date and time when the verification of the sample piece started (semi-automatic state)
OraProduzione	Date and time when the automatic process started
OraFine	Date and time when the program finished running automatically
PezziDafare	Number of pieces to produce
PezziProdotti	Number of pieces produced between Orainizio and OraFine
NPieghe	Number of folds between Orainizio and OraFine
Macchina	Machine number