



www.mobics.nl

Mobics B.V.
Lauwersmeer 11b
5347 JR Oss
The Netherlands
T +31 (0)412 69 12 90
F +31 (0)412 69 12 92

Parameters and alarms

Railsystem V0400

Table of contents

Table of contents	2
1) Machineparameters.....	3
1.1) Overview machine parameters	3
1.2) Machine parameters details.....	5
2) Program parameters	9
2.1) Overview program parameters	9
2.2) Program parameter details	9
3) Alarms	10

1) Machineparameters

1.1) Overview machine parameters

- 01 Sorting method
- 02 Use code of button of first clamp
- 03 Time-out proximity switch sorting chain
- 04 Standby time sorting chain
- 05 Batch separation system active
- 06 Batch separation system with PC online
- 07 Reserved
- 08 Reserved
- 09 Reserved
- 10 Reserved
- 11 Delay switch between full clamp lanes
- 12 Delay switch between empty clamp lanes
- 13 Delay switch between empty clamp rails
- 14 Reserved
- 15 Reserved
- 16 Debounce time clamp in full clamp gate
- 17 Debounce time clamp in empty clamp gate
- 18 Debounce time clamp in chain gate
- 19 Reserved
- 20 Reserved
- 21 Time full clamp gate activated
- 22 Time empty clamp gate activated
- 23 Time chain gate activated
- 24 Reserved
- 25 Reserved
- 26 Debounce time full clamp lane full
- 27 Debounce time empty clamp lane full
- 28 Debounce time chain gate full
- 29 Reserved
- 30 Reserved
- 31 Time release arms station activated
- 32 station height
- 33 Reserved
- 34 Reserved
- 35 Reserved
- 36 Position lane changer first lane
- 37 Moment lane changer to lane 1
- 38 Moment lane changer to lane 2
- 39 Moment lane changer to lane 3
- 40 Reserved
- 41 Minimum to process from active lane
- 42 Drying time not active lane
- 43 Time gate empty short empty detection
- 44 Time gate empty for long empty detection
- 45 Nr of pairs lane full points stay active
- 46 Reserved
- 47 Reserved
- 48 Reserved
- 49 Reserved
- 50 Reserved
- 51 CAN-bus stationnumber this PLC
- 52 CAN-bus baudrate
- 53 Delay return to home screen

54 Counter to display in overview screen
55 Reset counters without password
56 Program when unknown customer/article
57 Reserved
58 Reserved
59 Reserved
60 Reserved
61 Reserved
62 Reserved
63 Reserved
64 Reserved
65 Reserved
66 Delay start gate station 1
67 Position gate in chain station 1
68 Empty clamp lane outputs station 1
69 Reserved
70 Reserved
71 Reserved
72 Reserved
73 Reserved
74 Reserved
75 Reserved
76 Delay start gate station 2
77 Position gate in chain station 2
78 Empty clamp lane outputs station 2
79 Reserved
80 Reserved
81 Reserved
82 Reserved
83 Reserved
83 Reserved
85 Reserved
86 Delay start gate station 3
87 Position gate in chain station 3
88 Empty clamp lane outputs station 3
89 Reserved
90 Reserved
91 Reserved
92 Reserved
93 Reserved
94 Reserved
95 Reserved
96 Delay start gate station 4
97 Position gate in chain station 4
98 Empty clamp lane outputs station 4
99 Reserved
100 Reserved

1.2) Machine parameters details

01 Sorting method

0 = Lane choice with buttons
1..4 = All clamps to lane 1..4
5 = Use all lanes together

02 Use code of button of first clamp

If value is 1, the lane is chosen according to the button used on the 1st clamp. Otherwise the button pushed on the 2nd clamp is used.

03 Time-out proximity switch sorting chain

If the sorting chain is running, the proximity switch must have 2 pulses between this time, otherwise a time-out warning will be displayed. Time is in steps of 10ms.

04 Standby time sorting chain

If the sorting chain isn't used for this time, the chain will stop. Restart will be done automatically. Value 0 means don't use standby function. Value is in seconds.

05 Batch separation system active

This parameter indicates if the batch separation system is active (value 1) or not active (value 0).

06 Batch separation system with PC online

This parameter indicates if there is a PC connected to the PLC which handles the customer and article database. Value 1 is that a PC with database is online, with value 0, the database can be edited on the PLC.

11 Delay switch between full clamp lanes

If another full clamp lane will be chosen to send clamps to the feeder, all gates are blocked for this time to prevent collision of clamps. Time is in 10ms steps.

12 Delay switch between empty clamp lanes

If another empty clamp lane is chosen to send clamps to the stations, the gate is blocked for this time to prevent collision of clamps. Time is in 10ms steps.

13 Delay switch between empty clamp rails

If another empty clamp rail is chosen, both rails will be closed for this time. It's also the waiting time until clamps should be in the empty clamp gate. Time is in 10ms steps.

16 Debounce time clamp in full clamp gate

A sensor in a full clamp gate has to be covered for this time before the gate is allowed to start. Time is in steps of 10ms.

17 Debounce time clamp in empty clamp gate

A sensor in an empty clamp gate has to be covered for this time before the gate is allowed to start. Time is in steps of 10ms.

18 Debounce time clamp in chain gate

A sensor in an chain gate behind a station has to be covered for this time before the gate is allowed to start. Time is in steps of 10ms.

21 Time full clamp gate activated

A pneumatic full clamp gate will be activated for this time to push out the clamps. This is the time the cylinder is activated in steps of 10ms.

22 Time empty clamp gate activated

A pneumatic empty clamp gate will be activated for this time to push out the clamps. This is the time the cylinder is activated in steps of 10ms.

23 Time chain gate activated

A chain gate behind a station will be activated for this time to push out the clamps. This is the time the cylinder is activated in steps of 10ms. Value 0 means active until next catch seen.

26 Debounce time full clamp lane full

The time the sensor full clamp lane full must be (un)covered to (re)set the lane full flag. Time is in steps of 10ms.

27 Debounce time empty clamp lane full

The time a sensor empty clamp lane (half)full must be (un)covered to (re)set the lane full flag. Time is in steps of 10ms.

28 Debounce time chain gate full

The time a sensor in the buffer behind a station must be (un)covered to (re)set the lane full flag. Time is in steps of 10ms.

31 Time release arms station activated

The time the release arms of a station are opened to open the clamps when the release button is pushed. Time is in steps of 10ms.

32 station height

The distance a motor of a station runs to transport the 2nd clamp out of the station. Is almost the same as the height of the station in steps of chain parts.

36 Position lane changer first lane

The position in the chain where the lane changer for sending the clamps to lane 1 is. Is in steps of chain parts.

37 Moment lane changer to lane 1

The delay between a rising edge of the proximity switch of the sorting chain and the moment the lane changer of lane 1 is activated. Time is in steps of 10ms.

38 Moment lane changer to lane 2

The delay between a rising edge of the proximity switch of the sorting chain and the moment the lane changer of lane 2 is activated. Time is in steps of 10ms.

39 Moment lane changer to lane 3

The delay between a rising edge of the proximity switch of the sorting chain and the moment the lane changer of lane 4 is activated. Time is in steps of 10ms.

41 Minimum to process from active lane

For automatic calling of clamps to the feeder, this is the number of clamp pairs a chosen lane stays active. If a lane isn't active for this number of pairs, it will receive an extra point.

42 Drying time not active lane

For automatic calling of clamps to the feeder, this is the drying time of the pieces. If a lane has not been active for this time, it will receive an extra point. Value is in seconds.

43 Time gate empty short empty detection

For automatic calling of clamps to the feeder, this is the time a gate has to be empty until no points for lane not empty are added. Time is in 100ms steps.

44 Time gate empty for long empty detection

For automatic calling of clamps to the feeder, this is the time a gate has to be empty until the points are decreased because the lane is empty too long. Time is in seconds.

45 Nr of pairs lane full points stay active

For automatic calling of clamps to the feeder, a lane gets extra points when a lane gets full. These extra points will stay until this number of pairs is taken out of this lane.

51 CAN-bus stationnumber this PLC

Stationnumber of this PLC. Every PLC in a CAN network has to have a unique stationnumber.

52 CAN-bus baudrate

Baudrate/communicationspeed of this PLC. Every PLC in a CAN network has to be adjusted to the same baudrate.

53 Delay return to home screen

When the main screen is not activated, and the screen isn't used for this time, the main screen will be activated again. Steps of seconds (0=disabled).

54 Counter to display in overview screen

The counter per station in the main screen:

0 = Program counter

1 = Total counter

2 = Counter of today

3 = Current average per hour

55 Reset counters without password

When this parameter has a value of 1, counters per program can be reset without the need of a password.

56 Program when unknown customer/article

In case a batch separation system is present, and no valid customer and/or article has been chosen on the panel, this is the feeding station program which is used when a button is pushed.

66 Delay start gate station 1

The delay between a rising edge of the proximity switch on the sorting chain and the moment the chain gate of the station starts. Time is in steps of 10ms.

67 Position gate in chain station 1

The position of the chain gate of the station. Is used for correct sorting. Position is in sorting chain parts.

68 Empty clamp lane outputs station 1

This value gives the output value for the empty lane switches when this station needs to receive clamps:

0 = No output on

1 = Output 1 on

2 = Output 2 on

3 = Output 1 and 2 on

76 Delay start gate station 2

The delay between a rising edge of the proximity switch on the sorting chain and the moment the chain gate of the station starts. Time is in steps of 10ms.

77 Position gate in chain station 2

The position of the chain gate of the station. Is used for correct sorting. Position is in sorting chain parts.

78 Empty clamp lane outputs station 2

This value gives the output value for the empty lane switches when this station needs to receive clamps:

0 = No output on

1 = Output 1 on

2 = Output 2 on

3 = Output 1 and 2 on

86 Delay start gate station 3

The delay between a rising edge of the proximity switch on the sorting chain and the moment the chain gate of the station starts. Time is in steps of 10ms.

87 Position gate in chain station 3

The position of the chain gate of the station. Is used for correct sorting. Position is in sorting chain parts.

88 Empty clamp lane outputs station 3

This value gives the output value for the empty lane switches when this station needs to receive clamps:

0 = No output on

1 = Output 1 on

2 = Output 2 on

3 = Output 1 and 2 on

96 Delay start gate station 4

The delay between a rising edge of the proximity switch on the sorting chain and the moment the chain gate of the station starts. Time is in steps of 10ms.

97 Position gate in chain station 4

The position of the chain gate of the station. Is used for correct sorting. Position is in sorting chain parts.

98 Empty clamp lane outputs station 4

This value gives the output value for the empty lane switches when this station needs to receive clamps:

0 = No output on

1 = Output 1 on

2 = Output 2 on

3 = Output 1 and 2 on

2) Program parameters

2.1) *Overview program parameters*

01 Transport height button 1
02 Transport height button 2
03 Transport height button 3
04 Transport height button 4
05 Reserved
06 Reserved
07 Reserved
08 Reserved
09 Reserved
10 Reserved
11 Reserved
12 Reserved
13 Reserved
14 Reserved
15 Reserved
16 Reserved
17 Reserved
18 Reserved
19 Reserved
20 Reserved
21 Reserved
22 Reserved
23 Reserved
24 Reserved
25 Reserved

2.2) *Program parameter details*

01 Transport height button 1

The transport distance of the 1st clamp when startbutton 1 is pushed. Distance is in station chain parts.

02 Transport height button 2

The transport distance of the 1st clamp when startbutton 2 is pushed. Distance is in station chain parts.

03 Transport height button 3

The transport distance of the 1st clamp when startbutton 3 is pushed. Distance is in station chain parts.

04 Transport height button 4

The transport distance of the 1st clamp when startbutton 4 is pushed. Distance is in station chain parts.

3) Alarms

001 EMERGENCY STOP

One of the emergency stops is//has been pushed. When no emergency switch is active anymore, the emergency stop can be reset with the 'reset' button.

003 VARAN-BUS ERROR

The connection with one or more backplanes on the varan IO-bus is lost. As soon as connection is re-established, message will disappear.

021 Error chain inverter

The frequency inverter of the sorting chain gives an error. Switch off the inverter with the emergency stop to reset the inverter.

022 Error chain prox.switch

The proximity switch on the sorting chain didn't detect a catch for too long. This can be caused by a jammed chain.

023 Thermal protection chain

The thermal protection of the sorting chain is active. This can be caused by a jammed chain. Error can be reset by unlocking the protection in the cabinet.

024 Varan-Bus error

The connection with one or more backplanes on the varan IO-bus is lost. As soon as connection is re-established, message will disappear.

026 Full gate thermal off

One of the thermal protections of the full clamp gates is active. Gate can be jammed. Unlock the thermal protection in the electrical cabinet.

027 Empty gate thermal off

One of the thermal protections of the empty clamp gates is active. Gate can be jammed. Unlock the thermal protection in the electrical cabinet.

031 Time-out empty gate

The empty clamp gate wasn't back in home position in the estimated time. This can be caused by a jammed clamp.

032 Time-out full gate 1

The full clamp gate of lane 1 wasn't back in the home position in the estimated time. This can be caused by a jammed clamp.

033 Time-out full gate 2

The full clamp gate of lane 2 wasn't back in the home position in the estimated time. This can be caused by a jammed clamp.

034 Time-out full gate 3

The full clamp gate of lane 3 wasn't back in the home position in the estimated time. This can be caused by a jammed clamp.

035 Time-out full gate 4

The full clamp gate of lane 4 wasn't back in the home position in the estimated time. This can be caused by a jammed clamp.

036 Full clamp jam lane 1

The chain has sent clamps to lane 1, but they were not detected in lane 1. This can be caused by a jam.

037 Full clamp jam lane 2

The chain has sent clamps to lane 2, but they were not detected in lane 2. This can be caused by a jam.

038 Full clamp jam lane 3

The chain has sent clamps to lane 3, but they were not detected in lane 3. This can be caused by a jam.

039 Full clamp jam lane 4

The chain has sent clamps to lane 4, but they were not detected in lane 4. This can be caused by a jam.

041 Odd clamps empty gate

An odd number of clamps has been detected in the empty clamp gate. One sensor is covered, the other one is not.

042 Empty clamps jammed

The program wanted to change distribution of empty clamps to another station, but the jam photocell is covered.

043 Odd clamps full gate 1

An odd number of clamps has been detected in the full clamp gate of lane 1. One sensor is covered, the other one is not.

044 Odd clamps full gate 2

An odd number of clamps has been detected in the full clamp gate of lane 2. One sensor is covered, the other one is not.

045 Odd clamps full gate 3

An odd number of clamps has been detected in the full clamp gate of lane 3. One sensor is covered, the other one is not.

046 Odd clamps full gate 4

An odd number of clamps has been detected in the full clamp gate of lane 4. One sensor is covered, the other one is not.

051 Lane full clamp full

The next pair of full clamps has to go to a full lane. So, the chain is stopped and waits until it can restart.

052 Lane memory not empty

One of the lanes has been empty too long, but the lane fifo memory isn't. Check the fifo in the 'installation and test' menu and reset if necessary.

054 CAN-bus send error

An error occurred during sending of data by the CAN-bus. This can be caused by a wrong connection to the other machines.

055 Battery almost empty

The battery in the PLC is almost empty. It has to be replaced every year. Replace the battery as soon as possible to prevent loss of data.

056 CPU temperature too high

The temperature of the PLC-processor is too high. Reason can be a broken fan or a too high environment temperature.

061 Error inverter station 1

The frequency inverter of the chain of station 1 gives an alarm. This can be caused by a jammed clamp.

062 Error inverter station 2

The frequency inverter of the chain of station 2 gives an alarm. This can be caused by a jammed clamp.

063 Error inverter station 3

The frequency inverter of the chain of station 3 gives an alarm. This can be caused by a jammed clamp.

064 Error inverter station 4

The frequency inverter of the chain of station 4 gives an alarm. This can be caused by a jammed clamp.

066 Error lift up station 1

The clamp lift of station 1 isn't in the upper position in time. This can be caused by a jammed clamp.

067 Error lift up station 2

The clamp lift of station 2 isn't in the upper position in time. This can be caused by a jammed clamp.

068 Error lift up station 3

The clamp lift of station 3 isn't in the upper position in time. This can be caused by a jammed clamp.

069 Error lift up station 4

The clamp lift of station 4 isn't in the upper position in time. This can be caused by a jammed clamp.

071 Error blocker station 1

The lower blocker of station 1 isn't closed in the estimated time (reedswitch not detected). This can be caused by a jammed clamp.

072 Error blocker station 2

The lower blocker of station 2 isn't closed in the estimated time (reedswitch not detected). This can be caused by a jammed clamp.

073 Error blocker station 3

The lower blocker of station 3 isn't closed in the estimated time (reedswitch not detected). This can be caused by a jammed clamp.

074 Error blocker station 4

The lower blocker of station 4 isn't closed in the estimated time (reedswitch not detected). This can be caused by a jammed clamp.

076 Error chain station 1

The chain has been running, but the proximity switch did not see the chain running for too long. This means the chain can be jammed.

077 Error chain station 2

The chain has been running, but the proximity switch did not see the chain running for too long. This means the chain can be jammed.

078 Error chain station 3

The chain has been running, but the proximity switch did not see the chain running for too long. This means the chain can be jammed.

079 Error chain station 4

The chain has been running, but the proximity switch did not see the chain running for too long. This means the chain can be jammed.

081 Station 1 fifo full

The fifo buffer with sorting codes of station 1 is full. Therefore the station is blocked. When fifo is not full anymore, message will automatically reset.

082 Station 2 fifo full

The fifo buffer with sorting codes of station 2 is full. Therefore the station is blocked. When fifo is not full anymore, message will automatically reset.

083 Station 3 fifo full

The fifo buffer with sorting codes of station 3 is full. Therefore the station is blocked. When fifo is not full anymore, message will automatically reset.

084 Station 4 fifo full

The fifo buffer with sorting codes of station 4 is full. Therefore the station is blocked. When fifo is not full anymore, message will automatically reset.

086 Station 1 code no clamps

In the fifo memory is a code, but there are no clamps present. Check if clamps are stuck. If not, monitor and reset the fifo code in the installation and test menu.

087 Station 2 code no clamps

In the fifo memory is a code, but there are no clamps present. Check if clamps are stuck. If not, monitor and reset the fifo code in the installation and test menu.

088 Station 3 code no clamps

In the fifo memory is a code, but there are no clamps present. Check if clamps are stuck. If not, monitor and reset the fifo code in the installation and test menu.

089 Station 4 code no clamps

In the fifo memory is a code, but there are no clamps present. Check if clamps are stuck. If not, monitor and reset the fifo code in the installation and test menu.

091 Station 1 clamps without code

The last pair of clamps pushed in by the chain gate of station 1, didn't have a fifo code because the fifo memory was empty.

092 Station 2 clamps without code

The last pair of clamps pushed in by the chain gate of station 2, didn't have a fifo code because the fifo memory was empty.

093 Station 3 clamps without code

The last pair of clamps pushed in by the chain gate of station 3, didn't have a fifo code because the fifo memory was empty.

094 Station 4 clamps without code

The last pair of clamps pushed in by the chain gate of station 4, didn't have a fifo code because the fifo memory was empty.

096 Station 1 buffer full

The full clamps buffer behind station 1 is full, therefore the station is blocked. When the buffer isn't full anymore, blocking will be reset.

097 Station 2 buffer full

The full clamps buffer behind station 2 is full, therefore the station is blocked. When the buffer isn't full anymore, blocking will be reset.

098 Station 3 buffer full

The full clamps buffer behind station 3 is full, therefore the station is blocked. When the buffer isn't full anymore, blocking will be reset.

099 Station 4 buffer full

The full clamps buffer behind station 4 is full, therefore the station is blocked. When the buffer isn't full anymore, blocking will be reset.

101 No empty clamps station 1

The empty clamp buffer before station 1 doesn't have empty clamps. Station cannot run.

102 No empty clamps station 2

The empty clamp buffer before station 2 doesn't have empty clamps. Station cannot run.

103 No empty clamps station 3

The empty clamp buffer before station 3 doesn't have empty clamps. Station cannot run.

104 No empty clamps station 4

The empty clamp buffer before station 4 doesn't have empty clamps. Station cannot run.

106 Station 1 suppressed

The station is blocked and not allowed to feed new clamps. When suppression is over, the station will restart.

107 Station 2 suppressed

The station is blocked and not allowed to feed new clamps. When suppression is over, the station will restart.

108 Station 3 suppressed

The station is blocked and not allowed to feed new clamps. When suppression is over, the station will restart.

109 Station 4 suppressed

The station is blocked and not allowed to feed new clamps. When suppression is over, the station will restart.

133 Waiting for start

The system is waiting for a start signal to be given by the startbutton on this touchscreen.

135 Operating

The system is running, no alarms or other notifications.