



www.mobics.nl

Mobics B.V.
Lauwersmeer 9c
5347 JR Oss
The Netherlands
T +31 (0)412 69 12 90
F +31 (0)412 69 12 92

Parameters and alarms

Robofold V0100

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1) Machineparameters

1.1) *Overview machine parameters*

01 Reserved
02 Reserved
03 Reserved
04 Reserved
05 Number of call attempts until alarm
06 Chain home position time-out time
07 Debounce time hanger in chain sensor
08 Hanger in chain time-out time
09 Moment chain to slow speed
10 Moment start folding cycle
11 Moment hanger open lever up
12 Moment vacuum folding table on
13 Moment vacuum folding table off
14 Reserved
15 Reserved
16 Debounce time load unit full detection
17 Debounce time hanger in load unit
18 Time separator in load unit active
19 Minimum cycle time load unit separator
20 Reserved
21 Delay start hanger opening unit
22 Time activate hanger opening unit
23 Empty hanger fed off time-out time
24 Reserved
25 Reserved
26 Reserved
27 Reserved
28 Reserved
29 Reserved
30 Reserved
31 Standby time vacuum fan
32 Delay start lengthfold flaps
33 Lengthfold flaps movement time-out time
34 Crossfold flap movement time-out time
35 Delay 2nd flap start after 1st back
36 Extra turntime lengthfold flaps
37 Reserved
38 Reserved
39 Reserved
40 Reserved
41 Swing arm movement time-out time
42 Delay start swing arm after gripping
43 Pushing plate movement time-out time
44 Time to open stacker flaps
45 Stacker movement time-out
46 Reserved
47 Reserved
48 Reserved
49 Reserved
50 Reserved
51 Debounce time external stop signal
52 Reserved
53 Reserved

54 Reserved
55 Reserved
56 Reserved
57 Reserved
58 Reserved
59 Reserved
60 Reserved
61 Reserved
62 Reserved
63 Reserved
64 Reserved
65 Reset counters without password
66 Reserved
67 Reserved
68 Reserved
69 Reserved
70 CAN-bus stationnumber this PLC
71 CAN-bus baudrate
72 Reserved
73 Delay return to home screen
74 Reserved
75 Reserved
76 Reserved
77 Reserved
78 Reserved
79 Reserved
80 Reserved

1.2) Machine parameters details

05 Number of call attempts until alarm

The number of attempts the separator does to put the hanger onto the chain. If no hanger is on the chain after this number of attempts, a warning is given.

06 Chain home position time-out time

The maximum time the chain is allowed to run until the home position sensor must be detected. If the sensor isn't detected in this time, the chain is stopped and a warning is given. Time is in steps of 0,01s.

07 Debounce time hanger in chain sensor

The time the sensor which detects if a new hanger is dropped onto the chain must be covered before the chain starts to transport the hanger. Time is in steps of 0,01s.

08 Hanger in chain time-out time

The maximum time between the moment the separator in the loading unit starts and the moment the hanger should be detected by the sensor at the chain loading position. Time is in steps of 0,01s.

09 Moment chain to slow speed

The distance from the chain loading position to the position where the chain switches to slow speed. Distance is measured with the encoder on the chain motor.

10 Moment start folding cycle

The distance between the moment the chain switches to slow speed (see parameter 9) and the moment the folding cycle starts (when the holding templates go down). Distance is measured with the encoder on the chain motor.

11 Moment hanger open lever up

The distance between the moment the chain switches to slow speed (see parameter 9) and the moment the lever to release the hanger to take the hanger out of the piece goes up. Distance is measured with the encoder on the main motor.

12 Moment vacuum folding table on

The distance between the moment the chain switches to slow speed (see parameter 9) and the moment the vacuum on the folding table is switched on. Distance is measured with the encoder on the main motor.

13 Moment vacuum folding table off

The moment the vacuum of the folding table is switched off.

0 = When 2nd lengthfold flap home

1 = When crossfold is made

16 Debounce time load unit full detection

The time the sensor which detects if the loading unit buffer is full or empty, must be covered or uncovered to stop or start the calling of new hangers. Value is in steps of 0,01s.

17 Debounce time hanger in load unit

The time the sensor which detects if a hanger is present in the separator must be covered before the separator is allowed to put the hanger onto the chain. Value is in steps of 0,01s.

18 Time separator in load unit active

The time the separator in the loading unit is activated to put the hanger from the loading unit onto the chain. Value is in steps of 0,01s.

19 Minimum cycle time load unit separator

The minimum time between two cycles of the separator in the loading unit. Value is in steps of 0,01s.

21 Delay start hanger opening unit

The delay between the moment the chain stops in the home position and the moment the empty hanger opening unit is started to open the empty hanger. Value is in steps of 0,01s.

22 Time activate hanger opening unit

The time the cylinder of the empty hanger opening unit is activated to open the empty hanger and to put it onto the bar which takes the hanger out of the machine. Value is in steps of 0,01s.

23 Empty hanger fed off time-out time

The maximum time between the moment the empty hanger opening unit should have put the hanger onto the exit-bar and the moment it must have been detected by the sensor on the exit-bar. Value is in steps of 0,01s.

31 Standby time vacuum fan

If no new hangers are coming the vacuum fan will continue running for this time before it is switched off. Value is in seconds.

32 Delay start lengthfold flaps

The delay between the moment the templates to hold the piece on the folding table start and the moment the 1st lengthfold flap starts. Value is in steps of 0,01s.

33 Lengthfold flaps movement time-out time

The maximum time it may take for a lengthfold flap to reach an end position sensor. If a flap moves for this time, and the end sensor isn't detected, a warning is given. Value is in steps of 0,01s.

34 Crossfold flap movement time-out time

The maximum time it may take for the crossfold flap to reach one of the position sensors. If the flap moves for this time, and the end sensor isn't detected, a warning is given. Value is in steps of 0,01s.

35 Delay 2nd flap start after 1st back

The delay between the moment the 1st lengthfold flap goes back and the moment the 2nd lengthfold flap starts to make the fold. Value is in steps of 0,01s.

36 Extra turntime lengthfold flaps

The time the lengthfold flaps will continue turning after the end position switch has been detected. Value is in steps of 0,01s.

41 Swing arm movement time-out time

The maximum time it may take for the swinging arm which puts the pieces on the stacker, to reach one of its sensors during moving. If the arm moves for this time and no sensor is detected, a warning is given. Value is in steps of 0,01s.

42 Delay start swing arm after gripping

The delay between the moment the gripper on the swinging arm is closed to take the piece from the folding table and the moment the swinging arm starts to move backward. Value is in steps of 0,01s.

43 Pushing plate movement time-out time

The maximum time it may take for the pushing plate which pushes the pieces on the stacker flaps, to move from its down position to its home position. If the plate doesn't reach the home position in this time, a warning is given. Value is in 0,01s.

44 Time to open stacker flaps

The time the flaps of the stacker are opened to stack the piece onto the stacker conveyor. Value is in steps of 0,01s.

45 Stacker movement time-out

The maximum time it may take for the stacker lowerator conveyor to go down to the reedcontact or to go up to the photocell. If these sensors aren't detected in this time, a warning is given. Value is in steps of 0,01s.

51 Debounce time external stop signal

The time the input for the external stop must be on or off to stop or start the machine. Use this time in case a sensor is used instead of a relay contact from the railsystem. Value is in steps of 0,01s.

65 Reset counters without password

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

70 CAN-bus stationnumber this PLC

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

71 CAN-bus baudrate

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

73 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).

2) Program parameters

2.1) Overview program parameters

01 Stacking height
02 Time activated pushing plate
03 Stacker conveyor time
04 Time push against stacker flaps
05 Reserved
06 Reserved
07 Reserved
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80 Reserved

2.2) Program parameters

01 Stacking height

The number of pieces which will be stacked on 1 stack. If the stack on the conveyor has this height, the stacker conveyor will be started.

02 Time activated pushing plate

The time the pushing plate to push the piece onto the stacker flaps is activated. Value is in steps of 0,01s.

03 Stacker conveyor time

The time the conveyor(s) of the stacker is(are) activated in case a new stack is finished. Value is in steps of 0,01s.

04 Time push against stacker flaps

The time the stacker conveyor is sent up to push the piece against the stacker flaps. Value is in steps of 0,01s.

3) Alarms

001 EMERGENCY STOP

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

002 MOTOR THERMICAL OFF

The thermal protection of one of the motors is active. Check if the concerning motor is jammed and release the protection again.

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.

006 ERROR FREQUENCY INVERTER

One of the frequency inverters is in alarm (motor stuck?). Reset can be done by switching off the inverter with the emergency stop and wait for about 20 seconds.

007 24VDC POWER SUPPLY FAILURE

The transformer has detected a failure in the 24VDC circuit and switched this circuit off, because it can be caused by a short circuit.

008 GENERAL MOTOR ERROR

One of the motors or inverters gives an alarm. This can be a thermal protection, an inverter alarm or a motor overheat contact.

036 Error encoder chain

While the chain should be running, no pulses of the encoder were detected. Cause can be a chain jam. Check if the chain motor can still run.

037 Error chain home position

The chain has been running for too long without a detection of the home position. Check the home position sensor and check if the chain can still run.

041 Hanger in chain time-out

The loading unit separator tried to put a hanger onto the chain, but this hanger never arrived at the sensor. Remove the hanger which didn't arrive.

042 Hanger opening unit not home

The unit which opens the empty hangers is not in the home position. Check the position of the unit and the home position sensor.

043 No hanger at opening unit

The chain transported a hanger to the empty hanger opening unit, but it's not detected by the sensor there. Check the sensor and/or remove the jammed hanger.

044 Empty hanger not fed off

The empty hanger opening unit tried to feed off an empty hanger, but this hanger never passed the sensor directly after the opening unit.

046 Lengthfold flap 2 not home

The 2nd lengthfold flap is not in its home position. Check the sensor and check if the flap is jammed.

047 Lengthfold flap 1 time-out

During the movement of the 1st lengthfold flap, the end position sensor wasn't detected in time. Check the end position sensor and the flap movement.

048 Lengthfold flap 2 time-out

During the movement of the 2nd lengthfold flap, the end position sensor wasn't detected in time. Check the end position sensor and the flap movement.

050 Crossfold flap not home

The crossfold flap is not in its home/down position. Check the sensor and check if the flap is jammed.

051 Crossfold flap time-out

During the movement of the crossfold flap, the end position sensor wasn't detected in time. Check the end position sensor and the flap movement.

053 Photocell folding table error

The photocell which detects if there is a piece present at the folding table is covered. If a piece is present, it should be removed.

054 Conveyor movement time-out

When moving the stacker conveyor, the lower position (reedcontact) or the upper position (photocell) has been detected too late. Check sensors and cylinder movement.

056 Swing arm backpos. time-out

During the movement of the arm which puts the pieces on the stacker, the back position wasn't detected in time. Check the sensor and the arm movement.

057 Swing arm foldpos. time-out

During the movement of the arm which puts the pieces on the stacker, the front position wasn't detected in time. Check the sensor and the arm movement.

058 Swing arm releasepos time-out

During the movement of the arm which puts the pieces on the stacker, the release position wasn't detected in time. Check the sensor and the arm movement.

059 Pushing plate time-out

During the movement of the plate which pushes the piece on the stacker flaps, the upper position wasn't detected in time. Check the sensor and the arm movement.

061 External stop active

The signal that the machine should stop is activated. Therefore, no new hangers will be processed.

065 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.

066 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.

076 Buffercall stopped

The switch to stop the calling of new hangers to the machine is activated. No new hangers will be fed to the machine.

083 Waiting for start

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

085 Operating

The machine is running, no alarms or other notifications.