**Alarm code description:** **23/10/2015**

Each alarm has assigned a unique number (the alarm code). The meaning of the alarm and its code may differ from system to system.

An alarm can be a hardware alarm or a software alarm. A hardware alarm is an alarm the requires one or more digital inputs on the scanner card. A software alarm does not require a digital input.

**code 0x02:** Laser is OFF (interlock open); hardware alarm.

This alarm is common to all laser systems. It is emitted when the system detects an open Interlock at the customer connector or an open microswitch of the cover. The laser is disabled by its internal hardware when the interlock is opened (meaning that no voltage arrives to the interlock input at the scanner card).
The alarm is cleared automatically when the interlock is closed.

**code 0x03:** shutter is closed (obsolete alarm, should only occure in old systems based on MS-DOS).

**code 0x04:** DC Power fails (obsolete alarm, should only occure in old systems based on MS-DOS).
**code 0x05:** Overtemp of amplifier (obsolete alarm, should only occure in old systems based on MS-DOS).

**code 0x06:** Q-switch error.

YAG systems: the Q-switch is defective.

Fiber lasers: this error indicates that too much laser light is bach reflected into the resonator.

Coherent J3/J5: Indicates that the max. permitted dutycycle has been violated.

**code 0x07:** high reverse power (obsolete alarm, should only occure in old systems based on MS-DOS)
**code 0x08:** low forward power (obsolete alarm, should only occure in old systems based on MS-DOS)
**code 0x09:** YAG RS232 error (obsolete alarm, should only occure in old systems based on MS-DOS)

**code 0x0A:** belt stopped ; hard- and software alarm.

The "belt stop" alarm is emitted when the alarm is configured (enabled) and the system detects during printing that the encoder tic-counter does not count anymore during a pre-defined time period. The detection limit is at about 1 - 2 m/min, that means if the velocity is less the 1 - 2 m/min, the alarm is emitted.

The alarm is cleared automatically when the system detects movement of the encoder.

**code 0x0B:** program check not ok (obsolete alarm, should only occure in old systems based on MS-DOS)
**code 0x0C:** wrong figure-types in file (obsolete alarm, should only occure in old systems)

**code 0x0D:** no memory available ; software alarm.

This alarm is emitted when the system has no more memory available. This alarm can occure in case of corrupted messages, corrupted memory or program errors. The alarm is cleared every 10 seconds or when a new message is loaded.

**code 0x10:** file not found; software alarm.

This alarm is emitted when the message that should be opened, cannot be found. This may be the case on startup when the system tries to load the last messages that was printed. If you have printed with the GUI, the last printed messages was not stored in the harddisk and could not be loaded on startup.

The alarm is cleared automatically when another message is selected and the message could be loaded.

**code 0x11:** overpressure (internal laser alarm for 100W DEOS systems) ; hardware alarm.
**code 0x12:** watertemperature (internal laser alarm for 100W DEOS systems) ; hardware alarm.

**code 0x13:** waterlevel (internal laser alarm for 100W DEOS systems) ; hardware alarm.

**code 0x15:** invalid font (or not existing) ; software alarm.

This alarm is emitted if a specific font file that is used in the actual message could not be found.

The alarm can only be cleared when a new message is loaded.

**code 0x16:** overtemperature ; hardware alarm.

This alarm is emitted when the system detects an overtemperature. This alarm is considered as a critical alarm and the printing mode is always left.

The alarm can only be cleared when the temperature is o.k. and a new start command is given to the laser.

This alarm is available for the following systems:

K-1000 series, T-3000 series, F-9000 series, ICON series. For the D-5000 series this alarm would indicate that the scanner card is not configured properly.

**code 0x24:** warmup cycle still active ; hardware alarm.

YAG lasers: indicates that the system has not reached the correct working temperature.

Fiber lasers: the system is not ready for delivering a laser output.

Coherent J3/J5: a generic system failure does not allow the laser to fire.

**code 0x25:** shutter closed. ; hardware alarm.

This alarm is emitted when the system detects that the shutter is closed. Systems can be equipped with electronic and/or with mechanical shutters (automatic or manual). Thus,

this alarm depends on the system's settings.
The alarm is cleared automatically when the shutter is opened.

K-1000 series : equipped usualy with a manual mechanical shutter and a microswitch

T-3000 series : equipped with an automatic mechanical shutter and two microswitches.

D-5000 series : equipped with an electronic shutter.

Icon : not equipped with a shutter.
F-9000 series : equipped with an electronic shutter.

**code 0x26:** laser not ready ; hardware alarm.

This alarm is emitted when the firmware does not detect a "Laser Ready" signal. Not all lasers are equipped with such an electronic signal.

The alarm is cleared automatically as soon as the "Laser Ready" signal is detected.

T-3000 series: equipped with Laser Ready signal, indicating that the laser is ready for marking.
D-5000 series: equipped with Laser Ready signal, indicating that the laser is ready for marking. An alarm indicates that the control module is not enabled correctly due to possible overtemperature, RF-failure, DC-voltage failure or any failure of the pumping diodes.

F-9000 series: equipped with Laser Ready signal. An alarm indicates that the laser was disabled due to a back-reflection of the output beam. this may be the case when marking high reflective material at 90 degrees (in the center of the scanfield).

K-1060: equipped with a Laser Ready signal, indicating that the laser is enabled and prepared for printing. An alarm indicates that the

interlock may be open or the laser module is not enabled due to a DC-voltage failure or an overtemperature condition.

ICON: equipped with a Laser Ready signal. The alarm is active when the interlock is open, a failure of the RF driver has occurred or an overtemperature condition has occurred.

10W/30W CO2 lasers: equipped with a Laser Ready signal indicating a closed interlock of the laser (only available for DSP cards).

**code 0x27:** OEM shutter ; hardware alarm.

This alarm is emitted when the firmware does not detect an optional shutter signal. The system OEM shutter alarm must be enabled in this case. Not all lasers are equipped with such an electronic signal (only on systems with a SM121 scannercard).

The alarm is cleared automatically as soon as the "OEM shutter" signal is detected.

D-5000 series: only available when the DIP-switch 4 is set to ON and an external signal is connected to the corresponding input at the SM121. Systems from March 2010 are equipped with an aditional automatic mechanical shutter that gives this signal.

F-9000 series: only available when the DIP-switch 4 is set to ON and an external signal is connected to the corresponding input at the SM121.

T-3000 series: the automatic mechanical shutter sets this signal.

**code 0x28:** power off ; hardware alarm.

The alarm is emitted in the following cases.

D-5000 series: the laser's control module has no DC-power.

F-9000 series: the Master Oscillator does not work correctly.

T-3000 series: for systems that are equipped with a beam-absorber and the DUMPPOWER is set to a value > 0, this alarm indicates that the beam-absorber is overheated. If the alarm is only activated during a short moment (just seen in the alarm list, but not active), it indicates that the microswitch of the mechanical shutter is not working correctly.

Coherent J3/J5: The VSWR limit (reflected RF power) is reached. You might deactivate this alarm in this case. The VSWR limit is very sensitive and does not need to indicate a critical alarm.

30W CO2: indicates that the DC power has been above or under specified limits (needs a restart of the laser). Available only for DSP cards.

**code 0x30:** overspeed; software alarm.

The alarm is emitted when it is enabled and the software detects an overspeed during a print. An overspeed takes place when the object or part of it has left the scanfield before it could be marked completely.

The alarm is cleared automatically after 10 seconds (the main timer) or when a new start command is send to the system.

**code 0x31:** harddisk full; software alarm.

The alarm is emitted when the system is in the "log-mode" (logging data to the harddisk) and the logfile's size has reached the size that was set in the configuration.

The alarm is cleared when the "log-mode" is turned off or when the logfile is deleted actively.

**code 0x32:** file not allowed to print; software alarm.

The alarm is emitted when the system tries to load a message that is not compatible with the firmware, or is not allowed to be printed due to software restrictions.

ICON: the file was created with the GUI and the Icon does not have the IconNet license. Other systems: the file is created with a newer GUI version than the firmware, or the system is in the "log mode", but the file was not created with the GUI in the "log-mode". The alarm is cleared when a new message is loaded.

**code 0x33:** barcode creation failed (wrong parameters): software alarm.

The alarm is emitted when barcode data must be created internally by the laser and some barcode parameters (usually the text to be codified) is not conform to the barcode rules. The alarm is cleared when a new message is loaded or the data input is correct (e.g. the input data for the barcode are changed).

**code 0x34:** no barcode license; software alarm.

The alarm is emitted when there is no internal barcode license and the message contains some variable barcode data.

The alarm is cleared when a new message is loaded or the correct license number is given to the system.

**code 0x35:** no barcode library (wrong version); software alarm.

The alarm is emitted when the message contains variable barcode data and the firmware does not have a barcode generator.

The alarm is cleared when a new message is loaded. If you have this alarm and you wish to print variable barcodes you need to install a new flash-disk.

**code 0x36:** Triggersignal; hard- and software alarm.

The alarm is emitted when the alarm is enabled and the hardware detects the specified number of trigger signals during a print. This alarm helps to detect a failure of the encoder or encoder wheel while the products are still passing by.
The alarm is cleared automatically after 10 seconds (the main timer) or when a new start command is sent to the laser.

**code 0x37:** databasealarm; software alarm.

The alarm is emitted when the message contains an expiry object and the database file for this object cannot be found.
The alarm is cleared when a new message is loaded.

**code 0x38:** maximum distance alarm; hard-and software alarm.

The alarm is emitted when the maximum distance alarm is enabled and the software detects that the distance between two succesive prints is greater than the configured distance.

The alarm is cleared automatically after 10 seconds (the main timer) or when a new start

command is sent.

**code 0x39:** minimum distance alarm; hard-and software alarm.

The alarm is emitted when the minimum distance alarm is enabled and the software detects that the distance between two succesive prints is smaller than the configured distance.
The alarm is cleared automatically after 10 seconds (the main timer) or when a new start command is sent.

**code 0x40:** client timeout; software alarm.

The alarm is emitted when the internal server has a communication timeout with any external TCP/IP client.
The alarm is cleared automatically as soon as the communication is reestablished.

**code 0x41:** scanner_x alarm; hardware alarm.

The alarm is emitted when the alarm is enabled and the scanner card detects an error from the x scanner's driver. At startup of the firmware a scanner_x alarm is usual as the driver card is calibrating at each startup the scanner which takes about 1 minute. Any scanner error during normal operation indicates an abnormal funcionality of the scanner. It can be due to wrong scanner parameter settings, too high marking velocity, bad aligned laser beam (heating up the mirrors) or an overtemperature condition of the scanner due to excessive movements. Another possible source is a marking linewidth of > 0 , which implicates very fast circular movement of the scanners to draw thick lines.

The alarm is cleared automatically when no error signal applies to the scanner card.

**code 0x42:** scanner_y alarm; hardware alarm.

The alarm is emitted when the alarm is enabled and the scanner card detects an error from the x scanner's driver. At startup of the firmware a scanner_y alarm is usual as the driver card is calibrating at each startup the scanner which takes about 1 minute.
The alarm is cleared automatically when no error signal applies to the scanner card.

**code 0x43:** empty message alarm; software alarm.

The alarm is emitted under one of the following conditions:

-alarm is configured and a message without any content (no object inside) is loaded and trigger for printing.

-a message with a buffered usermessage is triggered for printing and the buffered usermessage field is empty (FIFO empty, NOT AN EMPTY STRING !).

-alarm is configured and a message with an internal usermessage (not buffered) is triggered for printing and the usermessage is an empty string.

The alarm is cleared when a new start command is sent or a new message is loaded/reloaded.

**code 0x44:** initialization alarm; software alarm.

The alarm is emitted when the initialization of the firmware has failed. This can be due to the following reasons:

-no scanner card is detected or the firmware is not the correct firmware for the found scanner card.
-the firmware has suffered at least 2 consecutive critical failures during startup with a program abort.
-no configuration file could be loaded at startup due to a corrupted or not present configuration file.
-the firmware has received during the startup routine the RS232 "panic" command 0x75 to prevent loading of any file from the harddisk to the RAM disk.

-the harddisk has suffered a fatal crash and the recovery system has been installed with the minumum amount of files to be able to start the laser program. Read more about this under Commandline parameters and System variables

The alarm is cleared when a new configuration is sent to the laser or the configuration parameters are edited and saved with the HH terminal or the touchscreen editor.

**code 0x45:** user-define alarm; hardware alarm.

The alarm is configurable in the alarm settings and is emitted when the configured input signal goes to the alarm-state (configurable).
It is reset when the input signal goes to non-alarm-state.

**code 0x46:** Z scanner error.

The alarm is emitted when the Z scanner has an error.

**code 0x47:** Laser not armed.

The alarm is emitted when the Laser is not armed for marking.

**code 0x48:** XY out of range.

The alarm is emitted when the X or Y position of the scanner is out of the permitted range. This may happen in dynamic printing under overspeed conditions or when some component of the message is outside the scanfield.

**code 0x49:** Lasermeasurement failed.

The alarm is emitted when the optional laser power measurement has failed.

**code 0x50:** UV laser not ready.

The alarm is emitted when the UV laser is not in the ready state. It may happen when there is no RS232 connection between the controller board and the laser controller or when the current is not set to the expected value.

**code 0x51:** Pixmap out of range.

The alarm is emitted when some pixel of an object that is member of a pixmap layer is rendered outside the pixmap. To clear this alarm you have to reload the message and set the data such that all objects are rendered completely inside the pixmap.

**code 0x52:** Channelstatus error.

The alarm is emitted when one or more of the diode channels return a bad status during marking. This may be due to not enabled diodes or some failure of the diodes. To clear this alarm you have to restart a printsession or re-enter the printing mode with a new start command. This alarm is only used for diodearray systems !

**code 0x53:** PWM out of range

The alarm is emitted when the pulse width modulation is longer than permitted (typically maximum 10% overall duty cycle). To clear this alarm you have to restart a printsession or re-enter the printing mode with a new start command. This alarm is only used for diodearray systems !

**code 0x54:** RTC battery failure

The alarm is emitted when at startup the data read from the RealTimeClock is smaller than the date of the firmware. It usually indicates that the RTC battery has failed or was removed. Note , that the alarm is only emitted when the RTCTEST parameter of the systemvariables is set to ‘1’, else only an incidence in the alarmlist is added.

To clear this alarm you must actively set the systemtime of the laser.

**code 0x55:** CPU temperature alarm

This alarm is only available on DSPCards. In the systemvariables two limits of the CPU core temperature can be set. A limit to emit an incidence just appearing in the alarm list and a limit to emit an alarm that will stop printing. The system measures the CPU temperature continuously and if the limits are reached the system emits an incidence/alarm.

**code 0x56:** Board temperature alarm

This alarm is only available on DSPCards (SM270). In the systemvariables two limits of the board temperature can be set. A limit to emit an incidence just appearing in the alarm list and a limit to emit an alarm that will stop printing. The system measures the board temperature continuously and if the limits are reached the system emits an incidence/alarm.

**code 0x57:** Undervoltage 5V

This alarm is only available on some DSPCards. In the systemvariables two limits of the 5V voltage can be set. A limit to emit an incidence just appearing in the alarm list and a limit to emit an alarm that will stop printing. The system measures the board voltage continuously and if the limits are reached the system emits an incidence/alarm. An

undervoltage is typically related to a DC font or cable/connector problem. Revise the DC output power at the font to be around 5.2 V and check the cable crimps and the connector pins for oxidation.

**code 0x58:** Undervoltage 3.3V

This alarm is only available on some DSPCards. In the systemvariables two limits of the 3.3V voltage can be set. A limit to emit an incidence just appearing in the alarm list and a limit to emit an alarm that will stop printing. The system measures the board voltage continuously and if the limits are reached the system emits an incidence/alarm. An undervoltage is typically related to a DC font or cable/connector problem. Revise the DC output power at the font to be around 5.2 V and check the cable crimps and the connector pins for oxidation.

**code 0x61:** Watchdog. This alarm occurs together with the initialization alarm.

The alarm is emitted when the hardware has detected a watchdog error condition, which is a critical error.

**code 0x62:** DSP paused. This alarm occurs together with the initialization alarm.

The alarm is emitted when DSP has been brought to a paused condition, which indicates some internal error.

**code 0x63:** FPGA failure. This alarm occurs together with the initialization alarm.

The alarm is emitted when a critical error in the FPGA has been detected.

**code 0x64:** DSP alarmmask. This alarm occurs together with the initialization alarm.

The alarm is emitted when a mask error condition has been detected.

**code 0x65:** Shutter sensor not open.

The alarm is emitted when the system detects a 'not open' shutter but expects an open shutter.
This alarm occurs together with the OEM shutter alarm.

**code 0x66:** Shutter sensor not closed.

The alarm is emitted when the system detects a 'not closed' shutter but expects a closed shutter.
This alarm occurs together with the OEM shutter alarm.