

Error Code Table

iFlex5 (C Structure)

System programs: CGMK V 1.xx (21.02.2005)
 Parts list No.: see iFlex5 system software

1. Error Codes displayed on the SLI Console

Error Code	Error	Cause	Elimination
E01	Fallen below radius range or angle range exceeded	<ul style="list-style-type: none"> Fallen below the minimum radius or gone past the maximum angle specified in the respective load chart due to luffing up the boom too far 	<ul style="list-style-type: none"> Luff down the boom to a radius or angle specified in the load chart.
E02	Radius range exceeded or fallen below angle range	<ul style="list-style-type: none"> Gone past the maximum radius or fallen below the minimum angle specified in the respective load chart due to luffing down the boom too far 	<ul style="list-style-type: none"> Luff up the boom to a radius or angle specified in the load chart.
E03	Non-permitted slewing zone (no load area)	<ul style="list-style-type: none"> The slewing zone with load is not permitted 	<ul style="list-style-type: none"> Slew to permitted area
E04	Operating mode not acknowledged or non permitted slewing zone	<ul style="list-style-type: none"> A non existing operating mode has been selected The boom is in a non-permitted slewing zone 	<ul style="list-style-type: none"> Set the correct operating mode for the operating state in question Slew the boom to a permitted area.

Error Code	Error	Cause	Elimination
E05	Prohibited length range	<ul style="list-style-type: none"> • Boom has been extended either too far or not far enough, e.g. if it is prohibited to go beyond a certain maximum boom length or with load curves for jibs where the main boom has to be extended to a certain length • Length sensor adjustment has changed, e.g. the cable slid off the length sensor reel. • Clutch between length sensor pot and drive is defective 	<ul style="list-style-type: none"> • Extend/retract boom to the correct length • Retract boom. Check the prestress of the cable reel (cable must be taut). Open the length sensor and carefully turn the length sensor pot counterclockwise until the detent by means of a screw driver • Replace the complete clutch including drive wheel and adjust length sensor pot as described above
E06	Radius range exceeded or fallen below angle range with luffing jib operation	<ul style="list-style-type: none"> • Maximum radius as specified in the load chart exceeded or fallen below minimum angle due to luffing down the luffing jib too far 	<ul style="list-style-type: none"> • Luff the jib to a radius or angle specified in the load chart.
E07	Overload relais check	<ul style="list-style-type: none"> • relais = overload active and CU input 20 = on • relais = no overload and CU input 20 = off • PDB variable invalid • emergency stop caused by system software 	<ul style="list-style-type: none"> • check cable to overload relais and CU input 20 • check relais • check CU input 20 • reset system • reset system

Error Code	Error	Cause	Elimination
E11	Fallen below lower limit value for measuring channel "length main boom"	<ul style="list-style-type: none"> • Length potentiometer is defective • Electronic component in the measuring channel is defective 	<ul style="list-style-type: none"> • Replace length potentiometer • Replace sensor unit
E12	Fallen below the lower limit value in the measuring channel "pressure piston side"	<ul style="list-style-type: none"> • Pressure transducer is defective. • Electronic component in the measuring channel is defective. 	<ul style="list-style-type: none"> • Replace pressure transducer • Replace sensor unit
E13	Fallen below lower limit value in the measuring channel "pressure rod side"	<ul style="list-style-type: none"> • refer to E12 	<ul style="list-style-type: none"> • refer to E12
E14	Fallen below lower limit value in measuring channel "force"	<ul style="list-style-type: none"> • Force transducer defective • Electronic component in the measuring channel is defective. 	<ul style="list-style-type: none"> • Replace force transducer • Replace sensor unit
E15	Fallen below lower limit value in measuring channel "angle main boom"	<ul style="list-style-type: none"> • Angle potentiometer defective • Electronic component in the measuring channel defective. 	<ul style="list-style-type: none"> • Replace angle sensor • Replace sensor unit

Error Code	Error	Cause	Elimination
E16	Fallen below lower limit value in measuring channel "angle 2"	<ul style="list-style-type: none"> • Angle potentiometer defective • Electronic component in the measuring channel defective. 	<ul style="list-style-type: none"> • Replace angle sensor • Replace sensor unit
E17	Fallen below lower limit value "length telescope I (+II)"	<ul style="list-style-type: none"> • Length potentiometer defective • Electronic component in the measuring channel defective 	<ul style="list-style-type: none"> • Replace length sensor. • Replace sensor unit
E18	Front outrigger overloaded	<ul style="list-style-type: none"> • Front outrigger overloaded 	<ul style="list-style-type: none"> •
E1A	Fallen below lower limit value in measuring channel "slewing angle 1".	<ul style="list-style-type: none"> • Cable between the central unit and the slewing angle sensor defective or loose. Water inside the plug of the angle sensor • Slewing angle potentiometer is defective • Electronic component in the measuring channel defective 	<ul style="list-style-type: none"> • Check cable as well as plugs, replace, if need be. • Replace slewing angle sensor • Replace sensor unit
E1B	Fallen below lower limit value in measuring channel "slewing angle 2"	<ul style="list-style-type: none"> • refer to E1A 	<ul style="list-style-type: none"> • refer to E1A
E1C	Fallen below lower limit value in measuring channel "luffing jib angle"	<ul style="list-style-type: none"> • Angle potentiometer defective • Electronic component in the measuring channel defective. 	<ul style="list-style-type: none"> • Replace angle sensor • Replace sensor unit

Error Code	Error	Cause	Elimination
E21	Upper limit value in measuring channel "main boom length" has been exceeded.	<ul style="list-style-type: none"> refer to E11 	<ul style="list-style-type: none"> refer to E11
E22	Upper limit value in measuring channel "pressure piston side" has been exceeded	<ul style="list-style-type: none"> refer to E12 	<ul style="list-style-type: none"> refer to E12
E23	Upper limit value in measuring channel "pressure rod side" has been exceeded.	<ul style="list-style-type: none"> refer to E12 	<ul style="list-style-type: none"> refer to E12
E24	Upper limit value in measuring channel "force" has been exceeded.	<ul style="list-style-type: none"> refer to E14 	<ul style="list-style-type: none"> refer to E14
E25	Upper limit value in measuring channel "main boom angle" has been exceeded.	<ul style="list-style-type: none"> refer to E15 	<ul style="list-style-type: none"> refer to E15
E26	Upper limit value in measuring channel "angle 2" has been exceeded.	<ul style="list-style-type: none"> refer to E16 	<ul style="list-style-type: none"> refer to E16
E27	Upper limit value in measuring channel "length telescope I (+II) has been exceeded.	<ul style="list-style-type: none"> refer to E17 	<ul style="list-style-type: none"> refer to E17
E2A	Upper limit value in measuring channel "slewing angle 1" has been exceeded	<ul style="list-style-type: none"> refer to E1A 	<ul style="list-style-type: none"> refer to E1A
E2B	Upper limit value in measuring channel "slewing angle 2" has been exceeded	<ul style="list-style-type: none"> refer to E1A 	<ul style="list-style-type: none"> refer to E1A
E2C	Upper limit value in measuring channel "luffing jib angle" has been exceeded	<ul style="list-style-type: none"> Angle potentiometer defective Electronic component in the measuring channel defective. 	<ul style="list-style-type: none"> Replace angle sensor Replace sensor unit

Error Code	Error	Cause	Elimination
E31	Error in the system program	<ul style="list-style-type: none"> The system program file is defective. Flash-EPROM defective 	<ul style="list-style-type: none"> Upload valid system software Replace central unit
E37	Error in the logical program flow	<ul style="list-style-type: none"> System program file is defective Flash-EPROM defective 	<ul style="list-style-type: none"> Upload valid system software Replace central unit
E38	System program and crane data file do not match.	<ul style="list-style-type: none"> The system program in the LMI does not match to the programming in the crane data file 	<ul style="list-style-type: none"> Upload valid system program file or the valid crane data file
E39	System program and load chart file do not match	<ul style="list-style-type: none"> The system program in the LMI and the programming in the load chart file do not match. 	<ul style="list-style-type: none"> Upload valid system program file or the valid load chart file
E43	Error in the write/read memory, (RAM)	<ul style="list-style-type: none"> Write/read memory (RAM) or central unit defective. 	<ul style="list-style-type: none"> Replace central unit
E47	<p>Error in the monitored write/read memory.</p> <p>The CRC verification of the monitored write/read memory provides an incoherent result</p>	<ul style="list-style-type: none"> The CRC sign of the monitored write/read memory is wrong The buffer battery is discharged (< 2V at 1kOhm). Central unit defective. 	<ul style="list-style-type: none"> Restart the LMI Replace buffer battery on the central unit. Replace central unit
E51	Error in the crane data file	<ul style="list-style-type: none"> No valid data in the crane data file. Flash-EPROM defective 	<ul style="list-style-type: none"> Upload valid crane data file Replace central unit
E52	Error in load chart file.	<ul style="list-style-type: none"> No valid data in the load chart file Flash-EPROM defective 	<ul style="list-style-type: none"> Upload valid load chart file Replace central unit
E56	Error in crane data file.	<ul style="list-style-type: none"> No valid data in the crane data file during calibration. Flash-EPROM defective 	<ul style="list-style-type: none"> Restore or upload valid crane data file Replace central unit
E57	Error in serial crane data file.	<ul style="list-style-type: none"> Calibration data file does not contain valid data. Flash-EPROM defective 	<ul style="list-style-type: none"> Upload calibration data file Replace central unit

Error Code	Error	Cause	Elimination
E60	The number of the selected File base and the programmed value are not identical	<ul style="list-style-type: none"> No valid data in the load chart file Base number not programmed Load chart file wrongly programmed 	<ul style="list-style-type: none"> Upload valid load chart file Program the correct base number (1 for base 1, 2 for base 2) Check base programming in the load chart file.
E61	Error in the CAN bus data transfer for all CAN units	<ul style="list-style-type: none"> CAN Bus cable between the central unit and the sensor unit defective or not connected. Can bus port in the central unit defective Short circuit in a CAN Bus cable 	<ul style="list-style-type: none"> Check the connection between the central unit and the sensor units Replace the central unit Replace Can Bus cable
E62	Error in the can bus data transfer of the pressure transducer sensor unit	<ul style="list-style-type: none"> Cable between the central unit and the sensor unit defective. Can bus port in the central unit defective Can bus port in the sensor unit is defective Sensor unit is defective 	<ul style="list-style-type: none"> Check the cable to the sensor unit Replace the central unit Replace the sensor unit Replace the sensor unit
E63	Error in the can bus pressure transducer sensor unit	<ul style="list-style-type: none"> The analog values of the sensor unit are invalid 	<ul style="list-style-type: none"> Replace the sensor unit
E64	Error in the can bus data transfer of the length/angle sensor unit	<ul style="list-style-type: none"> See E62 	<ul style="list-style-type: none"> See E62
E65	Error in the can bus length/angle sensor unit	<ul style="list-style-type: none"> See E63 	<ul style="list-style-type: none"> See E63
E66	Error in the can bus data transfer of the 2 nd length/angle sensor unit	<ul style="list-style-type: none"> See E62 	<ul style="list-style-type: none"> See E62
E67	Error in the can bus of the 2 nd length /angle sensor unit	<ul style="list-style-type: none"> See E63 	<ul style="list-style-type: none"> See E63
E68	Error in the can bus data transfer of the force sensor unit	<ul style="list-style-type: none"> See E62 	<ul style="list-style-type: none"> See E62
E69	Error in the can bus force sensor unit	<ul style="list-style-type: none"> See E63 	<ul style="list-style-type: none"> See E63

E80	Error in the slewing angle measurement	<ul style="list-style-type: none"> The difference between the average of the slewing angle and one of the wipers of the slewing potentiometer is out of the tolerance 	<ul style="list-style-type: none"> Check the slewing potentiometer adjustment Replace slewing angle sensor
E82	Error boom control task	<ul style="list-style-type: none"> The boom control task is not running 	<ul style="list-style-type: none"> Restart the system Load the boom control task
E84	Wrong rigging condition.	<ul style="list-style-type: none"> The selected rigging condition is not contained in the crane data file. 	<ul style="list-style-type: none"> Select another rigging condition Check the programming in the crane data file.
E85	Error in the radius determination	<ul style="list-style-type: none"> The computed radius is too small (negative deflection) 	<ul style="list-style-type: none"> Check the programming in the crane data file.
E89	Operating mode switchover with load.	<ul style="list-style-type: none"> The operating mode on the console has been switched over with the boom loaded. 	<ul style="list-style-type: none"> Select operating mode without load on the boom

Error Code	Error	Cause	Elimination
E91	No data transmission from the console to the central unit	<ul style="list-style-type: none"> • 24 V supply of the console is interrupted • Interruption or accidental ground in the line between console electronics and central unit • Transmitter/receiver module is defective 	<ul style="list-style-type: none"> • Check 24 V at terminal X1 of the console electronics • Check the connection console electronics - central unit. In case of an accidental ground, the transmitter module of the console electronics might be damaged. Therefore, replaces the console electronics. • Exchange console electronics or LMI main board resp.
E92	Error in the data transmission from console to central unit	<ul style="list-style-type: none"> • Loose connection in the line between console electronics and central unit • Transmitter/receiver module is defective 	<ul style="list-style-type: none"> • Check the connection between console electronics and central unit • Exchange console electronics or LMI main board resp.
E93	Error in the data transmission from the central unit to the console	<ul style="list-style-type: none"> • refer to E92 	<ul style="list-style-type: none"> • refer to E92

Error Code	Error	Cause	Elimination
E94	No data transmission from the central unit to the console	<ul style="list-style-type: none"> • Interruption or accidental ground in the line central unit – console • 5 V supply of the computer in the central unit is missing • 5 V supply is too low • Transmitter/receiver module is defective • Computer module is defective • Electro-magnetic interferences (e.g. when switching contactors or valves) 	<ul style="list-style-type: none"> • Check line to the console (in case of accidental ground, replace console electronics, too). • Check connection to the power unit • Exchange the LMI main board • Replace console electronics or LMI main board • Replace processor board. • Eliminate the source of interferences by inverse diodes or varistors.
E95	Error in the console File	<ul style="list-style-type: none"> • The console File is defective. 	<ul style="list-style-type: none"> • Replace the console File
E96	Error in the internal RAM of the console.	<ul style="list-style-type: none"> • The CPU of the console is defective. • The console main board is defective. 	<ul style="list-style-type: none"> • Replace the CPU of the console • Replace the console main board.
E97	Error in the external RAM of the console	<ul style="list-style-type: none"> • The external RAM of the console is defective. • The console main board is defective. 	<ul style="list-style-type: none"> • Replace the external RAM of the console. • Replace the console main board.
E98	LMI watchdog activated	<ul style="list-style-type: none"> • LMI processing time limit exceeded 	<ul style="list-style-type: none"> • Reset system • Connect PC terminal and watch error messages
EAB	Short circuit in the A2B switch circuit	<ul style="list-style-type: none"> • Short circuit in the A2B switch • Short circuit in the cable to the A2B switch 	<ul style="list-style-type: none"> • Replace A2B switch • Replace cable to the A2B switch
EAC	A2B switch circuit disconnected	<ul style="list-style-type: none"> • Disconnected cable in the A2B switch • Disconnected cable to the A2B switch 	<ul style="list-style-type: none"> • Connect or replace cable in the A2B switch • Connect or replace cable to the A2B switch
EAD	No valid A2B switch status	<ul style="list-style-type: none"> • Sensor wrong function • CAN bus delay 	<ul style="list-style-type: none"> • Replace A2B switch • Replace cable to the A2B switch
EC0	Prohibited area	<ul style="list-style-type: none"> • Boom is about to collide with the engine hood, switch off 	<ul style="list-style-type: none"> • Move boom to permitted area • Check values in the data prom DGA 11.5.

EC1	Approaching prohibited area	<ul style="list-style-type: none"> • Boom is about to collide with the engine hood, prewarning 	<ul style="list-style-type: none"> • Move boom to permitted area • Check values in the data prom DGA 11.5.
EC2	Angle range of luffing jib exceeded	<ul style="list-style-type: none"> • Luffing jib is raised too far 	<ul style="list-style-type: none"> • Luff down the jib to a angle specified in the load chart.
EDA	Datalogger write error	<ul style="list-style-type: none"> • Datalogger not connected • No power supply • Wrong Dosdrive status 	<ul style="list-style-type: none"> • Check CAN bus connection • Check power supply • Connect PC terminal and Refer to Dosdrive status list • Temporary: Press horn quitt button to work without datalogger
EDB	Datalogger setup error	<ul style="list-style-type: none"> • Setup of the datalogger is cleared (ser. crane data file or battery buffered RAM) 	<ul style="list-style-type: none"> • transfer data and setup datalogger again • temporary: Press horn quitt button to work without datalogger
EDC	Datalogger watchdog activated	<ul style="list-style-type: none"> • datalogger processing time limit exceeded 	<ul style="list-style-type: none"> • Reset system • Connect PC terminal and watch error messages
EDD	Battery empty	<ul style="list-style-type: none"> • Battery check detected a low voltage of the battery 	<ul style="list-style-type: none"> • change batterie, after this setup of RTC • Temporary: Press horn quitt button to work without datalogger
EDE	Record lost	<ul style="list-style-type: none"> • Not possible to save data because other task saves data at the same time 	Message disappears after a few seconds
EDF	Flash block full	<ul style="list-style-type: none"> • Not possible to save any more data 	Message disappears after a few seconds
EFD	LMI Watchdog extra time	<ul style="list-style-type: none"> • a funktion needs more than 0.5 sec, e.g. Flash PROM write 	Message disappears after a few seconds

Note:

If an error message is displayed which is not contained in above list, please contact the competent PAT service department.

2. LED Colour Codes

The bicolor LED on the central unit is used as a raw diagnostic information about the system status. It can be useful in the case that the iflex refuses terminal communication - otherwise the terminal is a much more powerful diagnostic tool.

During initialization (after reset) the LED shows some of the initialization steps, so if the reset procedure hangs, it is easier to find out where. The cycle is:

- RESET: red+small red (for approx 5 us)
- Wait for RAM: green (for approx 200 ms)
- Clear RAM: yellow (for approx 1 s)
- CRC-Check System program: light yellow (2.5 s)
- Init RS232/RS485 : yellow (1 s)
- Start RTOS: green (0.5 s)

After start of RTOS the LED toggles all 1 sec between dark/green/yellow/red.

So you can detect

- is the power supply ok?
- is the iflex in the reset procedure, hanging somewhere or is the Operating system running?

You cannot be sure if the LED shows running Operating system that all necessary tasks of the System program are running correct, too. That has to be made sure via terminal commands.

3. Terminal Text

Error messages and status messages are displayed on the terminal in plain text.