GTEC UPS MODEL:

DISCOVERY

Alarm codes

SERVICE DOCUMENT

1 Status/alarm codes

The UPS is able to monitor and report on the display panel the working status and any anomalies or faults that may occur during operation. If there is a problem, the UPS reports the event by displaying the appropriate code and the type of active alarm on the display panel.

1.1 Status

The *Status codes* indicate the current working status of the UPS.

CODE	MESSAGE	DESCRIPTION	NOTE
S00	**INITIALISATION**	Activation of the UPS (from UPS completely no powered)	**(1)**
S01	**AUTOTEST**	Autotest in progress	**(1)**
S02	**AUTOCALIBRATION**	Autocalibration in progress	**(1)**
S03	**SIGNAL TEST**	Signal test in progress	**(1)**
S04	**FUNCTIONAL TEST**	Functional test in progress	**(1)**
S05	**WAIT CABINET ID**	Waiting for cabinet identification number ID	**(1)**
S06	**STAND-BY WITH CB OFF**	UPS in standby (Load not powered) with battery charger OFF	
S07	**LOCK STAND-BY AND CB OFF**	UPS locked in standby (Load not powered) with battery charger OFF	
S10	**PRECHARGE**	Precharge from mains in progress	
S11	**PRECHARGE FROM BATTERY**	Precharge from battery in progress	
S20	**POWER OFF ACTIVE**	UPS not powered and consequently powering off.	
S21	**STAND-BY WITH CB ON**	UPS in standby (Load not powered) with battery charger ON	
S22	**LOCK STAND-BY AND CB ON**	UPS locked in standby (Load not powered) with battery charger ON	
S30	**WAIT RECHARGE BATTERY**	Waiting to recharge the battery before starting	
S31	**CALIBRATION**	Calibration mode active	
S32	**STARTING**	Start-up in progress	
S40	**ONLINE**	Online mode active	
S41	**ONLINE/ECM**	RESERVED/NOT USED	
S42	**ECO**	Economy mode active	
S43	**ECO+**	RESERVED/NOT USED	
S44	**ACTIVE ECO**	RESERVED/NOT USED	
S45	**FREQUENCY CONVERTER**	Frequency converter mode active	

S46	**FREQUENCY CONV./ECM**	RESERVED/NOT USED	
S47	**READY FOR EMERGENCY**	Stand-by off mode active	
S50	**BATTERY WORKING**	Battery operation	
S51	**BATTERY WORKING FORCED**	Battery operation forced by command	
S52	**BATTERY LOW**	Battery low voltage	
S60	**TEMPORARY BYPASS**	Load powered temporary from bypass line	
S61	**BYPASS DUE TO INV. LOCK**	Load powered from bypass line due to inverter lock	
S62	**LOAD FORCED ON BYPASS**	Load powered from bypass line forced by command	
S63	**REMOTE BYPASS COMMAND**	Remote command active to power the load by bypass line (from input contact)	
S64	**MANUAL BYPASS ACTIVE**	Manual bypass active	
S65	**BYPASS DUE TO BAT. ENDED**	Load powered from bypass line due to battery autonomy ended	
S70	**TEMPORARY INVERTER**	Load powered temporary by inverter	
S71	**INVERT. DUE TO BYP. LOCK**	Load powered by inverter due to bypass line locked	
S72	**LOAD FORCED ON INVERTER**	Load powered by inverter forced by command	
S80	**POWER CIRCULATION**	Power circulation active (on SBYP or on MBYP)	
S81	**POWER CIRCUL. BATTERY**	RESERVED/NOT USED	
S90	**LOAD OFF**	Load not powered	
S91	**EMERGENCY POWER OFF**	Emergency Power Off (EPO) active	
S92	**DISCONNECT. FROM THE LOAD**	UPS disconnected from the load	

1.2 Command

The *Command codes* indicate the presence of an active command.

CODE	MESSAGE	DESCRIPTION	NOTE
C01	**REMOTE OFF COMMAND**	Remote command active to switch off the UPS (from input contact)	
C02	**REMOTE BYPASS COMMAND**	Remote command active to power the load by bypass line (from input contact)	
C03	**REMOTE ON COMMAND**	Remote command active to switch on the UPS (from input contact)	
C04	**BATTERY TEST ACTIVE**	Battery test running	
C05	**MANUAL BYPASS COMMAND**	Manual bypass active	
C06	**EMERGENCY OFF COMMAND**	Emergency switch-off command active (REPO)	
C07	**REMOTE BATT. CHARGER OFF**	Remote command to switch off the battery charger (from input contact)	
C08	**BYPASS COMMAND ACTIVE**	Command active to power the load by the bypass line (from the panel)	

1.3 Warning

The *Warning codes* are messages related to a special configuration or to a particular operation of the UPS.

CODE	MESSAGE	DESCRIPTION	NOTE
W01	**BATTERY LOW WARNING**	End of discharge pre-alarm	
W02	**SHUTDOWN ACTIVE**	Programmed switch-off active	
W03	**SHUTDOWN IMMINENT**	Programmed switch-off imminent	
W04	**BYPASS DISABLED**	Bypass disabled (the bypass will not be used in any condition)	
W05	**SYNCHRONISATION DISABLED**	Synchronisation disabled (UPS in Free running mode)	
W06		NOT USED	
W07	**SERVICE UPS**	Maintenance of the UPS must be performed	
W08	**SERVICE BATTERY**	Maintenance of the batteries must be performed	

1.4 Anomaly

The *Anomaly codes* indicate conditions or problems which do not involve a UPS block but could limit or prevent the use of certain features.

CODE	MESSAGE	DESCRIPTION	NOTE
A01	**CONFIG. DATA CORRUPTED**	Configuration data not valid (i.e.: battery charger not properly configured)	
A02	**DISPLAY ERROR**	Display communication lost	
A03	**INVERTER ASYNCHRONOUS**	Inverter not synchronised with the bypass line	
A04	**EXTERNAL SYNC OUT OF RANGE**	External Sync out of tolerance range	
A05	**MAINS OVERVOLTAGE L1**	Overvoltage on input line Phase1	
A06	**MAINS OVERVOLTAGE L2**	Overvoltage on input line Phase2	
A07	**MAINS OVERVOLTAGE L3**	Overvoltage on input line Phase3	
A08	**MAINS UNDERVOLTAGE L1**	Undervoltage on input line Phase1	
A09	**MAINS UNDERVOLTAGE L2**	Undervoltage on input line Phase2	
A10	**MAINS UNDERVOLTAGE L3**	Undervoltage on input line Phase3	
A11	**MAINS FREQUENCY ABNORMAL**	Input frequency out of tolerance	
A12	**INPUT SWITCH OPEN**	Auxiliary contact of the input switch open (from input contact)	
A13	**BYPASS VOLTAGE ABNORMAL L1**	Voltage on bypass line out of tolerance Phase1	
A14	**BYPASS VOLTAGE ABNORMAL L2**	Voltage on bypass line out of tolerance Phase2	
A15	**BYPASS VOLTAGE ABNORMAL L3**	Voltage on bypass line out of tolerance Phase3	
A16	**BYPASS FREQUENCY ABNORMAL**	Bypass frequency out of tolerance	
A17	**BYPASS SWITCH OPEN**	Auxiliary contact of the bypass switch open (from input contact)	
A18	**BYPASS VOLT. OUT OF RANGE**	Voltage on bypass line not present	
A19	**OUTPUT PEAK OVERCURRENT L1**	RESERVED/NOT USED	
A20	**OUTPUT PEAK OVERCURRENT L2**	RESERVED/NOT USED	
A21	**OUTPUT PEAK OVERCURRENT L3**	RESERVED/NOT USED	
A22	**LOAD > USER THRESHOLD L1**	Load higher than the user threshold set on Phase1	
A23	**LOAD > USER THRESHOLD L2**	Load higher than the user threshold set on Phase2	
A24	**LOAD > USER THRESHOLD L3**	Load higher than the user threshold set on Phase3	
A25	**OUTPUT SWITCH OPEN**	Auxiliary contact of the output switch open (from input contact)	
A26	**BATTERY NOT PRESENT B+**	Positive branch batteries missing or battery fuses open	
A27	**BATTERY NOT PRESENT B-**	Negative branch batteries missing or battery fuses open	
A28		NOT USED	
A29	**SYSTEM TEMP. SENSOR FAULT**	System temperature sensor fault	

CODE	MESSAGE	DESCRIPTION	NOTE
A30	**SYSTEM UNDERTEMPERATURE**	System temperature <0°C	
A31	**SYSTEM OVERTEMPERATURE**	System temperature >50°C	
A32	**BOOST UNDERTEMPERATURE**	PFC/Boost/CB stage temperature <0°C	
A33	**INVERTER UNDERTEMPERATURE**	Inverter stage temperature <0°C	
A34		NOT USED	
A35	**BATTERY TEMP. SENSOR FAULT**	RESERVED/NOT USED	
A36	**BATTERY OVERTEMPERATURE**	Internal battery over temperature	
A37	**EXTERNAL TEMP. SENS. FAULT**	External battery temperature sensor fault	
A38	**EXTERNAL SENSOR OVERTEMP.**	External sensor temperature >33°C (adjustable with the service software)	
A39	**REPLACE BATTERY B+**	Replace the positive branch batteries	
A40	**REPLACE BATTERY B-**	Replace the negative branch batteries	
A41	**QN SWITCH OPEN**	RESERVED/NOT USED	
A42	**BATTERY SWITCH OPEN**	Auxiliary contact of the battery switch open (from input contact)	
A43	**ALARM FROM INPUT CONTACT**	General alarm from external contact (from input contact)	
A44	**MAINS VOLTAGE OUT OF RANGE**	Mains voltage fail on phase 1, phase 2 and phase 3 of input line	
A45	**LOAD > CSS LIMIT**	Overload level achievement referred to the power according to the EN50171 standard (only for CBT/CBM)	
A46	**DEEP DISCHARGE PROTECTION**	Battery low level achievement during the last battery intervention (only for CBT/CBM)	
A47	**DIFFERENT FIRMW. VERSION**	UPS in a parallel system with different firmware version	**(2)**
A48	**ANOMALY ON REMOTE UNIT**	RESERVED/NOT USED	
A49	**DATE AND TIME NOT SET**	The date and time are not set	
A50	**CALIBRATION DATA ERROR A**	Calibration parameters out of range	
A51	**CALIBRATION DATA ERROR B**	RESERVED/NOT USED	
A52	**OUTPUT BOARD DATA ERROR**	Output board version not compatible with control	

1.5 Fault

The *Fault codes* indicate critical problems that, if persisting, can lead to the block of the UPS even in a very short time.

CODE	MESSAGE	DESCRIPTION	NOTE
F01	**INTERNAL COMM. ERROR**	Internal communication error	
F02	**MAINS PHASE REVERSED**	Incorrect cycle of the input phases	
F03	**INP. FUSE/CONTACT FAULT L1**	Phase1 input fuse blown or input contact fault (does not close)	
F04	**INP. FUSE/CONTACT FAULT L2**	Phase2 input fuse blown or input contact fault (does not close)	
F05	**INP. FUSE/CONTACT FAULT L3**	Phase3 input fuse blown or input contact fault (does not close)	
F06	**INPUT CONTACT SHORT CCT L1**	Phase1 input contact locked short-circuit (does not open)	
F07	**INPUT CONTACT SHORT CCT L2**	Phase2 input contact locked short-circuit (does not open)	
F08	**INPUT CONTACT SHORT CCT L3**	Phase3 input contact locked short-circuit (does not open)	
F09	**PRECHARGE DC BUS ERROR B+**	Pre charge of the positive capacitor branch failed	
F10	**PRECHARGE DC BUS ERROR B-**	Pre charge of the negative capacitor branch failed	
F11	**BOOST FAULT**	Boost stage anomaly	
F12	**BYPASS PHASE REVERSED**	Incorrect cyclical direction of the bypass phases	
F13	**BOOST VOLTAGE ERROR**	Temporary overvoltage boost	
F14	**INV. SINEWAVE ABNORMAL L1**	Phase1 sinusoid inverter deformed	
F15	**INV. SINEWAVE ABNORMAL L2**	Phase2 sinusoid inverter deformed	
F16	**INV. SINEWAVE ABNORMAL L3**	Phase3 sinusoid inverter deformed	
F17	**INVERTER ERROR**	Inverter stage anomaly	
F18	**OUTPUT VDC BALANCE ERROR**	Balance error on output VDC	
F19	**BATTERY OVERVOLTAGE B+**	Overvoltage of the positive battery branch (battery charger error)	
F20	**BATTERY OVERVOLTAGE B-**	Overvoltage of the negative battery branch (battery charger error)	
F21	**BATTERY UNDERVOLTAGE B+**	Undervoltage/fault of the positive battery branch (battery/fuse)	
F22	**BATTERY UNDERVOLTAGE B-**	Undervoltage/fault of the negative battery branch (battery/fuse)	
F23	**OUTPUT OVERLOAD**	Output overload	
F24	**BYPASS NOT AVAILABLE**	RESERVED/NOT USED	
F25	**OUTPUT NEGATIVE POWER**	Inverter takes power from output	
F26	**OUT. CONTACT SHORT CCT L1**	Phase1 output contact locked (does not open)	
F27	**OUT. CONTACT SHORT CCT L2**	Phase2 output contact locked (does not open)	
F28	**OUT. CONTACT SHORT CCT L3**	Phase3 output contact locked (does not open)	
F29	**OUT.FUSE/CONTACT FAULT L1**	Phase1 output fuse blown or output contact fault (does not close)	

CODE	MESSAGE	DESCRIPTION	NOTE
F30	OUT.FUSE/CONTACT FAULT L2	Phase2 output fuse blown or output contact fault (does not close)	
F31	OUT.FUSE/CONTACT FAULT L3	Phase3 output fuse blown or output contact fault (does not close)	
F32	BATTERY CHARGER FAULT	Battery charger stage fault	
F33	BATTERY MEASURES ERROR	Failure of the system to measure the battery voltage	
F34	POWER MODULE OVERTEMP.	Power module heatsink temperature >100°C (>85°C for S3U)	
F35	TRANSFORMER OVERTEMP.	Over temperature of the transformer	(3)
F36	FAN FAULT	RESERVED/NOT USED	
F37	BATTERY CHARGER OVERTEMP.	Battery charger temperature >85°C (only for S3U)	
F38		NOT USED	
F39	VDC BUS MEASURES ERROR	Failure of the system to measure the DC bench voltage	
F40	BATTERY FUSE 1 B+	Fuse of the CB positive branch blown	
F41	BATTERY FUSE 1 B-	Fuse of the CB negative branch blown	
F42	BATTERY FUSE 2 B+	Fuse of the boost positive branch blown	
F43	BATTERY FUSE 2 B-	Fuse of the boost negative branch blown	
F44		NOT USED	
F45	PARALLEL LINK OPEN	Communication bus open in a parallel system (one point)	(2)
F46	PARALLEL R_BYP. LINE FAULT	Anomaly of bypass request line in a parallel system	(2)
F47	PARALLEL SYNC. LINE FAULT	Anomaly of synchronization line in a parallel system	(2)
F48	BATTERY POLARITY ERROR	Wrong position of neutral battery cable	
F49	BATT. CONTACT 1 CMD FAULT	Fault in the signal command of the battery contact 1	
F50	BATT. CONTACT 2 CMD FAULT	Fault in the signal command of the battery contact 2	
F51	BATT. CONTACT 1 SHORT CCT	Short-circuit on battery contact 1	
F52	BATT. CONTACT 2 SHORT CCT	Short-circuit on battery contact 2	
F53	BYP. AUXILIARY POWER FAULT	Fault of the redundant auxiliary power supply for bypass line	
F54	MEMORY ACCESS ERROR A	Memory (A) access error	
F55	MEMORY ACCESS ERROR B	RESERVED/NOT USED	
F56	CALIBRATION ERROR PFC	PFC calibration error	
F57	CALIBRATION ERROR INV	Inverter calibration error	
F58	CALIBRATION ERROR BAT	Battery calibration error	
F59	OUTPUT BOARD. COMM. ERROR	Output board communication error	
F60	COMM. BOARD LINK FAULT	Communication board link fault	
F61	CALIBRATION ERROR BYP	Bypass calibration error	

1.6 Lock

The *Lock codes* indicate that the UPS or a part thereof is blocked (they are usually preceded by an alarm alert). In the event of the failure and consequent block of the inverter, this will switch off along with the power to the load through the bypass line (this procedure is excluded for the blocks due to persistent overloads and blocks due to short circuits).

CODE	MESSAGE	DESCRIPTION	NOTE
L01	**AUXILIARY POWER FAULT**	Auxiliary power supply incorrect	
L02	**BOARDS LINK FAULT**	Disconnection of one or more internal connection cable of the boards	
L03	**INP. FUSE/CONTACT FAULT L1**	Phase1 input fuse blown or input contact does not close	
L04	**INP. FUSE/CONTACT FAULT L2**	Phase2 input fuse blown or input contact does not close	
L05	**INP. FUSE/CONTACT FAULT L3**	Phase3 input fuse blown or input contact does not close	
L06	**BOOST OVERVOLTAGE B+**	Boost positive stage overvoltage	
L07	**BOOST OVERVOLTAGE B-**	Boost negative stage overvoltage	
L08	**BOOST UNDERVOLTAGE B+**	Boost positive stage undervoltage	
L09	**BOOST UNDERVOLTAGE B-**	Boost negative stage undervoltage	
L10	**BYPASS BACKFEED**	Bypass static switch fault (Back Feed Protection)	
L11	**BYPASS OUTPUT FAULT L1**	L1 bypass output unavailable for contact fault	
L12	**BYPASS OUTPUT FAULT L2**	L2 bypass output unavailable for contact fault	
L13	**BYPASS OUTPUT FAULT L3**	L3 bypass output unavailable for contact fault	
L14	**INVERTER OVERVOLTAGE L1**	Phase1 inverter overvoltage	
L15	**INVERTER OVERVOLTAGE L2**	Phase2 inverter overvoltage	
L16	**INVERTER OVERVOLTAGE L3**	Phase3 inverter overvoltage	
L17	**INVERTER UNDERVOLTAGE L1**	Phase1 inverter undervoltage	
L18	**INVERTER UNDERVOLTAGE L2**	Phase2 inverter undervoltage	
L19	**INVERTER UNDERVOLTAGE L3**	Phase3 inverter undervoltage	
L20	**INV. SINEWAVE ABNORMAL L1**	Direct voltage in inverter output or deformed inverter sinusoid of Phase1.	
L21	**INV. SINEWAVE ABNORMAL L2**	Direct voltage in inverter output or deformed inverter sinusoid of Phase2.	
L22	**INV. SINEWAVE ABNORMAL L3**	Direct voltage in inverter output or deformed inverter sinusoid of Phase3.	
L23	**OUTPUT OVERLOAD L1**	Overload on Phase1 output	
L24	**OUTPUT OVERLOAD L2**	Overload on Phase2 output	
L25	**OUTPUT OVERLOAD L3**	Overload on Phase3 output	
L26	**OUTPUT SHORT-CIRCUIT L1**	Short-circuit on Phase1 output	

CODE	MESSAGE	DESCRIPTION	NOTE
L27	OUTPUT SHORT-CIRCUIT L2	Short-circuit on Phase2 output	
L28	OUTPUT SHORT-CIRCUIT L3	Short-circuit on Phase3 output	
L29	OUTPUT FUSE/CONTACT FAULT L1	Phase 1 output fuse blown or output contact fault (does not close)	
L30	OUTPUT FUSE/CONTACT FAULT L2	phase 2 output fuse blown or output contact fault (does not close)	
L31	OUTPUT FUSE/CONTACT FAULT L3	Phase 3 output fuse blown or output contact fault (does not close)	
L32	PARALLEL SYNCHRON. ERROR	Synchronisation error in a parallel system	(2)
L33	PARALLEL SYNC. LINE FAULT	Synchronisation signal anomaly in a parallel system	(2)
L34	BOOST OVERTEMPERATURE	PFC/Boost/CB stage temperature >105°C (>90°C for S3U)	
L35	INVERTER OVERTEMPERATURE	Inverter stage temperature >105°C (>90°C for S3U)	
L36		NOT USED	
L37	BATTERY CHARGER OVERTEMP.	Battery charger temperature >90°C (only for S3U)	
L38	BOOST TEMP. SENSOR FAULT	Temperature sensor of the boost stage fault	
L39	INVERTER TEMP. SENSOR FAULT	Temperature sensor of the inverter stage fault (short-circuit or open-circuit)	
L40		NOT USED	
L41	BATT. CHARGER TEMP. SENSOR	Battery charger temperature sensor fault (only for S3U)	
L42	BATTERY FUSE FAULT	Battery fuse blown	
L43	BATTERY CONTACT SHORT CCT	Battery contact locked short-circuit (does not open)	
L44	INPUT CONTACT SHORT CCT L1	Phase 1 input contact locked short-circuit (does not open)	
L45	PARALLEL BUS DIVISION	Communication bus interrupted in a parallel system (two points)	(2)
L46	PARAL. COMMUNICATION FAULT	Communication bus anomaly in a parallel system	(2)
L47	PARALLEL BOARD FAULT	Parallel board anomaly	(2)
L48	BATTERY POLARITY ERROR	RESERVED/NOT USED	
L49	OUTPUT CAPACITOR OVERTEMP.	Output AC capacitor fault	
L50	BYPASS OVERTEMP.	Bypass over temperature	(3)
L51	BATT. CHARGER SHORT-CIRCUIT	Short-circuit on battery charger output	
L52	PARAL. P POWER ERROR L1	Active power error for the phase 1	(2)
L53	PARAL. P POWER ERROR L2	Active power error for the phase 2	(2)
L54	PARAL. P POWER ERROR L3	Active power error for the phase 3	(2)
L55	PARAL. Q POWER ERROR L1	Reactive power error for the phase 1	(2)
L56	PARAL. Q POWER ERROR L2	Reactive power error for the phase 2	(2)

CODE	MESSAGE	DESCRIPTION	NOTE
L57	PARAL. Q POWER ERROR L3	Reactive power error for the phase 3	(2)

1.7 Additional events (only for history)

The *Additional events Codes* indicates events useful for history of the UPS. Since are instantaneous, they don't appear on the display but are logged in the log file.

CODE	MESSAGE	DESCRIPTION	NOTE
E01	ON FOR AUTO-RESTART	Automatic switching on of the UPS (due to auto-restart function) at the coming back of the mains, after a shutdown executed in battery working mode.	(1)
E02	ON FOR RESTORE COMMAND	Switching on of the UPS because of software command (received via serial line or via network card).	(1)
E03	OFF FOR AUTO-OFF	UPS switched off because of load under minimum threshold value	(1)
E04	OFF FOR SHUTDOWN COMMAND	UPS switched off because of software command (received via serial line or via network card).	(1)
E05	OFF FOR BATTERY ENDED	UPS switched off because of battery fully discharged.	(1)
E06	OFF FOR AUTONOMY LIMITAT.	UPS switched off because of limited autonomy setting	(1)
E07	OFF FOR LOCK	UPS switched off because of lock	(1)
E08	POWER ON	UPS powered on	(1)
E09	BATTERY CHARGED	UPS battery charged	(1)
E10	CONFIGURATION CHANGED	Configuration of the UPS changed from the panel	(1)
E11	ON FOR SYSTEM ON	UPS switched on by the panel	(1)
E12	OFF FOR SYSTEM OFF	UPS switched off by the panel	(1)
E13	BATTERY WORKING	UPS switched in battery working status	(1)
E14	LOAD ON BYPASS	Load switched on bypass	(1)

1.8 NOTE

(1) = Only for log file
(2) = Only for parallel system
(3) = Only for special UPS