

Trouble shooting for EFOY Pro fuel cells

concerning firmware 17.x



Note: Please always update the firmware if outdated

Do a RESET when an error occurred, before dismantling the EFOY Pro. It might be possible, that an error occurred wrongly during external factors.

Please contact your service partner, if an error occurs several times and is not remediable on yourself.

Text on display

Error number **at first**,
then text message
 e.g. error 30: please
 refill Service Fluid

types of errors

A = automatically reset (max. number of restarts and und time interval: X x Y)
B = manual override needed (e.g. empty fuel cartridge)
F = frost protection mode is not possible out of this error, if the cause of error is not given any more
P = permanent error
R = Reset needed
W = warning

Update: 03.03.2014

text message	error Nr.	type of error	error description	possible cause of error	action	note
Service is required. Protect device against frost! Please contact EFOY hotline or hotline@sfc.com.	1	R	System configuration incomplete	Firmware update failed	Repair required	
	10	P	Stack defect	Defect component	Repair required	Update current firmware version
	15	P	System error	Error 10 occurred before, internal problem	Repair required	
A restart is required. If the error occurs again please contact EFOY hotline or hotline@sfc.com. Press OK for restart.	13	A (1x30s) R/B	System delivers no stack power	Defect component	Repair required	
				Different switching on and off thresholds in cluster operation	Adjust switching on and off threshold (via Hyperterminal)	
	14	A (1x30s) R	Circulation pump defect	Defect component	Repair required	
	17	R	Illogical state	Defect component	Repair required	

text message	error Nr.	type of error	error description	possible cause of error	action	note
Please make sure the exhaust hose is not blogged, bent or frozen. Press OK for re-start.	11	A (1x30s) B R	Stack power to low or voltage trip	Exhaust hose blocked	Take off exhaust hose and press "reset", if the system runs without any problems, the exhaust tube is blocked. If error should remain, repair required	Update current firmware version
				Lack of additional air	Please check installation situation, make sure that there is enough cooling air (port diameter should be 10 cm)	
				Exhaust tube blocked	Repair required	
				Defect component	Repair required	
	18	A (1x30s) B R	open circuit voltage to low	Exhaust tube is blocked / frozen	- Take off exhaust hose and press "reset", if the system runs without any problems, the exhaust tube is blocked. - If error should remain, repair required	
				Heat exchanger is blocked / frozen	- Check supply- and exhaust air conduction, if the system runs without any problems, the heat exchanger is blocked. - If error should remain, repair required	
				Failure in open circuit voltage	Repeat start up 3 times to reheat the stack	
				Defect component	Repair required	

Fuel cartridge empty. Please replace the fuel cartridge, and press OK.	20	B R	Empty fuel cartridge	Empty or no cartridge connected	Connect a new fuel cartridge and confirm it at the operation panel	In isolated cases the valve of the EFOY M5 and M10 fuel cartridges may not work. Please contact the SFC service.
				Tank connector defect	Check if tank connection is defiled or cracked	
				Filled or partly filled cartridge	Connect new cartridge. If fuel cartridge is not completely empty, please shake it, that the intake hose is free again	
	22	B R	No methanol in the system (at the beginning of operation)	Fuel cartridge sucks ambient air / fuel connector inappropriate connected	- Back off fuel connector and remove foreign material. - Connect fuel connector tightly	
Dosing pump blocked or defect				- Maybe you have to compress the fuel cartridge firmly while connected so a deadlock has the chance to declamp - If not, reparation is required		

text message	error Nr.	type of error	error description	possible cause of error	action	note
Please refill service fluid Press OK for re-start.	30	B R	Intermediate reservoir filling level: < 30%	Caused by operation at too high ambient temperatures; lack of cooling air	Please refill Service Fluid and make sure that there is enough cooling air	If you have to refill service fluid to many times you should please check installation as well as the air in- and outlet
				Subsequent damage of frozen stack	Repair required	
				Defect components		
	30-60 min after initial start-up --> absence of enough cooling air	- Make sure that there is enough incoming air - Press "reset", so the system has to do the start-up again				
	31	B	Intermediate reservoir filling level: < 5%	Leakage or defect component	Repair required	Result of error 30

Interruption: Cooling insufficient. Please check installation and air supply!	32	A B W	Intermediate reservoir filling level < 55 % and temperature at stack or heat exchanger to high	System temperature is too high	- Bring down ambient temperature - possibly fan blocked - inappropriate inlet air installation - incoming air blocked by fuel cartridge or wall	Please check installation regarding off-heat
	41	A B W	Error caused by ambient temperature	Ambient temperature over 45 °C	System starts up automatically, if temperature is under 38 °C: Lower ambient temperature	

Interruption: Device frozen. Please defrost device slowly for at least 24h at room temperature.	40	A B	Error caused by ambient temperature	Stack temperature below 3 °C (possibly frozen)	Defrost system at room temperature (approximately 24 h), afterwards install the system again and start running
				Defect component	Repair required

text message	error Nr.	type of error	error description	possible cause of error	action	note
Battery voltage low. Please check battery connection and load battery.	50	A B	Battery voltage is too low (sense line)	Voltage metering not in order (e.g. sense lines not or not approximately connected or cut-outs of the sense line defect)	- Take comparative measurement with circuit analyser at EFOY-power plug (two outer pins) and battery - check cut-outs of the connecting cables - check loose connection or cable defect	Loads with high peaks in combination with small batteries can cause low voltage errors.
				Battery voltage under 9V respectively 18.5 V	Recharge battery with battery charger, please change if battery is defect	
	52	A B	Output voltage too low (power line)	Voltage metering not in order (e.g. power lines not or not approximately connected or cut-outs of the power line defect)	- Take comparative measurement with circuit analyser at EFOY-power plug (two outer pins) and battery - check cut-outs of the connecting cables - check loose connection or cable defect	
				Battery voltage between 16 V and 18.5V -> no detection if 12 V or 24 V application is connected	Recharge battery with battery charger, please change if battery is defect	
				Battery voltage under 9V respectively 18.5 V	Recharge battery with battery charger, please change if battery is defect	
	Battery voltage high. If applicable, please check additional charging devices.	51	A B F	Battery voltage too high (sense line)	Voltage metering of the battery is not in order (e.g. sense line not or not correctly connected or cut-out of sense line defect)	
Parallel connected charge controller hoist battery voltage too high or reacts to slowly					- Check external charge controller - Possibly caused by alternator (inside of the vehicle)	
Battery voltage over 16 respectively 30.5 V (Freeze protection up to 17 V / 32 V)					Check external charge controller, if necessary disconnect to avoid damage	
53		A B F	Output voltage too high (power line)	Output voltage metering is not in order	- Take comparative measurements with a multimeter at the EFOY power pins (two outer pins) and the battery - check loose connection or cable defect	
				Parallel connected charge controller hoist battery voltage too high or reacts to slowly	- Check external charge controller - Possibly caused by alternator (inside of the vehicle)	
				Battery voltage over 16 V respectively 30.5 V (Freeze protection up to 17 V / 32 V)	Check external charge controller, if necessary disconnect to avoid damage	

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A restart is required. If the error occurs again please contact EFOY hotline or hotline@sfc.com. Press OK for restart.	70	A B R	Reservoir sensors alert illegitimate condition	Defect component	Shake system and press RESET If error should remain, repair required	Update current firmware version. If one system start is successful, the error counter is reset.
	71	A R B	No internal communication with internal reservoir possible	Defect reservoir or internal cable	Repair required	
	73	R	Reservoir sensor defect	Defect component	Repair required	
	75	R	Condensate at optical sensor	Illogical state	Repair required	
	80	R	Defect circuit board	Defect component	Repair required	
			Unit self-test failed	Defect component		
	83	R	Defect dc/dc converter	Defect component	Repair required	
	84	A R	Unit self-test failed	Defect component	Press RESET If error should remain, repair required	
Service is required. Protect device against frost! Please contact EFOY hotline or hotline@sfc.com.	76	P	Cumulative occurrence of error 70 and 72	Incorrect refilling of the reservoir	Repair required	
	83	R	Defect dc/dc converter	Defect component	Repair required	

text message	error Nr.	type of error	error description	possible cause of error	action	note
Check connection	72	A B R	Filling of the reservoir -> timeout	Tube inside the fuel cartridge adhered to the cartridge wall	Shake cartridge firmly --> press RESET	Please also test the actions regarding error 20 / 22 Update current firmware version
				Tank connection not fixed	Screw tank connection tightly --> press RESET	
				Defect component	Repair required	
UPDATE: DO NOT UNPLUG BATTERY	99	A	Firmware update is running			Do not disconnect system and battery, do not cut data interface connection
None Only displayed in ERROR-LOG	90	A	Freeze cycle succesful		No activity necessary	
	140	A	Anti freeze protection not possible	Anti freeze mode is blocked by previous error	Fix previous error	
	141	A	Heat exchanger to warm	Surrounding temperature to high	No activity necessary	
	173	A	Reservoir error was tolerated during no risk	Illogical state	No activity necessary	
	184	A	Successful self-test		No activity necessary	
Firmware out of date! Please update the firmware!	199	B W	Warning of outdated firmware	The installed firmware is one year older than the system time	Update the firmware	Only FW 17.06 and 17.07
Firmware corrupt update required	none	A B	An error occurred during the firmware update		Update the firmware via EFOY update tool (EUT) or updater	

text message	error Nr.	type of error	error description	possible cause of error	action	note
"check battery" or "check connection"	none	A B	Remote control is not communicating with the fuel cell	Remote control is connected to the wrong socket (Data interface)	Connect operation panel in socket "remote control"	
				Battery voltage lower than 8 V	Charge the battery with external charger, check cable if defect	
				Defect remote control	Connect another remote control. If error should remain, repair required	

Hybrid or RC in Display	none	B	Hybrid or Remote mode although not activated or not controlled	Unintentional activation	Deactivate: - via hyperterminal "remote off" - via operation panel in menu operating "mode" select "external control off" (a lock symbol occurs in the display)	
				Humidity at cable or board --> oxidised cable or oxidised board connections	- Check if the system was or is in contact with humidity --> dry fuel cell - If external cable is oxidised --> change cable - System defect --> Repair required	
				Socket "Data Interface" receives signal on Pin 7 / 8	Check cable in socket "Data Interface". Check cable.	

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