

Troubleshooting

General remarks

The digital power sources are equipped with an intelligent safety system. This means that apart from the fuse for the coolant-pump, it has been possible to dispense with melting-type fuses entirely. After a possible malfunction or error has been remedied, the power source can be put back into normal operation again without any melting-type fuses having to be changed.



Warning! An electric shock can be fatal. Before opening up the machine

- Switch the mains switch to the “O” position
- Unplug machine from the mains
- Put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again
- Using a suitable measuring instrument, check to make sure that electrically charged components (e.g. capacitors) have been discharged



Caution! Inadequate PE conductor connections can cause serious injury and damage. The housing screws provide a suitable PE conductor connection for grounding (earthing) the housing and must NOT be replaced by any other screws that do not provide a reliable PE conductor connection.

Displayed service codes

If any error message that is not described here appears on the displays, then the fault is one that can only be put right by a service technician. Make a note of the error message shown in the display, and of the serial number and configuration of the power source, and get in touch with our after-sales service, giving them a detailed description of the error.

-St | oP-

Where the power source is being operated with a robot interface or a field bus

Cause: Robot not ready

Remedy: Initialise “Robot ready” signal, initialise “Source error reset” signal (N.B. “Source error reset” only available in conjunction with ROB 5000 and field-bus coupler for robot control)

dsP | A21

Can only occur when power sources are being operated in parallel or in “Twin” mode

Cause: The power source is configured for either parallel operation (set-up parameter P-C is set to “ON”) or for TimeTwin Digital (set-up parameter T-C is set to “ON”). However, the LHSB link has been disconnected, or has become faulty, while the power source was switched on.

Remedy: Dismiss the service code: Switch the power source off and back on again. If necessary, restore or repair the LHSB link.

dSP | Axx, dSP | Cxx, dSP | Exx, dSP | Sy, dSP | nSy

Cause: Fault in central control and regulation unit

Remedy: Contact After-Sales Service

Displayed service codes
(continued)

EFd | xx.x, EFd | 8.1

Cause: Fault in the wirefeed system (overcurrent in wirefeeder drive)
Remedy: Arrange the hosepack in as straight a line as possible; check that there are no kinks or dirt in the inner liner; check the contact pressure on the 2-roller (or 4-roller) drive

Cause: Wirefeeder motor is stuck or defective
Remedy: Check / change the wirefeeder motor

EFd | 8.2

Cause: Fault in the wirefeed system (overcurrent in drive of push-pull unit)
Remedy: Arrange the hosepack in as straight a line as possible; check the inner liner for kinks or soiling; check the contact pressure on the 2-roller or 4-roller drive of the push-pull unit

EFd | 9.1

Cause: External supply voltage: Supply voltage has dropped below the tolerance range

Remedy: Check the external supply voltage

Cause: Wirefeeder motor is stuck or defective

Remedy: Check / change the wirefeeder motor

EFd | 9.2

Cause: External supply voltage: Supply voltage has risen above the tolerance range

Remedy: Check the external supply voltage

EFd | 12.1

Cause: No actual rotational speed value from the wirefeeder motor

Remedy: Check the actual-value pick-up and the cable connections to and from it, and replace if necessary

EFd | 12.2

Cause: No actual rotational speed value from the motor of the push-pull unit

Remedy: Check the actual-value pick-up and the cable connections to and from it, and replace if necessary

EFd | 15.1 Wire buffer not reached

Cause: counter lever on main wirefeeder open

Remedy: close counter lever on main wirefeeder
Acknowledge service code by pressing "feeder inching" button

Cause: main wirefeeder slipping

Remedy: check wearing parts on wire feeder
use suitable feed rollers
decrease wire braking force
increase contact pressure on main wirefeeder
acknowledge service code by pressing "Feeder inching" button

Cause: end of wire reached

Remedy: check whether sufficient wire available
acknowledge service code using "Feeder inching" button

Displayed service codes
(continued)

EFd | 15.2 Wire buffer exceeded

Cause: counter lever on push-pull unit open
Remedy: close counter lever on push-pull unit
acknowledge service code by pressing "feeder inching" button

Cause: push-pull unit slipping
Remedy: check wearing parts for wire inching
use suitable feed rollers
increase contact pressure on the push-pull unit
acknowledge service code by pressing the "Feeder inching" button"

Cause: arc not igniting
Remedy: select wire diameter and material type in accordance with material used
check earth connection
acknowledge service code by pressing "Feeder inching" button

Cause: end of wire reached
Remedy: check whether sufficient wire available
acknowledge service code using "Feeder inching" button

EFd | 15.3 No wire buffer available

Cause: connection to wire buffer missing
Remedy: check connection to wire buffer

EFd | 30.1

Cause: LHSB connection to power source missing
Remedy: check LHSB connection to power source

EFd | 30.3

Cause: LHSB connection to CMT drive unit missing
Remedy: check LHSB connection to CMT drive unit

EFd | 31.1

Cause: CMT drive unit - rotor calibration failed
Remedy: switch power source off and on again; if the service code "EFd | 31.1" remains, switch off power source, disengage CMT drive unit and switch power source back on again; if still unsuccessful, contact After-Sales Service

EFd | 31.2

Cause: CMT drive unit - rotor calibration running
Remedy: wait for rotor calibration to finish

EiF XX.Y

The values XX and Y should be taken from the Operating Instructions for Robot Interface

Cause: Interface error
Remedy: See Operating Instructions for Robot Interface

Err | 049

Cause: Phase failure
Remedy: Check the mains fuse protection, the mains supply lead and the mains plug

Err | 050

Cause: Intermediate circuit-balance error
Remedy: Contact After-Sales Service

Displayed service codes
(continued)

Err | 051

Cause: Mains undervoltage: The mains voltage has dropped below the tolerance range

Remedy: Check the mains voltage

Err | 052

Cause: Mains overvoltage: The mains voltage has risen above the tolerance range

Remedy: Check the mains voltage

Err | 054

Cause: "Sticking" of the wire in the solidifying weld pool

Remedy: Cut off the sticking wire-tip; there is no need to dismiss this error message

Err | 056

Cause: The "Wire-end check" option has detected the end of the welding wire

Remedy: Insert a new wire spool and feed the wire into the hosepack; dismiss Err | 056 by pressing the Store button (21)

Cause: Additional fan filter of the VR 1500 - 11 / 12 / 30 is contaminated -air supply for the additional fan is no longer sufficient for cooling the power electronics -the power electronics temperature switch has responded

Remedy: Clean filter or replace; dismiss Err | 056 by pressing the Store button (21)

Cause: Excessive ambient temperature on the VR 1500 - 11 / 12 / 30

Remedy: Reduce ambient temperature, if necessary position and operate welding machine at a cooler location; dismiss Err | 056 by pressing the Store button (21)

Cause: Excessive motor current on the VR 1500 - 11 / 12 / 30, e.g. due to wire feed problems or an adequately dimensioned feed

Remedy: Check wire feed conditions, rectify errors; dismiss Err | 056 by pressing the Store button (21)

Cause: Wire feeder cover VR 1530 open or interlock release handles not snapped into place

Remedy: Close wire feeder cover VR 1530 properly, dismiss Err | 056 by pressing the Store button (21)

Err | 062

„E62“ is displayed simultaneously on remote controller TP 08

Cause: Overheating of remote controller TP 08

Remedy: Allow remote controller TP 08 to cool down

Err | 069

Cause: Illegal mode change during welding

Remedy: Re-start welding procedure

Err 70.X

Cause: Fault in digital gas sensor

Err 70.1 ... Gas sensor not found

Err 70.2 ... No gas

Err 70.3 ... Calibration error

Err 70.4 ... Solenoid valve faulty

Err 70.5 ... Solenoid valve not found

Remedy: Check gas supply

Displayed service codes
(continued)

Err 71.X

Set limits have been exceeded or have not been reached.

Cause: Err 71.1 ... Current limit exceeded
Err 71.2 ... Current limit not reached
Err 71.3 ... Voltage limit exceeded
Err 71.4 ... Voltage limit not reached

Remedy: Check quality of weld seam

Err | bPS

Cause: Fault in power module

Remedy: Contact After-Sales Service

Err | Cfg

Can only occur when power sources are being operated in parallel or in "Twin" mode

Cause: Power source is configured for parallel operation (set-up parameter P-C is set to "ON") or TimeTwin Digital (set-up parameter T-C is set to "ON"). However, after being switched on, the power source was unable to establish an LHSB link (LHSB link was previously detached or became faulty).

Remedy: Dismiss the service code: Switch the power source off and back on again. If necessary, restore or repair the LHSB link.

Err | IP

Cause: Primary overcurrent

Remedy: Contact After-Sales Service

Err | PE

Cause: The earth fault-current watchdog has triggered the safety cut-out of the power source.

Remedy: Switch off the power source, wait for 10 seconds and then switch it on again. If you have tried this several times and the error keeps on occurring - contact After-Sales Service.

Err tJo

Cause: Jobmaster temperature sensor faulty

Remedy: Contact After-Sales Service

hot | H2O

Cause: Thermostat on cooling unit has been tripped

Remedy: Wait until the end of the cooling phase, i.e. until "Hot | H2O" is no longer displayed. ROB 5000 or field-bus coupler for robot control: Before resuming welding, initialise the "Source error reset" signal.

no | Arc

Cause: Arc-break

Remedy: Shorten the wire stickout; press the torch trigger repeatedly; clean the surface of the workpiece

no | GAS

Cause: The "Gas watchdog" option has detected that there is no gas pressure

Remedy: Connect a new gas cylinder and open the gas cylinder valve/pressure regulator;
Dismiss no | GAS by pressing the Store button

Displayed service codes
(continued)

no | IGn

Cause: "Ignition time-out" function is active: No current started flowing before the length of wire specified in the set-up menu had been fed. The safety cut-out of the power source has been triggered.
Remedy: Shorten the wire stickout; press the torch trigger repeatedly; clean the surface of the workpiece; if necessary, increase the setting in "Set-up menu: Level 2" for the length of wire that is fed before the safety cut-out is triggered.

no | H2O

Cause: Cooling-unit flow watchdog has been triggered
Remedy: Check the cooling unit; if necessary, top up the coolant and/or vent the water forward-flow hose as described in "Putting the cooling unit into service". Then dismiss the error by pressing the "Store" button.

no | Prg

Cause: No pre-programmed program has been selected
Remedy: Select a pre-programmed program

r | E30

Cause: r-Alignment: There is no contact with the workpiece.
Remedy: Connect the grounding (earthing) cable; ensure a tight connection

r | E31

Cause: r-Alignment: Procedure has been interrupted by repeated pressing of the torch trigger.
Remedy: Ensure a tight connection between the contact tube and the workpiece - press the torch trigger once only.

r | E32

Cause: r-Alignment: Grounding (earthing) cable, current cable or hosepack defective (value is below 0.5 mOhm or exceeds 30 mOhm)
Remedy: Check grounding (earthing) cable, current cable and/or hosepack, and change if necessary

r | E33, r | E34

Cause: r-Alignment: Poor contact between the contact tube and the workpiece.
Remedy: Clean the point of contact, tighten the contact tube, check the grounding (earthing) connection

tJO | xxx

At the same time, "E66" is displayed on the JobMaster
Remark: xxx stands for a temperature value

Cause: Overtemperature in Jobmaster welding torch
Remedy: Allow the torch to cool, then dismiss the error by pressing the "Store" button

tP1 | xxx, tP2 | xxx, tP3 | xxx, tP4 | xxx, tP5 | xxx, tP6 | xxx

Remark: xxx stands for a temperature value

Cause: Over-temperature in the primary circuit of the power source
Remedy: Allow the power source to cool down

tS1 | xxx, tS2 | xxx, tS3 | xxx

Remark: xxx stands for a temperature value

Cause: Over-temperature in the secondary circuit of the power source
Remedy: Allow the power source to cool down

Power source - troubleshooting

tSt | xxx

Remark: xxx stands for a temperature value

Cause: Over-temperature in the control circuit

Remedy: Allow the power source to cool down

Power source does not function

Mains switch is ON, but indicators are not lit up

Cause: There is a break in the mains lead; the mains plug is not plugged in

Remedy: Check the mains supply lead, make sure that the mains plug is plugged in

Cause: Mains outlet socket or plug is faulty

Remedy: Exchange faulty components

Power source does not function

Mains switch is ON, but indicators are not lit up

Cause: Mains fuse is faulty

Remedy: Change the mains fuse

No welding current

Mains switch is ON, overtemperature indicator is lit up

Cause: Overloading; the duty cycle has been exceeded

Remedy: Do not exceed the duty cycle

Cause: Thermostatic cut-out system has been tripped

Remedy: Wait until the power source automatically comes back on after the end of the cooling phase

Cause: The fan in the power source is defective

Remedy: Change the fan

No welding current

Mains switch is ON and indicators are lit up

Cause: Grounding (earthing) connection is wrong

Remedy: Check the grounding (earthing) connection and clamp for correct polarity

Cause: There is a break in the current cable in the welding torch

Remedy: Exchange the torch

The machine does not function when the torch trigger is pressed

Mains switch is ON and indicators are lit up

Cause: The control plug is not plugged in

Remedy: Plug in the control plug

Cause: The welding torch or torch control lead is defective

Remedy: Exchange the torch

The machine does not function when the torch trigger is pressed

Mains switch is ON and indicators are lit up

Cause: the interconnecting hosepack is defective or not connected properly (not in the case of TPS 2700)

Remedy: check interconnecting hosepack

No shielding gas

All other functions are OK

Cause: The gas cylinder is empty
Remedy: Change the gas cylinder

Cause: The gas pressure regulator is faulty
Remedy: Change the gas pressure regulator

Cause: The gas hose is not mounted, or is damaged
Remedy: Mount / change the gas hose

Cause: The welding torch is defective
Remedy: Change the welding torch

Cause: The gas solenoid valve is defective
Remedy: Change the gas solenoid valve

Poor welding properties

Cause: Incorrect welding parameters
Remedy: Check the settings

Cause: Poor grounding (earthing) connection
Remedy: Ensure good contact to workpiece

Cause: Not enough shielding gas, or none at all
Remedy: Check the pressure regulator, gas hose, gas solenoid valve, torch gas connection etc.

Cause: Welding torch is leaking
Remedy: Change the welding torch

Cause: Wrong contact tube, or contact tube is worn out
Remedy: Change the contact tube

Cause: Wrong wire alloy and/or wrong wire diameter
Remedy: Check the wire spool that has been inserted

Cause: Wrong wire alloy and/or wrong wire diameter
Remedy: Check the weldability of the base metal

Cause: The shielding gas is not suitable for this wire alloy
Remedy: Use the correct shielding gas

Irregular wirefeed speed

The welding wire forms a loop between the feed rollers and the wire inlet nozzle of the welding torch

Cause: The braking force has been set too high
Remedy: Loosen the brake

Cause: The borehole of the contact tube is too narrow
Remedy: Use a suitable contact tube

Cause: The wirefeed inner liner in the welding torch is defective
Remedy: Check the wire inner liner for kinks, dirt etc.

**Power source -
troubleshooting**
(continued)

Irregular wirefeed speed

The welding wire forms a loop between the feed rollers and the wire inlet nozzle of the welding torch

Cause: The wirefeed rollers are unsuitable for the wire being used

Remedy: Use suitable wirefeed rollers

Cause: The wirefeed rollers have the wrong contact pressure

Remedy: Optimize the contact pressure

The welding torch becomes very hot

Cause: The design dimensions of the torch are not sufficient for this task

Remedy: Respect the duty cycle and loading limits

Cause: Only on water-cooled machines: Water through-flow is insufficient

Remedy: Check the coolant level, through-flow rate, cleanliness of coolant etc.
