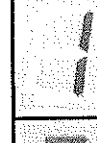
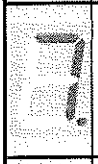
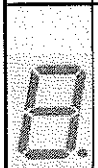
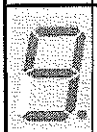
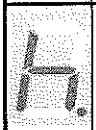
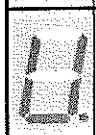
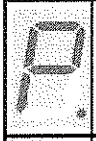
11.1 7-Segment-Display

Many sources of faults can be narrowed down with the diagnosis display.

Display (Code)	Explanation / Comment	Output Ready	Output Warning[2)]	Servo drive 631	635/637	637+	637f/638
 00h	no display any control voltage? external fuses ok?	off	off	☑	☑	☑	☑
 03h	system ready for operate drive ready, not active	on	off	☑	☑	☑	☑
 01h	drive ready for operate! DC link voltage within the limits, power stage active, fault-free			☑	☑	☑	☑
 12h	internal STOP with serial deactivating activate drive via serial interface	off	off	☑	☑	☑	☑
 82h	regulator of serial interface (bus interface) deactivated ! only if bus interface is integrated	off	off	☑	☑	☑	☑
 90h	deactivated with delay time for the brake deactivated via input. deactivated via serial command.	 on off	 off off	☑	☑	☑	☑
 92h	Active input is activated with switching on 24 V control voltage switch enable X10.**xx** switch on 0 V and after that 24 V	off	off	☑ X10.**7**	☑ X10.**22**	☑ X10.**22**	☑ X10.**22**
 46h	Under voltage of control voltage Power supply switched on? Power supply o.k ? internal fuse o.k.? control voltage < 17 V	off	off	☐	☑	☑	☑
 60h	Under voltage in DC-bus < Ua low threshold check power supply (power supply unit, wiring, fuse), check under voltage parameter	off	off	☑	☑	☑	☑
 DAh	feedback system error (e.g. resolver) wiring to encoder system ok? encoder system supply ok?	off	off	☑	☑	☑	☑
 F2h	I²t- overload of the drive does the control loop oscillate? P-amplification too high mechanics stiff? requirements too high? is warning /8/ evaluated?	1)	1)	☑	☑	☑	☑
 66H	overload of the motor I²t does the control loop oscillate? P-amplification too high mechanics stiff? requirements too high? is warning /8/ evaluated?	1)	1)	☑	☑	☑	☑

Display (Code)		Explanation / Comment	Output Ready	Output Warning[2]	Servo drive 631	635/637	637+	637f/638
	B6h	over temperature of the output stage (> 90°C) adequate cooling of the regulator? ambient temperature too high?	1)	1)	☑	☑	☑	☑
	3Eh	over voltage on DC bus ballast module ok? adequate ballast module?	1)	1)	☑	☑	☑	☑
	E0h	chassis shorting and short circuit due to hardware motor cabling ok? digital-loops setup ok? short circuit to chassis in the motor? braking resistor: ohm- value too low? try to start fresh! send in for repair	off	off	☑	☑	☑	☑
	FEH	WARNING! Overload of the regulator I²t or motor I²t or temp.-output stage too high. If no reaction within approx. 3sec.it switches off with signals /3/, /4/ or /5/. Signal /8/ clears when there is no more danger or it is switched off mechanics stiff? defective bearings; cold grease? reduce requirements and creep to next possible STOP	on	1)	☑	☑	☑	☑
	F6h	over temperature motor(NTC/PTC) check overload of the motor / cooling etc.	off		☑	☑	☑	☑
	2Eh	motor temperature too high check overload of the motor / cooling etc.	on	1)	☑	☑	☑	☑
	80h	ballast active Brake energy is removed			☑	☑	☑	☑
	38h	warning I²t ballast too high ballast resistance usage >90%			☑	☑	☑	☑
	7Ch	switch off ballast ballast resistance overloaded	on	1)	☑	☑	☑	☑
	6Ch	X 300 – Module not inserted or wrong inserted or defect X 300 testing	off	off	☐	☐	☑	☑
	6Eh	X 300 – setting wrong X 30 / X40 Counter-Configuration test in the EASYRIDER® Windows – Software			☐	☐	☑	☑
	1Ch	tracking window exceeded 3) only in operation mode position control, will be deleted with the next run-command			☑	☑	☑	☑

Display (Code)		Explanation / Comment	Output Ready	Output Warning[2)]	Servo drive 631	635/637	637+	637f/638
E.	1Eh	tracking error with switch off only in operation mode "position control"			☑	☑	☑	☑
1.	20h	limit switch + 3) limit switch + X10.**xx** on 0 Volt, from Firmware 6.16			☑ X10.8	☑ X10.14	☑ X10.14	☑ X10.14
1.	08h	limit switch - 3) limit switch-X10.**xx** on 0 Volt, from Firmware 6.16 3)			☑ X10.9	☑ X10.15	☑ X10.15	☑ X10.15
E.	9Eh	limit switch + / limit switch - both limit switch X10.**xx** on 0 Volt, from Firmware 6.16			☑ X10.8 X10.9	☑ X10.14 X10.15	☑ X10.14 X10.15	☑ X10.14 X10.15
9.	76h	memory-checksum-error try new start, store the value again	off	off	☑	☑	☑	☑
-1	62h	DC Bus Unterspannung < 100 V -			☑	☐	☐	☐
P.	4Eh	1: internal software error, Watchdog 2: blinking: BIAS software error 1: Firmware version check 2: Bias program error fix			☑ ☐	☑ ☐	☑ ☐	☑ ☑
A.	EEh	starting lockout RP SBT with 637f starting lockout STO1 and STO2 with 638 Terminal X290. 3/4 check with 637f TerminalX11. 1/4 check with 638			☐	☐	☐	☑
1.	24h	STO1 und STO2 Signale Difference>20 Seconds Switch Off /On Control Voltage			☐	☐	☐	☑ 638 only
5.	26h	X10.22 Quickstop Ramp active			☐	☐	☐	☑ 638 only
J.	42h	X10.22 low high slope missing			☐	☐	☐	☑ 638 only
n.	2Ah	Max. speed overload check speed limits resp. setpoint speed			☐	☐	☐	☑
P.	4Ah	CAN - Open 402 Sync Message error in Interpolated positioning mode -			☑ 6.19c	☐	☐	☑ 8.19d

Display	(Code)	Explanation Comment	Output Ready	Warning[2]	Servo drive 631	635/637	637+	637i/638
	9Ch	SSI – Encoder Error -			☐	☐	☐	☑ 8.21
	9Ch	CAN-BUS Error Flashing display Noise on bus or lane missing!			☐	☐	☐	☑ 8.33
	CEh	Profibus-Modul Error			☐	☐	☐	☑ 8.31
	30h	638 Active Delay time runs			☐	☐	☐	☑ 638 only
	8Eh	638 SAFETY- Parameter Ram Error			☐	☐	☐	☑ 638 only

1) Reaction to these errors **chapter:** "■ **Function diagrams from inputs and outputs**"

2) With configuration corresponding **chapter :** "■ **Operating modes and pin functions**"

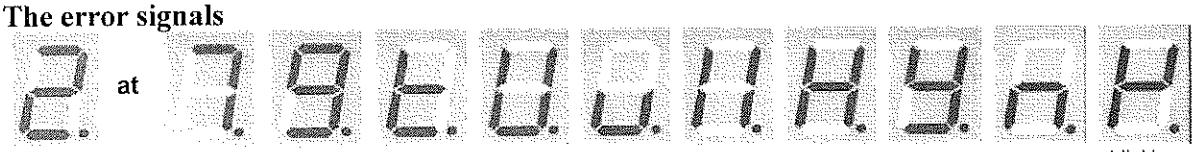
3) Operating mode "Position Control" only

The error signals are shown as long as there is control voltage (Us), also when the power (DC-Bus) is switched off for safety reasons.

11.2 Reset of a Drive Trouble

A general precondition for correct execution of the Reset is the elimination of the error cause.

The error signals



of the drive can be reset via:

1. **Control voltage OFF/ON,**
2. **the serial command "Drive Reset" 0x02**
   The host login must be occurred.
   The drive must be deactivated via the serial command "deactivate Drive" 0x00.
3. **the fieldbus-command " Drive Reset" 0x16 (22 decimal)**
   The host login must be occurred via the BUS command 0x01.The drive must be deactivated via the BUS command "deactivate Drive" 0x14.
   The fieldbus command "Drive Reset" with constant repetition of the fieldbus command 0x16 will be works-off only once.
   For further processing, it is necessary, meanwhile to send another control word (e.g. 0 status order).
4. **a 0 – 1 flank on input X10.11**
   Precondition:
   - The input X10.11 is with function 1"Reset drive fault" configured (EASYRIDER® Windows – Software)
   - There is no host login.
   - The input Active,(X10.22) is inactive (0V)
   - The signal must be present min. 250 ms

Notice !!
After remove of the tracking error deactivation  the warning message  (tracking error) is active up to the next move command.

The **error signal**  (releasing before ready) can be reset by deactivation the drive.