

Коды неисправностей системы управления вспомогательным тормозом-замедлителем от блока EST42.								
ZF EST 42 fault code (J1939) SPN	ZF EST 42 fault code (J1939) FMI	Fault location	Местоположение ошибки	Fault description	Описание ошибки	Remedial action	Меры по устранению	Pin ECU ZF EST 42
4001	5	Electrical defect on accumulator charge valve (short circuit to ground)	Электрические дефект на клапане зарядки аккумулятора (короткое замыкание на землю)	IT-ECU control of accumulator charge valve inactive, response time increasing Wiring defective, accumulator charge valve (magnetic coil) defective, IT-ECU output defective		Check of wiring between IT-ECU and accumulator charge valve, check accumulator charge valve (Internal resistance app. 130 Ohm at room temperature; measure on IT-ECU connector), possibly IT-ECU replacement		AD1, Pin 1
4001	6	Electrical defect on accumulator charge valve (short circuit to + / battery)	Электрические дефект на клапане зарядки аккумулятора (короткое замыкание на + / батареею)	IT-ECU control of accumulator charge valve inactive, response time increasing (line permanently active due to short circuit). Wiring defective, accumulator charge valve (magnetic coil) defective, IT-ECU output defective		Check of wiring between IT-ECU and accumulator charge valve, check accumulator charge valve (Internal resistance app. 130 Ohm at room temperature; measure on IT-ECU connector), possibly IT-ECU replacement		AD1, Pin 1
4003	5	Electrical defect at "Intarder pilot lamp" (short circuit to ground)	Электрический дефект в "Сигнальной лампе Интардера" (короткое замыкание на землю)	IT-ECU control of "Intarder pilot lamp" inactive, Intarder braking not displayed. Wiring defective, lamp defective, IT-ECU output defective		Check of wiring between IT-ECU and Intarder pilot lamp, check lamp, possibly IT-ECU replacement		AD2, Pin 29
4003	6	Electrical defect at "Intarder pilot lamp" (short circuit to + / battery)	Электрический дефект в "Сигнальной лампе Интардера" (короткое замыкание на + / батареею)	IT-ECU control of "Intarder pilot lamp" inactive, Intarder braking not displayed (line continuously active due to short circuit, i.e. lamp continuously activated).Wiring defective, IT-ECU output defective.		Check of wiring between IT-ECU and Intarder pilot lamp, possibly IT-ECU replacement		AD2, Pin 29
4005	5	Electrical defect of brake light control (short circuit to ground)	Электрическая неисправность реле управления стоп-сигналами (короткое замыкание в землю)	IT-ECU control of brake light resp. brake light relay inactive. Wiring defective, brake light resp. brake light relay defective, IT-ECU output defective		Check of wiring between IT-ECU and brake light resp. brake light relay, check light resp. relay, possibly IT-ECU replacement		AD3, Pin 2
4005	6	Electrical defect of brake light control (short circuit to + / battery)	Электрическая неисправность реле управления стоп-сигналами (короткое замыкание в + / батарееи)	IT-ECU control of brake light resp. brake light relay inactive (line continuously active due to short circuit, i.e. brake light continuously activated). Wiring defective, IT-ECU output defective		Check of wiring between IT-ECU and brake light resp. brake light relay, check light resp. relay, possibly IT-ECU replacement		AD3, Pin 2
4007	5	Electrical defect on output "cruise control switch-off" (short circuit to ground)	Электрические дефект выхода управления "выключения круиз-контроля" (короткое замыкание в землю)	IT-ECU control of digital "cruise control switch-off" inactive, cruise control deactivation with brake step operation not possible. Wiring defective, controlled relais resp. ECU input defective, IT-ECU output defective		Check wiring between IT ECU and relay resp. activated ECU, check relay resp. activated ECU, possibly IT-ECU replacement		AD6, Pin 52
4007	6	Electrical defect on output "cruise control switch-off" (short circuit to + / battery)	Электрические дефект выхода управления "выключения круиз-контроля" (короткое замыкание в + / батарееи)	Intarder-ECU control of digital "cruise control switch-off" inactive (cruise control is continuously deactivated by short circuit). Wiring defective, controlled ECU input defective, IT-ECU output defective		Check wiring between IT ECU and relay resp. activated ECU, check relay resp. activated ECU, possibly IT-ECU replacement		AD6, Pin 52
4008	5	Power supply of brake level selector defective (short circuit to ground)	Питание селектора уровня торможения неисправено (короткое замыкание в землю)	IT-ECU control of brake level selector inactive, Intarder activation via brake level selector no longer possible. Wiring defective, brake level selector defective, IT-ECU output defective.		Check of wiring between IT-ECU and brake level selector, check brake level selector, possibly IT-ECU replacement		AD4, Pin 30
4008	6	Power supply of brake level selector defective (short circuit to + / battery)	Питание селектора уровня торможения неисправено (короткое замыкание в + / батарееи)	IT-ECU permanently controls the brake lever selector, Intarder functions not affected (line permanently active due to short circuit). Wiring defective, brake level selector defective, IT-ECU output defective.		Check of wiring between IT-ECU and brake level selector, check brake level selector, possibly IT-ECU replacement.		AD4, Pin 30
4009	5	Electrical defect of proportional solenoid valve control (AIP) (short circuit to ground)	Электрическая неисправность пропорционального электромагнитного клапана управления (AIP) (короткое замыкание в землю)	IT-ECU deactivates the Intarder; Intarder no longer available. Wiring defective, proportional solenoid valve (magnetic coil) defective, IT-ECU output defective		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		Pin: AIP, Pin 4
4009	6	Electrical defect of proportional solenoid valve control (AIP) (short circuit to + / battery)	Электрическая неисправность пропорционального электромагнитного клапана управления (AIP) (короткое замыкание в + / батарееи)	IT-ECU deactivates the Intarder; Intarder no longer available. Wiring defective, proportional solenoid valve (magnetic coil) defective, IT-ECU output defective.		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		AIP, Pin 4

4009	10	Electrical defect of proportional solenoid valve control (AIP) (interrupt / open circuit)	Электрическая неисправность пропорционального электромагнитного клапана управления (AIP) (обрыв / незамкнутый контур)	IT-ECU deactivates the Intarder; Intarder no longer available. Wiring defective, proportional solenoid valve (magnetic coil) defective, IT-ECU output defective.		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		AIP, Pin 4 ADM1, Pin 3
4009	9	Electrical defect of proportional solenoid valve control (AIP) (resistance faulty)	Электрическая неисправность пропорционального электромагнитного клапана управления (AIP) (неправильное сопротивление)	IT-ECU deactivates the Intarder; Intarder no longer available. Wiring defective, proportional solenoid valve (magnetic coil) defective, IT-ECU output defective.		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		AIP, Pin 4 ADM1, Pin 3
4010	5	Electrical defect of cut off channel of proportional solenoid valve (ADM1) (short circuit to ground)	Электрические неисправности отсечного канала пропорционального электромагнитного клапана(ADM1) (короткое замыкание в землю)	IT-ECU deactivates the Intarder; Intarder no longer available (line permanently active due to short circuit). Wiring defective, proportional solenoid valve (magnetic coil) defective, IT-ECU output defective		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		ADM1, Pin 3
4010	6	Electrical defect of cut off channel of proportional solenoid valve (ADM1) (short circuit to + / battery)	Электрические неисправности отсечного канала пропорционального электромагнитного клапана(ADM1) (короткое замыкание в + / батареи)	IT-ECU deactivates the Intarder; Intarder no longer available. IT-ECU deactivates the Intarder; Intarder no longer available.		Check wiring between Intarder ECU and proportional solenoid valve, check proportional solenoid valve (internal resistance: app. 20 Ohm at -40 °C to app. 40 Ohm at 130 °C; measure on IT-ECU connector), possibly IT-ECU replacement		ADM1, Pin 3
4012	4	Failure of output shaft speed signal	Ошибка сигнала оборотов на выходе	Current limitation to 250 mA caused by the IT-ECU, Bremsomat no longer available actual retarder torque (ERC1, Byte 2) = FEh, intended retarder torque (ERC1, Byte 3) = FEh, maximum available retarder torque (ERC1, Byte 8) = FEh. Wiring defective, sensor defective, terminating resistor of CAN-bus defective, transmission ECU resp. tachograph defective, speed signal from tachograph faulty or not available, IT-ECU input defective		* speed signal via ETC1 resp. TCO1: Check CAN-bus wiring, check terminating resistor, otherwise transmission ECU resp. tachograph is defective * speed signal via EF1: Check wiring, sensor, tachograph signal, possibly IT-ECU replacement. Error detection: vehicle with CAN transmission ECU (ETC1) resp. CAN tachograph (TCO1): if no ETC1 resp. TCO1 message has been received in this operating cycle, no ETC1 resp. TCO1 error is present in fault memory and vehicle speed > 20 km/h (plausibility check) * vehicle with CAN tachograph: if no TCO1 message has been received in this operating cycle, no TCO1. error is present in fault memory and vehicle speed > 20 km/h (plausibility check) f speed jump of > 200 rpm to <		EF1, Pin 8 oder CANF-H: 22 CANF-L: 49 VMHF: 24
4013	10	Electrical defect of temperature sensing (interrupt / open circuit or short circuit to + / battery)	Электрический дефект замера температуры (обрыв / незамкнутый контур или короткое замыкание на + / батареи)	IT-ECU limits the brake power to a max. permitted value of 100 kW. Wiring defective, sensor defective, IT-ECU input defective.		Check of wiring between IT-ECU and temperature sensor, check temperature sensor (measure resistance on IT-ECU connector: app. 35 kOhm at 20°C to app. 3.5 kOhm at 80°C), possibly IT-ECU replacement. Error detection: with ignition ON: after detection of an engine speed or output shaft speed and after an additional safety period (30 sec if there is no change of the resistance value; extension to 60 sec in case of slight changes) * after ignition ON: always Resistance measurement and plausibility check with ignition ON		ER1, Pin 9
4013	7	Electrical defect of temperature sensing (short circuit to ground)	Электрический дефект замера температуры (короткое замыкание на землю)	IT-ECU limits the brake power to a max. permitted value of 100 kW. Wiring defective, sensor defective, IT-ECU input defective.		Check of wiring between IT-ECU and temperature sensor, check temperature sensor (measure resistance on IT-ECU connector: app. 35 kOhm at 20°C to app. 3.5 kOhm at 80°C), possibly IT-ECU replacement.		ER1, Pin 9
4014	2	Defective diagnosis circuit of proportional solenoid valve (control unit / Intarder-ECU internal) (below lowest limit)	Дефект диагностики цепи пропорционального электромагнитного клапана (блок управления / внешний ЭБУ Интардера) (ниже нижнего предела)	IT-ECU deactivates the Intarder, Intarder no longer available. Defective readback-current circuit of proportional solenoid valve.		IT-ECU replacement		-

4014	1	Defective diagnosis circuit of proportional solenoid valve (control unit / Intarder-ECU internal) (above highest limit)	Дефект диагностики цепи пропорционального электромагнитного клапана (блок управления / внешний ЭБУ Интардера) (выше наивысшего предела)	IT-ECU deactivates the Intarder, Intarder no longer available. Defective readback-current circuit of proportional solenoid valve.		IT-ECU replacement		-
4047	10	Terminal 30 (+) interruption	Клемма 30 (+) обрыв	functional: * during operation: no response * with ignition OFF: no "after run mode", i.e. no fault memory and no operating hours counter stored * with ignition ON again: incorrect fault memory and operating hours counter read from EEPROM. Wiring defective, fuse of terminal 30 defective.		Check power supply of Intarder ECU (wiring), check fuse of terminal 30. Error detection when: how: with voltage at terminal 15 higher than 16.0 V digital monitoring of terminal 30 (if voltage at terminal 30 rises above 15.6 V it is considered OK; if the voltage drops below 6.1 V it is not considered to be OK).		VPE1: Pin 54 VPE2: Pin 55
4015	1	Terminal 15 (+) overvoltage	Клемма 15 (+) повышенное напряжение	IT-ECU deactivates the Intarder, Intarder no longer available. Vehicle supply voltage too high (higher than 36 V).		Check vehicle supply voltage (battery, generator).		VPI1: Pin 53 VPI2: Pin 31
4015	2	Terminal 15 (+) undervoltage	Клемма 15 (+) пониженное напряжение	IT-ECU deactivates the Intarder, Intarder no longer available. Vehicle supply voltage too low (lower than 17 V).		Check vehicle supply voltage (battery, generator).		VPI1: Pin 53 VPI2: Pin 31
4016	3	Brake level selector inputs not plausible.	Селектор уровня торможения, входной сигнал не правдоподобен.	IT-ECU selects the braking level according to the detected, active lines, possibly Bremsomat not available. Wiring defective, brake level selector defective, IT-ECU inputs defective.		Check of wiring be replacement. Error detection when:if actual input line combination is not plausible; how: Plausibility check of the input line combinations.		ED1, Pin 15 ED2, Pin 42 ED3, Pin 16 ED4, Pin 43 ED5, Pin 17 ED6, Pin 44
4017	0	Operating hours counter loss	Счетчик часов эксплуатации потерян	Operation hours counter cannot be read from EEPROM, IT-ECU resets the counter to zero. IT-ECU (EEPROM) defective, service work on wiring, battery or IT-ECU with ignition ON, extreme voltage drop during engine start.		Delete error memory, then switch ignition OFF and ON, if error appears again, replace Intarder ECU, otherwise everything OK.		-
4018	0	Error memory loss	Память ошибок потеряна	Error memory cannot be read from EEPROM, IT-ECU rejects the "old" error memory contents.		Delete error memory, then switch ignition OFF and ON, if error appears again, replace Intarder ECU, otherwise everything OK.		
4022	0	Defect in INTARDER control unit (IT-ECU)	Неисправен блок управления Интардером (IT-ECU)	IT-ECU deactivates the Intarder, Intarder no longer available.		IT-ECU replacement.		
4023	3	CAN-message TSC1 from braking system faulty/not received (SAE J1939)	CAN сообщение TSC1 from braking system дефектное/не получено (SAE J1939)	IT-ECU deactivates the Intarder, Intarder no longer available. Wiring defective, terminating resistor of CAN-bus defective, ABS/EBS defective.		Check ABS/EBS, check CAN bus lines, check CAN terminating resistor. Error detection, when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 and 30.0 V. how: Timeout monitoring of message (timeout: 150 ms when active)		CANF-H: 22 CANF-L: 49 VMHF: 24
4024	0	functional: no direct error response, no requests or information can be sent to other controllers, i.e. no downshift request to Astronic	функция: нет прямого ответа об ошибке, либо запросы или данные могут быть отправлены с других контроллеров, например. запрос не переключаться в пониженную передачу Astronic	CAN bus load too high, terminating resistor of CAN-bus defective, EMC interference.		Check CAN bus load (rule-of-thumb: up to 50-60 % OK), check terminating resistor. Error detection, when: After ignition ON and 5 sec error detection is activated. Errors detected when voltage at terminal 15 between 20.0 V and 30.0 V. Suppression of error detection in case of "CAN BusOff" or "Communication error of CAN messages":		CANF-H: 22 CANF-L: 49 VMHF: 24
4025	9	CAN-BusOff. IT-ECU deactivates the Intarder, Intarder no longer available.	CAN-шина выключена. IT-ECU деактивировал Интардер, Интардер больше не доступен.	CAN wiring defective (short-circuit to plus, short-circuit to ground, short-circuit between CAN lines, interrupt of a CAN line), an ECU connected to CAN bus defective.		Check CAN bus line, check all ECUs of CAN bus. Error detection Error detection, when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. how: Monitoring BusOff-Flag of CAN module (microcontroller)		CANF-H: 22 CANF-L: 49 VMHF: 24
4026	4	CAN-message EBC1 faulty/not received (SAE J1939). functional: IT-ECU deactivates the Intarder, Intarder no longer available.	CAN сообщение EBC1 дефектное/не получено (SAE J1939). функция: IT-ECU деактивировал Интардер, Интардер больше не доступен.	Wiring defective, terminating resistor of CAN-bus defective, ABS/EBS defective		Check ABS/EBS, check CAN bus line, check terminating resistor. Error detection, when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. how: Timeout monitoring of message (timeout: 600 ms)		ANF-H: 22 ANF-L: 49 MHF: 24

4027	0	Communication error of CAN messages (acknowledge error)	Ошибка связи CAN сообщений (примите во внимание ошибки)	No direct error response, no requests or information to other controllers, i.e. no downshift request to Astronic. CAN wiring defective (interrupt / open circuit), terminating resistor of CAN-bus defective.		Check CAN bus line, check terminating resistor. Error detection, when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. how: Monitoring Error warning flag of CAN module (microcontroller).		CANF-H: 22 CANF-L: 49 VMHF: 24
4028	4	CAN-message EEC1 faulty/not received (SAE J1939)	CAN сообщение EEC1 дефектное/не получено (SAE J1939)	Error response, functional: * engine_speed: Limitation of the brake power to a max. permitted value of 350 kW, downshifting request not possible * drivers_demand: Accelerator pedal is assumed as not activated, redundancy over "AP low idle switch" EEC2. If driver' demand fails, no Bremsomat, if both signals failed, no switching off due to load. Wiring defective, terminating resistor of CAN-bus defective, error in EDC		Check EDC, check CAN bus line, check terminating resistor. Error detection, when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. how: Timeout monitoring of message (timeout: 1 sec) and of the signals (timeout: 1 sec).		CANF-H: 22 CANF-L: 49 VMHF: 24
4029	4	CAN-message TCO1 faulty/not received (SAE J1939)	CAN сообщение TCO1 дефектное/не получено (SAE J1939)	Error response, functional: * tachograph_output_shaft_speed : Current limitation to 250 mA caused by the IT-ECU, Bremsomat no longer available, no integration into the service brake; CAN bus: actual retarder torque (ERC1, Byte 2) = FEh, intended retarder torque (ERC1, Byte 3) = FEh, maximum available retarder torque (ERC1, Byte 8) = FEh. Wiring defective, terminating resistor of CAN-bus defective, tachograph defect.		Check tachograph, check CAN-bus line, check terminating resistor. Error detection. when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 and 30.0 V and if in this operating cycle at least one TCO1 message is received, or if a passive TCO1 error is available.; how: Timeout monitoring of message (timeout: 1 sec) and of the signals (timeout: 1 sec)		CANF-H: 22 CANF-L: 49 VMHF: 24
4031	4	CAN-message CCVS faulty/not received (SAE J1939)	CAN сообщение CCVS дефектное/не получено (SAE J1939)	Error response. functional: * wheel-based vehicle speed: Plausibility check of output shaft speed (EF1) not possible. Wiring defective, terminating resistor of CAN-bus defective, error in EDC		Check EDC, check CAN bus line, check terminating resistor. Error detection. when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. Errors are only detected if it is not possible to read an output shaft speed from CAN (usually only with vehicles with connected EF1) and if no appropriate CAN error is present in fault memory. how: Timeout monitoring of message (timeout: 1 sec) and of the signal (timeout: 1 sec)		CANF-H: 22 CANF-L: 49 VMHF: 24
4033	4	CAN-message ETC1 faulty/not received (SAE J1939)	CAN сообщение ETC1 дефектное/не получено (SAE J1939)	Error response functional: CAN bus: * output shaft speed: Current limitation to 250 mA caused by the IT-ECU, Bremsomat not available, no integration in service brake actual retarder torque (ERC1, Byte 2) = FEh, intended retarder torque (ERC1, Byte 3) = FEh, maximum available retarder torque (ERC1, Byte 8) = FEh. Wiring defective, terminating resistor of CAN-bus defective, error in transmission ECU (TCU)		Check transmission ECU (TCU), check CAN bus line, check terminating resistor. Error detection when: After ignition ON and after 5 sec error detection is activated. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V and if in this operating cycle at least one ETC1 message is received, or if a passive ETC1 error is stored in error memory. how: Timeout monitoring of message (timeout: 1 sec) and of the signal (timeout: 1 sec)		CANF-H: 22 CANF-L: 49 VMHF: 24
4050	4	CAN-message TSC1 from brake level selector faulty/not received (SAE J1939) (from version 6009371097)	CAN сообщение TSC1 от селектора уровня торможения дефектное/не получено (SAE J1939) (from version 6009371097)	ECU does not execute CAN requests of the brake lever selector. Wiring defective, terminating resistor of CAN-bus defective, error in ECU with connected brake level selector		Check brake level selector with connected ECU, check CAN bus line, check terminating resistor. Error detection. when: After ignition ON and after 5 sec and if the IT-ECU just receives an active TSC1 message from brake level selector, error detection is active. Errors detected when voltage at terminal 15 between 20.0 V and 30.0 V. how: Timeout monitoring of message (timeout: 1 sec) and of the signal (timeout: 1 sec)		CANF-H: 22 CANF-L: 49 VMHF: 24

4058	4	CAN-message Prop_Msg_to_INT faulty/not received (SAE J1939 - proprietary) (from version 6009 371 097 / 040825)	CAN сообщение Prop_Msg_to_INT дефектное/не получено (SAE J1939 - proprietary) (from version 6009 371 097 / 040825)	Setting and clearing of Bremsomat via CAN is not possible. An active Bremsomat will be switched-off. Wiring defective, terminating resistor of CAN-bus defective, error in ECU with connected Bremsomat switch.		Check Bremsomat switch with connected ECU, check CAN bus line, check terminating resistor. Error detection. when: After ignition ON and after 5 sec and if the IT-ECU receives an Prop_Msg_to_INT, or a fault exists, error detection is active. Errors detected when voltage at terminal 15 is between 20.0 V and 30.0 V. how: Timeout monitoring of message (timeout: 1 sec) and of the signal (timeout: 1 sec)		CANF-H: 22 CANF-L: 49 VMHF: 24
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