

Chapter 12 List of the events/malfunctions and measures for trouble-shooting

Abbreviations and explanations:

SrvID	Service ID (EFAS service code)
EFT	Event fault type, error code in accordance with EU Regulation (EC) No. 2016/799
DTC	Diagnostic trouble code (standardized automotive error code)
dec	Decimal (base 10 numeral system)
hex	Hexadecimal numeral system with a base of 16 (using characters 0 to 9 and A to F)

12.1 EFT summary table

The following table provides an overview of the types of error code specified for smart tachographs in accordance with EU Regulation (EC) No. Set 2016/799.

The error code types appear on the printouts and in the downloaded data in hexadecimal (hex) format.

Table 16 — EFTs and corresponding SrvIDs

EFT (hex)	Meaning	SrvIDs
0x0x	General events	
0x00	No further details	⁹
0x01	Invalid card inserted	S7, S8, S117, S118, S140, S141, S142, S143
0x02	Smart-card conflict	S69
0x03	Time overlap	S9, S10
0x04	Driving without suitable smart-card	S67
0x05	Card inserted while driving	S11, S12
0x06	Last use of smart-card not fully completed	S13, S14
0x07	Speed infringement	S70
0x08	Power supply outage	S3, S6
0x09	Sensor data errors	S22, S23, S24, S25, S101
0x0A	Vehicle motion data conflict (IMS)	S83
0x0B	Time conflict (between GNSS and EFAS system clock)	S86
0x0C	Communication error with the remote communication equipment	S174
0x0D	Missing position data of the GNSS receiver	S171
0x0E	Communication error with external GNSS equipment	n.a.
0x1x	Security breach of the vehicle unit	
0x10	No further details	⁹
0x11	Authentication failure of the speed sensor	S28, S84
0x12	Failure to authenticate the tachograph card	S19, S20
0x13	Unauthorized replacement of the speed sensor	S29
0x14	Integrity error in the card data	S15, S16, S90, S91
0x15	Integrity error in the stored user data	S36, S71, S82, S106
0x16	Internal error during data transfer	S72
0x17	Unauthorized opening of the tachograph housing	S73
0x18	Hardware sabotage	S17, S18, S30, S68
0x19	GNSS manipulation detection	n.a.
0x1A	Authentication error of external GNSS equipment	n.a.
0x1B	Expired external GNSS equipment certificate	n.a.
0x2x	Security breach of the sensor	
0x20	No further details	S85
0x21	Authentication error	S27
0x22	Integrity error in the stored data	S26
0x23	Internal data transfer error	S75

⁹ EFTs without proper SrvID are not supported by EFAS

EFT (hex)	Meaning	SrvIDs
0x24	Unauthorized opening of the housing	S76
0x25	Hardware sabotage	S77
0x3x	Vehicle unit error	
0x30	No further details	
0x31	Vehicle unit internal error	S35, S41, S42, S43, , S48, S81, S87, S92, S94, S95, S96, S97, S98, S99, S103, S105, S108, S110, S111, S112, S113, S114, S119
0x32	Printer error	S38
0x33	Display error	S44
0x34	Download error	S74
0x35	Sensor error	S45, S31
0x36	Internal GNSS receiver	S170
0x37	External GNSS equipment	n.a.
0x38	Remote communication equipment	S173
0x39	ITS interface	S175
0x4x	Card error	
0x40	No further details	S39, S40
0x5x	Reserved for future use	
0x6x	Reserved for future use	
0x7x	Reserved for future use	
0x8x	Vendor-specific events	
0x80	Software update	S107
0x81	Authorized opening of the tachograph housing	S66
0x82	Temperature exceeded	S80
0x9x	Vendor-specific faults	

12.2 Overview of Service IDs

The following table lists all events and faults with their meaning in a running order of the service ID code. In the column “Description and trouble-shooting” you will find tips on the causes of events and malfunctions, as well as information regarding how EFAS detects these events and malfunctions.

The measures provide you with clues on how to isolate the cause of the fault, and they indicate the options available for trouble-shooting in the workshop. However, completeness of the causes and measures listed cannot be assured owing to the variety of vehicle models and components of the tachograph system.

Table 17 — Overview of the events/malfunctions and measures for trouble-shooting

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S1 ¹⁰	--	80 00 002007	---	<p>Meaning / Cause: The supply voltage of the motion sensor exceeds the maximum permissible value of 9V. EFAS checks this voltage cyclically several times per second.</p> <p>Measures: Measure the supply voltage of the motion sensor between the pins B1 and B2.</p>
S2 ¹⁰	--	80 00 002003	---	<p>Meaning / Cause: The supply voltage of the motion sensor is below the minimum permissible value of 6.5V. EFAS checks this voltage cyclically several times per second.</p> <p>Measures: Measure the supply voltage of the motion sensor between the pins B1 and B2.</p>

¹⁰ The EFT for this event or the malfunction is not stored to the mass memory in the CALIBRATION operating mode. Information appears in the display with the specification of the SrvID that this event or malfunction has been detected for a short duration.

¹¹ xx minutes: Pre-warning time in minutes; can be configured via RDI parameters.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S3 ¹⁰	08	80 00 002004	!≠ Interruption of power supply	<p>Meaning / Cause: An interruption of the supply voltage of the motion sensor longer than 200 ms has been detected and reported by the motion sensor.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Measure the supply voltage of the motion sensor at the pins B1 and B2. The value must be between 6.5V and 9V. • Check the corresponding plug connector (B-connector of EFAS and connector on the motion sensor). • Check the contacts and wires for damaged spots and contact problems.
S4 ¹⁰	--	80 00 000007	---	<p>Meaning / Cause: The supply voltage of the EFAS exceeds the maximum permissible operating voltage (see technical data and type label of EFAS). EFAS checks this voltage cyclically several times per second.</p> <p>Measures: Measure the supply voltage of the EFAS at the pins A1, A3, A5, A6 or terminals 30, 15, 31a, and 31 and compare these with the specifications in the technical data or the type label of EFAS.</p>
S5 ¹⁰	--	80 00 000003	---	<p>Meaning / Cause: The supply voltage of EFAS is below the minimum permissible voltage value. EFAS checks this voltage cyclically several times per second.</p> <p>Measures: Measure the supply voltage of EFAS at the pins A1, A3, A5, A6 or terminals 30, 15, 31a, and 31 and compare these with the specifications in the technical data or the type label of the tachograph.</p>
S6 ¹⁰	08	80 00 000004	!≠ Interruption of power supply	<p>Meaning / Cause: An interruption in the supply voltage of EFAS greater than 200 ms has been detected. An interruption can be caused by an under-voltage or over-voltage or voltage drop.</p> <p>Note: After the occurrence of voltage interruption, EFAS can be reset only when proper supply voltage is available at the recording equipment for a period of at least one minute.</p> <p>Measures: Measure the supply voltage of EFAS at the pins A1, A3, A5, A6 and terminals 30, 15, 31a and 31. Check the contacts of the A connector as well as the supply lines to EFAS.</p>

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S7	01	40 00 000200	!❏ Card invalid ❏ (Symbol in the display for invalid cards)	<p>Meaning / Cause: An invalid card has been inserted in the card slot 1. The following causes are possible:</p> <ul style="list-style-type: none"> • The card has been inserted the wrong way round. • The card is not a tachograph card. • The tachograph card is defective. • The validity period of the tachograph card has not yet begun or has expired. • The PIN of a workshop smart-card has been entered incorrectly 5 times. • The card reader is defective. <p>Checks take place when inserting the card and periodically during operation.</p> <p>Note: Invalid tachograph smart-cards are ignored by EFAS, however the display, printout, or downloading of data stored on expired smart-cards is possible. An invalid or expired tachograph card is reported by EFAS with the help of a symbol. Invalid cards are not ejected automatically.</p> <p>Measures: Press key ! to eject the card and check the card in accordance with the measures listed above. In order to check whether the card reader of the EFAS or the card is defective, please check the card in another tachograph or using a reader, or insert other tachograph cards (which are known to be working properly) for comparison in the EFAS (see also service ID S39/S40)</p>
S8	01	40 00 000300	!❏ Card invalid	This error matches the previous one, however, for card slot 2.
S9	03	40 00 000200	!⌚ Time overlap	<p>Meaning / Cause: The tachograph card in card slot 1 contains an ejection time that is later than the current time in EFAS. The event is usually only possible if the card has been inserted into another tachograph previously.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check if the time setting deviates from the UTC time. If possible, also check the time of the previous tachograph, whether the time on this device deviates from the UTC time. • Correct the UTC time using a workshop smart-card and an appropriate diagnostics device.
S10	03	40 00 000300	!⌚ Time overlap	This error matches the previous one, however, for card slot 2.
S11	05	40 00 000200	!❏ Card inserted whilst driving	<p>Meaning / Cause: A tachograph card has been inserted in card slot 1 whilst the vehicle was in motion, i.e. motion sensor pulses were detected and EFAS is in the "driving" mode.</p> <p>Measures: Insert the cards into the slots only when the vehicle is stationary.</p>
S12	05	40 00 000300	!❏ Card inserted whilst driving	This error matches the previous one, however, for card slot 2.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S13	06	40 00 000200	!⚠️ Last use of card not finished	<p>Meaning / Cause: A tachograph smart-card has been inserted into card slot 1 after the card was previously inserted in another tachograph and was not closed down properly. The following causes are possible:</p> <ul style="list-style-type: none"> • Improper or forced removal of the card (tampering attempt). • A write error has occurred when it was used in the previous device. <p>Measures:</p> <ul style="list-style-type: none"> • The card is closed automatically by EFAS after inserting it in one of the two card slots. The error should not recur thereafter. • If possible, check the card reader of the previous device. • Watch for other card errors (also see service IDs S7/S8 and service IDs S39/S40).
S14	06	40 00 000300	!⚠️ Last use of card not finished	This error matches the previous one, however, for card slot 2.
S15 ¹⁰	14	40 00 000200	!⚠️ Security violation	<p>Meaning / Cause: The integrity (authenticity) of the data on the tachograph smart-card in the card slot 1 is not assured. Errors have been detected in the data structure by the security module of EFAS. The following causes are possible:</p> <ul style="list-style-type: none"> • A defective card locking mechanism of EFAS (a defect in the card reader is unlikely with such a fault, since in this case, other error codes are reported). • A defective tachograph card. • An attempt at tampering. <p>Measures:</p> <ul style="list-style-type: none"> • Check the tachograph smart-card in the other card slot or in another device. • Check the card locking mechanism of the recording equipment (please take note of the remarks given under service ID 17 and ID 18!). • Replace the tachograph smart-card.
S16 ¹⁰	14	40 00 000300	!⚠️ Security violation	This error matches the previous one, however, for card slot 2.
S17	18	40 00 000400	!⚠️ Security violation	<p>Meaning / Cause: A tachograph card was manually removed from card slot 1 without pressing the eject key or EFAS has determined, after supply voltage interruption, that the card is no longer in the slot.</p> <p>Measures: Insert a card in the slot the wrong way round *) for testing purpose and check whether the card locking mechanism of the tachograph is defective. It should not be possible to remove the card manually.</p> <ul style="list-style-type: none"> • A tachograph having a defective locking mechanism must be replaced. • Caution: The card should be inserted the wrong way round (contact surfaces facing downwards) since, in the event of a defective locking mechanism, the card may be provided with defective information on account of incomplete write operations!
S18	18	40 00 000500	!⚠️ Security violation	This error matches the previous one, however, for card slot 2.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S19	12	40 00 000200	!Ⓜ Security violation	<p>Meaning / Cause: An error was detected while authenticating a tachograph card in card slot 1. In the case of this error it is unlikely that there is a defect in the card locking mechanism or the card reader of EFAS, since, in this cases other error codes are reported. The following causes are possible:</p> <ul style="list-style-type: none"> • A defective tachograph card. • An attempt at tampering. <p>Measures: Check the tachograph smart-card in the other card slot or in another device.</p>
S20	12	40 00 000300	!Ⓜ Security violation	This error matches the previous one, however, for card slot 2.
S21	--	80 00 000660	> Printer < Insert module or > Printer < No paper	<p>Meaning / Cause: The event is set when no printer paper container has been plugged in, or when there is no paper in the printer.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Feed paper in the printer module and plug in the module. • Replace the printer module if the previous step does not eliminate the fault.
S22	09	80 00 002180	!Ⓜ Sensor data error	<p>Meaning / Cause: The real-time signal of the motion sensor (pin B3) is interrupted. The speed display remains at 0 km/h, although the vehicle is in motion. The motion sensor reports a checksum via the data channel, which corresponds to a speed > 0 km/h.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the plug connector contacts and lines to the motion sensor. • Check the supply voltage of the motion sensor. • Check the pulses at pin B3. • Check the pulse detection of the recording equipment via the front interface. • Replace the motion sensor, the connection line, the tachograph (depending on cause).
23	09	80 00 002280	!Ⓜ Sensor data error	<p>Meaning / Cause: The real-time signal of the motion sensor (pin B3) is faulty. The speed indicator displays the wrong speed. The number of pulses counted does not match with the checksum of the motion sensor transmitted via the data channel.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the plug connector contacts and lines to the motion sensor. • Check the supply voltage of the motion sensor. • Check the pulses at pin B3. • Check the pulse detection of the recording equipment via the front interface. • Replace the motion sensor, the connection line, the tachograph (depending on cause).
S24	09	80 00 002380	!Ⓜ Sensor data error	<p>Meaning / Cause: The communication via the data channel (pin B4) between EFAS and the motion sensor has malfunctioned.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the plug connector contacts and lines to the motion sensor. • Check the supply voltage of the motion sensor. • Check the data signal at the pin B4. • Check the pulse detection of EFAS via the front interface. • Replace the motion sensor, the connection line, the tachograph (depending on cause).

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S25	09	80 00 002380	!Π Sensor data error	<p>Meaning / Cause: The communication via the data channel (pin B4) between the tachograph and the motion sensor is interrupted. The motion sensor is not responding or no motion sensor is connected.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Connect and pair the motion sensor, if not yet done. • Check the plug connector contacts and lines to the motion sensor. • Check the supply voltage of the motion sensor. • Check the data signal at the pin B4. • Check the pulse detection of the smart tachograph via the front interface. • Replace the motion sensor.
S26 ¹⁰	22	80 00 002452	!Ⓜ Security violation	<p>Meaning / Cause: Error with respect to the integrity (authenticity) of the data of the motion sensor</p> <p>Measures: The motion sensor must be replaced.</p>
S27 ¹⁰	21	80 00 002452	!Ⓜ Security violation	<p>Meaning / Cause: The motion sensor itself has detected and reported an error while authenticating and the event is saved in the motion sensor. In general, this event can occur only if the motion sensor had been connected to another recording equipment in the meantime.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the seal on the motion sensor and check the feed cables. • The motion sensor must be replaced if the fault reoccurs.
S28 ¹⁰	11	80 00 002452	!Ⓜ Security violation	<p>Meaning / Cause: An error has been detected by EFAS while authenticating the motion sensor. The connected motion sensor is defective or it has not been paired with EFAS or, in the meantime, another motion sensor was connected to EFAS. Since EFAS repeats the authentication multiple times when an error occurs, it may take several minutes for the error to be displayed.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Insert the workshop smart-card and carry out the pairing. • Check the seal on the motion sensor and check the feed cables. • The motion sensor must be replaced.
S29 ¹⁰	13	80 00 002452	!Ⓜ Security violation	<p>Meaning / Cause: EFAS has detected an unauthorized modification of the motion sensor.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the seal on the motion sensor and check the feed cables. • Repeat the pairing procedure. • The motion sensor , if necessary the connection line, must be replaced.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S30 ¹⁰	18	80 00 000800	!Ⓜ Security violation and finally ×Ⓜ Service! SrvID: S30	<p>Meaning / Cause: The tachograph has an error in the current time or has detected a malfunction in the integrated clock. Further data recording is no longer possible. Data recording is not continued in order to avoid inconsistent data. Tachograph smart-cards, with the exception of workshop smart-cards and control cards, are no longer accepted.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Insert the workshop smart-card and check the clock signal at the front interface. • Set and check the current time in UTC, disconnect EFAS from the supply voltage for a few minutes and check whether the fault reoccurs. • In case of a defect in the integrated clock the tachograph must be replaced.
S31	--	80 00 000900	---	<p>Meaning / Cause: EFAS detects motion sensor pulses when the ignition is switched off.</p> <p>The following causes are possible:</p> <ul style="list-style-type: none"> • The vehicle is being moved manually or being towed. • The ignition signal is not detected by the recording equipment. • There is a malfunction in the motion sensor signal or the supply voltage. <p>Measures:</p> <ul style="list-style-type: none"> • Check the voltage level of the ignition signal at EFAS pins A3 / terminal 15. • For the ignition signal and for the motion sensor check the corresponding contacts and feed cables at the A and B connectors of EFAS and check the motion sensor for any damaged location and contact problems.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S32	--	40 00 000A70	---	<p>Meaning / Cause: Communication on the CAN main vehicle bus (depending on the parameter setting at the A or C connector) of EFAS has malfunctioned or is not possible. The following causes are possible:</p> <ul style="list-style-type: none"> No bus subscriber is connected or a bus subscriber is not supplied with voltage. The CAN fault management system has not been configured correctly. This means that the time period, which the bus subscribers connected require for initialization after switching on the ignition, has not been considered. <p>Measures:</p> <ul style="list-style-type: none"> Check the feed cables to the Bus subscribers and the power supply to the Bus subscribers. Test the malfunctions on the CAN bus using a suitable CAN diagnostics device. Read out the CAN error counters using the <i>EFAS Service Tool</i> (the error counters should read zero or should reset to zero). Check the sample point, i.e. the parameter value RDI=0xF97A for data bits on the CAN bus. The parameter is normally set for EOL programming to a value between 80% and 88%. Check if the malfunction can be eliminated by changing the parameter. Check the CAN error management (parameter value RDI=0xF97C) and, if required, increase the value. The value is usually specified by the vehicle manufacturer. See also the measures for the following error. <p>Remarks: Depending on the configuration of the CAN fault management system, the detection of these malfunctions is suppressed for a maximum of 25 seconds (smaller values are common) after switching on the ignition. This means that only malfunctions that still persist after this time has elapsed or those that occur thereafter are then reported immediately. Please wait for the corresponding period of time in order to be sure that there is no malfunction.</p>
S33	--	40 00 000B78	---	<p>Meaning / Cause: The CAN main vehicle bus (depending on the parameter setting at the A or C connector) is in the "Bus Off" state, i.e. EFAS is no longer participates in the CAN communication. The following causes are possible:</p> <ul style="list-style-type: none"> Missing terminal resistances at the bus end points or incorrect bus termination at the intermediate points. Incorrect baud rates of other subscribers or incorrectly selected baud rate or protocol in the EFAS Cable short-circuits. <p>Measures:</p> <ul style="list-style-type: none"> Check the feed cables to the Bus subscribers. Check whether the EFAS has a terminating resistor (device option) and whether a terminal resistance is required at the EFAS for the given type of vehicle. Check whether the bus is correctly terminated at the end points of the bus with terminating resistors. Select the correct bit rate and protocol in EFAS with the <i>EFAS Service Tool</i>.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S34	--	40 00 001177	---	<p>Meaning / Cause: The communication with the instrument panel / E-tachometer has malfunctioned or is interrupted. The connection between the instrument panel / E-tachometer and EFAS is monitored by the tachograph cyclically by means of a life sign message transmitted by the instrument panel / E-tachometer every second.</p> <p>Measures:</p> <ul style="list-style-type: none"> • First check whether any of the faults listed above (service ID 32 and 33) are reported and initiate the corresponding measures listed against them. • Check the CAN connection to the instrument panel / E-tachometer. • Check that the instrument panel / E-tachometer is working properly. • Check the specifications of the instrument panel or E-tachometer of the given vehicle type. • Deactivate the monitoring of the life-sign messages with the help of parameter configuration (see parameter RDI=0xF90C). (If other data are displayed correctly on the instrument panel or on the E-tachometer, then apparently the handshake message is not supported by this device. <p>Remarks: Depending on the configuration of the CAN fault management system, the detection of these malfunctions is suppressed for a maximum of 25 seconds (smaller values are common) after switching on the ignition. This means that only malfunctions that continue to persist after this time has elapsed or those that occur thereafter are reported within a few seconds. Please wait for the corresponding period of time in order to be sure that there is no malfunction.</p>
S35 ¹⁰	31	80 00 000C31	✖ Internal Device malfunction	<p>Meaning / Cause: An error has been detected in the checksum of the program memory. Apparently, this is a hardware defect in certain memory locations in the program memory. Proper functioning of the device is probably no longer ensured. This fault is displayed, in general, a few minutes after leaving the standby mode, e.g. after turning on the ignition, when a memory error is detected during the POST (Power-On Self Tests).</p> <p>Measures:</p> <ul style="list-style-type: none"> • If this fault continues to occur, the tachograph must be replaced.
S36 ¹⁰	15	80 00 000D33	!🔒 Security violation	<p>Meaning / Cause: EFAS has detected a checksum error in the calibration data after being turned on. Proper functioning of the device is probably no longer ensured.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Acknowledge the message and turn off the ignition. Wait until the device turns off and then turn on the ignition again (alternatively: Send an ECU Reset command with the sub-function 0x03 ("Soft Reset") via the diagnostics interface). EFAS must be replaced if this error message appears again after restarting. • Check the calibration data for validity and re-calibrate the device.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S37	--	80 00 000D40	---	<p>Meaning / Cause: The calibration data are incorrect or incomplete at the end of a calibration procedure (e.g., after pulling out the workshop smart-card). At least one of the EC calibration parameters does not have a valid value or during the calibration procedure, setting a given value was rejected and finally not corrected.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the calibration parameters saved in the device. • Recalibrate the device. • Use the test equipment and corresponding instruction manuals.
S38 ¹⁰	32	40 00 000700	× Printer malfunction	<p>Meaning / Cause: A printer malfunction was detected, i.e. a printout could not be started or was canceled after the issue of a temperature warning, because the printing mechanism could not cool itself off within one minute.</p> <p>The following causes are possible:</p> <ul style="list-style-type: none"> • The temperature sensor of the printer module is defective. • The ambient temperature is too high. • Hardware defect in the printer controller or power supply in EFAS. <p>Measures:</p> <ul style="list-style-type: none"> • Observe the operating temperature of the printing mechanism in the technical data.
S39	40	40 00 000200	× 1 Card malfunction	<p>Meaning / Cause: Reading or writing of the tachograph card in card slot 1 malfunctioned.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check whether the card or the contact surfaces of the card are damaged. • In order to check whether the card reader of EFAS or the card is defective, please check the card in another tachograph or using a reading device, or insert other tachograph cards (which are known to be working properly) for comparison in the EFAS.
S40	40	40 00 000300	× 2 Card malfunction	This malfunction matches the previous one, however, for card slot 2.
S41 ¹⁰	31	40 00 000400	× Internal Device malfunction	<p>Meaning / Cause: There is a mechanical or electrical defect in a card reader (card slot 1). For example, the card could not be ejected by the ejecting mechanism.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Press the driver's key / eject key ⓘ for a longer time to repeat the ejection of the card. • If the ejecting mechanism can be heard but the card does not eject, then it is either a mechanical defect or the card is damaged, which then blocks the slot. • If no ejecting sound can be heard then there is an electronic defect. If it is not possible to remove the card then EFAS must be opened using a workshop smart-card in the other card slot in order to eject the card manually.
S42 ¹⁰	31	40 00 000500	× Internal Device malfunction	This malfunction matches the previous one, however, for card slot 2.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S43 ¹⁰	31	40 00 000F00	× A Internal Device malfunction	Meaning / Cause: Malfunction of the keyboard has been detected, i.e. at least one key remains continuously pressed. The tachograph assumes that a key has been pressed continuously if it remains pressed for more than two minutes. Measures: Check if the keys are being blocked. Devices, in which the keys are blocked permanently must be replaced.
S44 ¹⁰	33	40 00 001030	× A Display malfunction <i>(the text output: "×A service display fault", appears additionally on the printer)</i>	Meaning / Cause: A malfunction of the LCD display has been detected, i.e. the communication for display has malfunctioned or is permanently interrupted. There is either no picture on the display (no characters visible) or it is faulty (flickering, pixel errors, etc.). Measures: Devices, in which this fault occurs permanently or in which visible defects can be seen in the picture displayed, must be replaced. Remarks: If the display is too faint then the contrast and brightness must be adjusted in the corresponding setup menu. In this case, however, there is no malfunction reported.
S45 ¹⁰	35	40 00 002508	× l Sensor malfunction	Meaning / Cause: The motion sensor has reported an internal fault to EFAS. Measures: If this fault occurs repeatedly then the tachograph must be replaced.
S46	--	40 00 003100	---	Meaning / Cause: Tachograph malfunction, pin B5. Remarks: Reserved code (not supported by EFAS).
S47 ¹⁰	--	40 00 003200	---	Meaning / Cause: Tachograph malfunction, pin B6. Remarks: Reserved code (not supported by EFAS). The pin is electrically connected to the pins B7 and D6. Please see the description of service ID 48.
S48	31	40 00 003000	× A Internal Device malfunction	Meaning / Cause: Tachograph malfunction, pin B7 (speed signal). The monitoring circuit of the signal at this output of the recording equipment has detected a malfunction. Measures (continued): Check B7 for short-circuit and measure the signal level. Measure the pulses at the output B7 and compare them with the input impulses from the motion sensor at the input B3. The pulse frequency must be identical, the pulses at the output B7 are normalized by the taking the value of the k-factor that has been configured into consideration. Check the connection between output B7 and the controller connected.
S66	81	---	! B Manufacturer specific Event	Meaning / Cause: EFAS was opened with authorization using a workshop smart-card. Measures: The opening must be marked in the repair protocol and protocol must be archived.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S67	04	80 00 001260	!⚠️ Driving without a suitable card	<p>Meaning / Cause: The vehicle was moved although there was no valid tachograph smart-card (driver's card or workshop smart-card) inserted into card slot 1.</p> <p>Measures: Check whether a valid driver's card or workshop smart-card has been inserted in card slot 1. In the case of workshop smart-cards, the PIN must be entered before the journey can be started.</p>
S68 ¹⁰	18	--	!⚠️ Security violation	<p>Meaning / Cause: The internal security module has indicated a potential inconsistency during the hardware test.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the printout "tachograph events and malfunctions" or inspect the corresponding downloaded data; look for the simultaneous occurrence of EFT 49 dec (0x31). If both occur simultaneously, they can be ignored. • If the event occurs without a simultaneous EFT 49 dec (0x31) more than once per month, the tachograph should be replaced.
S69	2	--	!⚠️ Smartcard conflict	<p>Meaning / Cause: The combination of tachograph cards inserted into card slots 1 and 2 makes no sense. The card in the second slot is ignored.</p> <p>Measures: Check the card combination and remove one of the two cards.</p>
S70	07	--	>> Over speeding	<p>Meaning / Cause: Exceeding of the programmed maximum permissible speed for longer than 1 minute.</p> <p>The following causes are possible:</p> <ul style="list-style-type: none"> • The value for the highest permissible speed was not programmed correctly (please note the ex-works default value). • The driving speed is too high. <p>Measures:</p> <ul style="list-style-type: none"> • Program the correct value of the highest speed permissible for the vehicle. • Reduce the speed.
S71 ¹⁰	15	--	!⚠️ Security violation	<p>Meaning / Cause: EFAS has detected an error in its mass memory data. Data integrity is no longer guaranteed.</p> <p>Measures: The tachograph must be replaced if the fault reoccurs.</p>
S72 ¹⁰	16	--	!⚠️ Security violation	<p>Meaning / Cause: There is a communication problem internal to EFAS. The internal communication between the main processor and the security module is faulty.</p> <p>Measures: If this fault continues to occur, the tachograph must be replaced.</p>
S73 ¹⁰	17	--	!⚠️ Security violation	<p>Meaning / Cause: The recording equipment has been opened "without authorization".</p> <p>Measures: The tachograph must be replaced if the device is damaged or has been tampered with or if the seals have been removed by unauthorized persons.</p>

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S74 ¹⁰	34	--	✕⌂ Download malfunction	Meaning / Cause: There is a malfunction while downloading data. Measures: <ul style="list-style-type: none"> • Check the connection (cable and connector) to the front interface of the recording equipment. • Check if the transmission equipment used is compatible with the recording equipment (check the manufacturer and software version used on the transmission equipment).
S75 ¹⁰	23	80 00 002452	!⌂ Security violation	Meaning / Cause: The motion sensor reports a general communication malfunction. Measures: Check the motion sensor. If the error is displayed several times then the motion sensor must be replaced.
S76 ¹⁰	24	80 00 002452	!⌂ Security violation	Meaning / Cause: Motion sensor malfunction. Remarks: Reserved code for future functional extensions of the motion sensor.
S77 ¹⁰	25	80 00 002452	!⌂ Security violation	Meaning / Cause: The motion sensor reports a temperature-related fault (over-temperature). Measures: Check the motion sensor. If the error is displayed several times then the motion sensor must be replaced.
S78	--	--	---	Meaning / Cause: This service ID is only processed internally in EFAS. Measures None
S79	--	--	---	Meaning / Cause: This service ID is only processed internally in EFAS. Measures: None
S80	82	--	!⌂ Temperature out of range	Meaning / Cause: The tachograph has been operated beyond the permissible temperature range. Measures: None, warranty void.
S81 ¹⁰	31	40 00 000139	✕⌂ Internal Device malfunction and finally ✕⌂ Service! SrvID: S81	Meaning / Cause: A general internal device malfunction is at hand. There is a hardware defect in the internal security module. Measures: The tachograph must be replaced, if the error occurs several times.
S82 ¹⁰	15	40 00 000139	!⌂ Security violation and finally ✕⌂ Service! SrvID: S82	Meaning / Cause: While testing the mass memory or when reading from the mass memory of EFAS an integrity error of the data or data structures has been detected. Measures: The recording equipment must be replaced, if the error occurs several times.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S83	0A	40 00 002280	!AΠ Vehicle motion conflict SrvID: S83	<p>Meaning/Cause: EFAS has detected a relevant difference between the speed values of the paired motion sensor and the speed values of the GNSS receiver. According to CR (EU) 2016/799, a speed difference between these two motion sources is classified as relevant if the median value of the deviation is continuously above 10 km/h for 5 minutes in the motion.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Couple the EFAS with the motion sensor. • Check cause, why a coupling could not be established (check plug contacts and supply lines to the position sensor). • Replace the motion sensor.
S84 ¹⁰	11	80 00 002452	!⊠ Security violation	<p>Meaning / Cause: There are two causes for this error:</p> <ul style="list-style-type: none"> • After a few power interruptions, the sensor may not activate immediately and cause a security violation. • Pairing with the motion sensor had failed during the initial commissioning. EFAS remains deactivated (the error is displayed after the workshop smart-card is removed). • The device was activated successfully and new pairing with another motion sensor by means of a command has failed. (The error is displayed after the workshop smart-card is removed as well as after every restart of the device, to warn that despite the activation there is no valid pairing present.) <p>Measures:</p> <ul style="list-style-type: none"> • Check the handling instructions of the sensor manufacturer. • Pair EFAS with the motion sensor. • Check the cause as to why pairing could not be carried out (check the connector contacts and feed cables to the motion sensor). • Replace the motion sensor.
S85 ¹⁰	20	80 00 002452	!⊠ Security violation	<p>Meaning / Cause: The motion sensor reports an unknown error for EFAS. The motion sensor used is not compatible with the recording equipment EFAS or the motion sensor is defective.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check whether the motion sensor used may be operated with the tachograph EFAS. • Check the function of the motion sensor. • Replace the motion sensor.
S86	52	40 00 F01762	×⊠ Time conflict	<p>Meaning / Cause: A time conflict is displayed if the time between GNSS and RTC differs by more than 60 seconds.</p> <p>Measures: If this event was triggered, a time correction is triggered automatically, which takes over the GNSS time if the GNSS signal is valid.</p>
S87 ¹⁰	31	40 00 000139	×⊠ Internal device malfunction	<p>Meaning / Cause: The security module of EFAS has detected a possible internal fault.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Check the printout "tachograph events and malfunctions" or the inspect the corresponding downloaded data; look for the simultaneous occurrence of EFT 24 dec. If both occur simultaneously, they can be safely ignored. • If the event occurs without a simultaneous EFT 24 dec more than once in a month, the tachograph should be replaced.
S88	--	--	---	This malfunction matches SrvID S32, however, it relates to the CAN expansion bus.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S89	--	40 00 00FD0B	---	This malfunction matches SrvID S33, however, it relates to the CAN expansion bus.
S90 ¹⁰	14	40 00 000200	!Ⓜ Security violation	<p>Meaning / Cause: The integrity (authenticity) of the data on the tachograph card in card slot 1 is not assured. Errors were found in the data structure. The following causes are possible:</p> <ul style="list-style-type: none"> • A defective card locking mechanism of EFAS (a defect in the card reader is unlikely with such a fault, since in this case, other error codes are reported). • A defective tachograph smart-card. • An attempt at tampering. <p>Measures:</p> <ul style="list-style-type: none"> • Check the tachograph card in another card slot or in another device. • Check the card locking mechanism of EFAS (please take note of the remarks given under service ID 17 and 18). • Replace the tachograph smart-card.
S91 ¹⁰	14	40 00 000300	!Ⓜ Security violation	This error matches the previous one, however, for the card slot 2.
S92	31	40 00 000139	×Ⓜ Internal device malfunction and finally ×Ⓜ Service! SrvID: S92	<p>Meaning / Cause: There is a general internal device fault. EFAS has detected an invalid combination of installed software components. The application version is incompatible with the software version of the Security Controller.</p> <p>Measures: The tachograph must be replaced.</p>
S93	18	80 00 000800	---	<p>Meaning / Cause: The deviation between the GNSS time and the built-in clock is greater than 20 minutes or greater in absolute terms than 40 minutes since the last calibration.</p> <p>Measures:</p> <ul style="list-style-type: none"> • Insert the workshop card and check the time signal at the front interface. • Execute the GNSS test function and check the displayed time. • Check the current time of the VU and set it correctly if necessary. • After a few minutes, compare both times again. If there is a deviation, the tachograph must be replaced.
S94 ¹⁰	31	40 00 000139	×Ⓜ Internal device malfunction	<p>Meaning / Cause: A general internal device malfunction is at hand. EFAS has performed a restarted, the cause for which is unknown.</p> <p>Measures: If this fault continues to occur, the tachograph must be replaced.</p>
S95 ¹⁰	31	40 00 000139	×Ⓜ Internal device malfunction	<p>Meaning / Cause: A general internal device malfunction is at hand. EFAS has performed a restarted as a result of the in-built "Watchdog".</p> <p>Measures: If this fault continues to occur, the tachograph must be replaced.</p>
S96 ¹⁰	31	40 00 000139	×Ⓜ Internal device malfunction	<p>Meaning / Cause: A general internal device malfunction is at hand. The device has performed a restart as a consequence of an extraordinary event during program execution. The cause here can be, e.g. a defective memory module.</p> <p>Measures: If this fault continues to occur, the tachograph must be replaced.</p>

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S97 ¹⁰	31	40 00 000139	✕Ⓜ Internal device malfunction	Meaning / Cause: A general internal device malfunction is at hand. EFAS has performed a restart as a consequence of an extraordinary event during program execution. Measures: If this fault continues to occur, the tachograph must be replaced.
S98 ¹⁰	31	40 00 000139	✕Ⓜ Internal device malfunction and finally ✕Ⓜ Service! SrvID: S98	Meaning / Cause: The internal real-time clock (RTC) is defective. The following causes are possible: <ul style="list-style-type: none"> • The communication to the clock module is interrupted • The time is incorrect and cannot be corrected. Measures: Correct the time setting in the CALIBRATION operating mode. If the time cannot be set correctly then the tachograph must be replaced.
S99	31	40 00 000139	✕Ⓜ Internal device malfunction and finally ✕Ⓜ Service! SrvID: S99	Meaning / Cause: The internal module for controlling the card reader is defective. The card reader function of both card slots is faulty. Measures: If this fault continues to occur, the tachograph must be replaced.
S100	--	--	---	Meaning / Cause: This service ID is only processed internally in EFAS. Measures: None
S101	09	80 00 002280	!Ⓜ Sensor data error	Meaning / Cause: The input frequency of the real-time signal supplied by the motion sensor (input B3 to the recording equipment) is not plausible, i.e. the value is too high (greater than ~1.5 kHz). Measures: <ul style="list-style-type: none"> • Measure the frequency at the input B3 and compare it with the maximum permissible frequency. • Check the lines to the motion sensor. • Check the motion sensor and, if required, replace it.
S102	--	--	---	Meaning / Cause: This service ID is only processed internally in the tachograph. Measures: None
S103 ¹⁰	31	80 00 000C31	✕Ⓜ Internal device malfunction and finally Service! SrvID:103	Meaning / Cause: An error has been detected in the checksum of the program memory. Apparently, this is a hardware defect in certain memory locations in the program memory. Correct functioning of the device is presumably no longer ensured. This fault generally occurs after the device has been in use for a longer period of time. Measures: If this fault continues to occur, the tachograph must be replaced.
S104 ¹⁰	--	--	---	Reserved code for future functional extensions of the tachograph.
S105 ¹⁰	31	40 00 000139	✕Ⓜ Internal device malfunction and finally ✕Ⓜ Service! SrvID:105	Meaning / Cause: The voltage of the buffer battery built into EFAS is too low. Measure: Replace the internal back-up battery. Carry out a recalibration.
S106 ¹⁰	15	40 00 000139	!Ⓜ Security violation and finally ✕Ⓜ Service! SrvID:S106	Meaning / Cause: The integrity of the data in the mass memory of EFAS is disturbed. No further data is recorded. Measure: The tachograph must be replaced.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S107	80	--	!B Manufacturer-specific event	Meaning / Cause: Protocol entry after a software update. An update of EFAS operating system software is recorded with this event. Measure: None
S108 ¹⁰	31	40 00 000139	×A Internal device malfunction and finally Service! SrvID:S108	Meaning / Cause: The data of the battery-backup memory has been lost. The possible causes are: <ul style="list-style-type: none"> • Failure or malfunction of the internal buffer battery. The voltage of the battery is inadequate to feed the real-time clock and the data that is saved in the battery backup RAM. • In case of malfunction, the data in the battery backup RAM is deleted. • If the cause for this malfunction is a weak battery then this malfunction is displayed if EFAS was previously isolated from the vehicle battery, otherwise the service ID S105 is displayed. Measure: <ul style="list-style-type: none"> • Replace the internal back-up battery. • Carry out a recalibration.
S109	--	--	---	Reserved code for future functional extensions of EFAS.
S110	31	40 00 000139	×A Internal device malfunction	Meaning / Cause: The possible causes are: <ul style="list-style-type: none"> • Malfunction on the internal communication bus or in the internal communication module. • Internal communication module reports a hardware error. Measure: <ul style="list-style-type: none"> • Check for obvious problems, e.g. with the printer. • Check if communication on connectors D7 and/or D8 is malfunctioning. • In case of obvious malfunctioning or frequent occurrence of the error message, the tachograph must be exchanged.
S111	31	40 00 000139	×A Internal device malfunction	Meaning / Cause: Faulty internal software component. Measure: Update the software.
S112	31	40 00 000139	×A Internal device malfunction	Meaning / Cause: The ignition signal (connector A3) is showing an unusual number of status changes per 5 seconds (≥ 25). Cause of the signal change could be a potential difference between connectors A5 and A6 (missing or broken wiring) as well as an ignition signal oscillating between on and off. Measure: Check the wiring on A5 and A6, if necessary connect or replace the wiring. Check the wiring on A6, if A6 not wired, then make a connection to A5. In case of signal oscillation an extra ignition relay may help to suppress oscillations.
S113	31	40 00 000139	×A Internal device malfunction	Meaning / Cause: The on-board voltage as set by parameter (nominal voltage 12V or 24V) does not match the actual voltage measured at connector A1. The incorrect voltage level was measured over a period of more than 45 seconds. Measure: <ul style="list-style-type: none"> • Check the on-board power supply. • Check the parameter setting for the on-board power supply voltage and adjust this if necessary.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S114	31	40 00 000139	✕Ⓜ Internal device malfunction	Meaning / Cause: The temperature control of the EFAS is faulty or the temperature is too low. Measure: If this error occurs at normal temperature the tachograph has to be replaced.
S115	--	40 00 000139	Service! SrvID:S115	Meaning / Cause: The temperature of EFAS is outside the acceptable range. Measure: Wait until the temperature is within the operating range -20°C to +70°C.
S116	90	40 00 000139	✕ⓂⓁ Independent Motion Sig Source	Meaning / Cause: EFAS receives no data from the independent motion source. Measure: <ul style="list-style-type: none"> • Check IMS signal and CAN bus. • Check IMS setting. • Run IMS test function to verify IMS settings.
S117	01	40 00 000200	!Ⓜ Card invalid (slot 1)	Meaning / Cause: An expired or not valid tachograph card was inserted into card slot 1. Measure: Change the card in slot 1 or wait until valid.
S118	01	40 00 000300	!Ⓜ Card invalid (slot 2)	Meaning / Cause: An expired or not valid tachograph card was inserted into card slot 2. Measure: Change the card in slot 1 or wait until valid.
S119	31	40 00 000139	✕Ⓜ Internal Device malfunction	Meaning / Cause: When ejecting the workshop card, the security data for opening monitoring cannot be saved successfully. Measure: Please repeat the procedure. If the error occurs again, please contact EFAS Service.
S120	--	--	ⓂⓁ 9h 9h Daily driving time	Meaning / Cause: Pre-warning: In xx minutes ¹⁵ the daily driving time of 9 hours is reached.
S121	--	--	ⓂⓁ 9h 9h Daily driving time	Meaning / Cause: The daily driving time of 9 hours is reached.
S122	--	--	!ⓂⓁ Max. daily driving time	Meaning / Cause: Pre-warning: In xx minutes ¹⁵ the maximum daily driving time of 10 hours is reached.
S123	--	--	!ⓂⓁ 10h Max. daily driving time	Meaning / Cause: The maximum daily driving time of 10 hours is reached.
S124	--	--	!Ⓜ Weekly driving time	Meaning / Cause: Pre-warning: In xx minutes ¹⁵ the weekly driving time of 56 hours is reached.
S125	--	--	!Ⓜ 56h Weekly driving time	Meaning / Cause: The weekly driving time of 56 hours is reached.
S126	--	--	!Ⓜ Two weekly driving time	Meaning / Cause: Pre-warning: In xx minutes ¹⁵ the two-weekly driving time of 90 hours is reached.
S127	--	--	!Ⓜ 90h Two weekly driving time	Meaning / Cause: The two-weekly driving time of 90 hours is reached.
S128	--	--	!+h REST required	Meaning / Cause: Pre-warning: In xx minutes ¹⁵ a daily/weekly rest must be done.
S130	--	--	!+h REST required	Meaning / Cause: A daily/weekly rest must be done.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S132	--	--	!☐ dd.mm.yy Card expiration date (slot 1)	Meaning / Cause: Is displayed xx days before the card expiry date (dd.mm.yy), where xx is determined by the parameter RDI = F993 (default = 60 days).
S133	--	--	!☐ dd.mm.yy Card expiration date (slot 2)	Meaning / Cause: Is displayed xx days before the card expiry date (dd.mm.yy), where xx is determined by the parameter RDI = F993 (default = 60 days).
S134	--	--	!☐ dd.mm.yy Card data download (slot 1)	Meaning / Cause: Is displayed xx days before the last possible date of a card download, where xx is determined by parameter RDI = F994 (default = 5 days).
S135	--	--	!☐ dd.mm.yy Card data download (Schacht 2)	Meaning / Cause: Is displayed xx days before the last possible date of a card download, where xx is determined by parameter RDI = F994 (default = 5 days).
S136	--	--	!☐ dd.mm.yy Mass storage download	Meaning / Cause: Is displayed xx days before the last possible date (dd.mm.yy) of a download of the mass storage of EFAS, where xx is determined by the parameter RDI = F995 (default = 10 days).
S137	--	--	!☐ dd.mm.yy Calibrate tachograph	Meaning / Cause: xx days before the last possible date (dd.mm.yy) of a calibration of EFAS to be carried out, where xx is determined by the parameter RDI = F996 (default = 60 days).
S138	FF		×☐ dd.mm.yy expire date tachograph	Meaning / Cause: Is displayed xx days before the expiration date of the tachograph, where xx is determined by the parameter RDI=F996 (default=60 days). Measure: Tachograph must be replaced.
S140	01	40 00 000200	!☐ Card invalid (slot 1)	Meaning / Cause: A generation 1 card was inserted into card slot 1, however the tachograph only accepts generation 2 cards. Measure: Use Generation 2 card.
S141	01	40 00 000300	!☐ Card invalid (slot 2)	Meaning / Cause: A generation 1 card was inserted into card slot 2, however the tachograph only accepts generation 2 cards. Measure: Use Generation 2 card.
S142	01	40 00 000200	!☐ Card invalid (slot 1)	Meaning / Cause: The type of card inserted in card slot 1 is currently not accepted by the tachograph. For example, once the tachograph has expired, no driver cards will be accepted; in case of serious errors, only workshop cards and control cards will be accepted.
S143	01	40 00 000300	!☐ Card invalid (slot 2)	Meaning / Cause: The type of card inserted in card slot 2 is currently not accepted by the tachograph. For example, once the tachograph has expired, no driver cards will be accepted; in case of serious errors, only workshop cards and control cards will be accepted.
S144	01	40 00 000200	!☐ Card invalid (slot 1)	Meaning / Cause: Card access error in card slot 1. Measure: Clean the card and insert it again.
S145	01	40 00 000300	!☐ Card invalid (slot 2)	Meaning / Cause: Card access error in card slot 2. Measure: Clean the card and insert it again.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S170	36	--	✘ GNSS error	Meaning / Cause: The tachograph receives no data from the internal GNSS receiver. Measure: If the error is still displayed after several ignition cycles, the GNSS receiver is not functioning properly and the tachograph must be replaced.
S171	0D	40 00 C46B00	! No position	Meaning / Cause: Missing position data of the GNSS receiver <ul style="list-style-type: none"> This event is triggered, if the VU is not in CALIBRATION mode, if position data from the GNSS receiver for more than 3 hours cumulated driving time are missing during the journey. Measure: Ensure the possibility of GNSS reception, e.g. is the tachograph covered by a shielding object?
S173	38	40 00 C25900	✘ DSRC error	Meaning / Cause: The connection to the remote communication equipment is faulty. (Three times in a row no response or negative response to RTM data transmission) Measure: Check connection to DSRC module.
S174	0C	40 00 C25900	! DSRC facility	Meaning / Cause: Communication error with the remote communication equipment (The DSRC flash data of the RTM message are different to those in the tachograph - corrupt data / erroneous data) Measure: Change DSRC module, or check for transmission errors.
S175	39	--	✘ ITS error	Meaning / Cause: None (should not be triggered), ITS is not supported. Measure: -
S176	--	40 00 000D80	-- (keine Anzeige am Tachographen)	Meaning / Cause: The CAN message "Gateway_71" has not been received at CAN bus A in the required interval. Remark: This error can only be displayed if the parameter "Standard protocol selection" (FD52) is set to the VWN protocol (variant 8). Measure: If the tachograph is not installed in a VWN vehicle, select a different standard protocol.
S177	--	40 00 000B80	-- (keine Anzeige am Tachographen)	Meaning / Cause: The CAN message "Dimming_01" has not been received at CAN bus A at the required interval. Remark: This error can only be displayed if the parameter "Standard protocol selection" (FD52) is set to the VWN protocol (variant 8). Measure: If the tachograph is not installed in a VWN vehicle, select a different standard protocol.
S178	--	40 00 000F80	-- (keine Anzeige am Tachographen)	Meaning / Cause: The CAN message "Reset" has not been received at CAN bus A at the required interval. Remark: This error can only be displayed if the parameter "Standard protocol selection" (FD52) is set to the VWN protocol (variant 8). Measure: If the tachograph is not installed in a VWN vehicle, select a different standard protocol.

SrvID hex	EFT hex	DTC	Symbol Display text	Description and trouble-shooting
S200	--	--	> Input error < see SrvID:S200	Meaning / Cause: With manual input of the driver's activities the maximum number of 20 activity changes per shift has been exceeded.
S201	--	--	> Company lock < see SrvID:S201	Meaning / Cause: Company lock cannot be activated or deactivated as another, conflicting tachograph smart-card is present in EFAS. Measure: Remove the conflicting card and repeat the operation.
S202	--	--	> Company lock < see SrvID:S202	Meaning / Cause: The maximum number of CompanyLocks per day has been reached. Measure: After the current calendar day has expired, the lock-in can be executed again.
S203	--	--	> Input < see SrvID:S203	Meaning / Cause: The maximum number of CompanyLocks per day has been reached. Measure: After the current calendar day has expired, the lock-in can be executed again.
S204	--	--	> Company lock < see SrvId:204	Meaning / Cause: Function temporarily not executable. Measure: Repeat the function after a short break.
S205	--	--	> Company lock < see SrvId:205	Meaning / Cause: Unexpected input error during CompanyLock. Measure: Repeat the function after a short break.
S206	--	--	> Input < see SrvId:S206	Meaning / Cause: Unexpected input error when entering the time. Measure: Repeat the function after a short break.
S207	--	--	> Input < see SrvId:S207	Meaning / Cause: Unexpected input error when starting the sensor pairing. Measure: Repeat the function after a short break.
S209	--	--	for future use	Meaning / Cause: General input error; no help available

12.3 DTC overview table

The following table lists an overview of the DTCs (type 2 codes) defined for the tachograph system in accordance with ISO 16844-7.

Standard diagnostic tools, such as, for example, hand-held calibration instruments / tachograph tester, often display only the ISO code of a DTC without any associated explanation of the meaning. Please refer to the following table for the meaning. The *EFAS Service Tool* provides the same information when querying the fault memory.

Table 18 — DTCs supported and corresponding Service IDs

No.	DTC (hexadecimal)		Meaning	Service ID
1	80 00	002007	The supply voltage of the motion sensor is above the maximum permissible value	S1
2	80 00	002003	The supply voltage of the motion sensor is below the minimum permissible value	S2
3	80 00	002004	Interruption of the supply voltage to the motion sensor	S3

¹² This code is reserved in the standard ISO 16844-7, but recording is not necessary at present. EFAS does not support this error code.

No.	DTC (hexadecimal)		Meaning	Service ID
4	80 00	000007	The supply voltage of the recording equipment is above the maximum permissible value	S4
5	80 00	000003	The supply voltage of the recording equipment is below the minimum permissible value	S5
6	80 00	000004	Interruption of the supply voltage to the recording equipment	S6
7	40 00	000200	Card error in slot # 1	S7, S9, S11, S13, S15, S19, S39, S90, S117, S140, S142, S144
8	40 00	000300	Card error in slot # 2	S8, S10, S12, S14, S16, S20, S40, S91, S118, S141, S143, S145
9	80 00	000660	No printer paper is available	S21
10	80 00	002180	No real-time signal from the motion sensor (B3 interrupted)	S22
11	80 00	002280	Real-time signal from the motion sensor faulty (B3 faulty) or invalid data signal or IMS error	S23, S83, S101
12	80 00	002380	Data signal from the motion sensor is interrupted or faulty (B4 interrupted or faulty)	S24, S25
13	80 00	002452	Integrity error of the distance sensor	S26, S27, S28, S29, S75, S76, S77, S84, S85
14	80 00	000800	Error in Date/Time	S30, S93
15	40 00	000900	Motion sensor pulses with the ignition turned off	S31
16	40 00	000A70	MAIN CAN bus connector faulty	S32
17	40 00	000B78	MAIN CAN bus connector in "Bus Off" status	S33
18	40 00	001177	Communication to the instrument panel / E-tachometer faulty	S34
20	80 00	000D33	Calibration memory, read/write error	S36
21	80 00	000D40	Calibration data incorrect or incomplete	S37
22	40 00	000700	Printer malfunction	S38
23	40 00	000400	Malfunction of the card reader (slot # 1)	S17, S41
24	40 00	000500	Malfunction of the card reader (slot # 2)	S18, S42
25	40 00	000F00	Malfunction of the keyboard	S43
26	40 00	001030	Malfunction of the display	S44
27	80 00	002508	Malfunction of the motion sensor	S45
28	40 00	003100	Malfunction in the recording equipment, pin B5 ¹²	S46
29	40 00	003200	Malfunction in the recording equipment, pin B6 ¹²	S47
30	40 00	003000	Malfunction in the recording equipment, pin B7 (Output signal). The standardized output speed pulses are faulty	S48
31	40 00	003300	Malfunction in the recording equipment, pin B8 ¹²	S49
32	40 00	004000	Malfunction in the recording equipment, pin C1 ¹²	S50
33	40 00	004100	Malfunction in the recording equipment, pin C2 ¹²	S51
34	40 00	004200	Malfunction in the recording equipment, pin C3 ¹²	S52
35	40 00	004300	Malfunction in the recording equipment, pin C4 ¹²	S53
36	40 00	004400	Malfunction in the recording equipment, pin C5 ¹²	S54
37	40 00	004500	Malfunction in the recording equipment, pin C6 ¹²	S55
38	40 00	004600	Malfunction in the recording equipment, pin C7 ¹²	S56
39	40 00	004700	Malfunction in the recording equipment, pin C8 ¹²	S57
40	40 00	004800	Malfunction in the recording equipment, pin D1 ¹²	S58
41	40 00	004900	Malfunction in the recording equipment, pin D2 ¹²	S59
42	40 00	004A00	Malfunction in the recording equipment, pin D3 ¹²	S60
43	40 00	004B00	Malfunction in the recording equipment, pin D4 ¹²	S61
44	40 00	004C00	Malfunction in the recording equipment, pin D5 ¹²	S62
45	40 00	004D00	Malfunction in the recording equipment, pin D6 ¹²	S63
46	40 00	004E00	Malfunction in the recording equipment, pin D7 ¹²	S64
47	40 00	004F00	Malfunction in the recording equipment, pin D8 ¹²	S65
48	40 00	000139	General malfunction of the recording equipment	S81, S82, S87, S92, S94, S95, S96, S97, S98, S99, S105, S106, S108, S112, S113, S114, S115, S116, S119
49	80 00	001260	Driving without a proper card	S67

No.	DTC (hexadecimal)		Meaning	Service ID
50	40 00	C25900	Communication error with remote communication equipment (DSRC)	S173, S174
51	40 00	C46B00	Missing position data of the GNSS receiver	S171
52	40 00	F01762	Time conflict (between GNSS and EFAS system clock)	S86
53	40 00	000B80	VW CAN Time-Out Dimmung 01	S177
54	40 00	000D80	VW CAN Time-Out GW 71	S176
55	40 00	000F80	VW CAN Time-Out Reset	S178
56	40 00	00FD0B	CAN-Bus AUX in "Bus-Off"-state	S89
57	80 00	0001C0	Over Speed prewarning	S100

12.4 Printout of Service IDs

Via the EFAS menu, the printout or display of the last 100 service IDs is possible ("SrvId" and "SrvId"). The printout of events/faults is arranged chronologically in reversed order, i.e. the newest events and faults will appear at the top of the printout. Duration "--h--" indicates an ongoing event or fault.

Since the list of service IDs within EFAS is never reset, and might be a little long, the user may interrupt the printout by means of the key **⏏** at any time. EFAS records the last printout-time for this printout and shows it via the marker "⏏" (last printout time; see example below).



Note

EFAS records the last printout-time for this printout and shows it via the marker "⏏". The marker is useful when you want to interrupt the printout at an adequate point by means of the key **⏏**.



Note

In the menu of the EFAS Service Tool the parameter "Printed Service IDs" (RDI=0xFDBA) can be set to values between 0 and 250, whereby "0" deactivates the function "Printout of Service IDs".

Via EFAS Service-Tool the parameter `PrintoutServiceIdConfiguration` (RDI=0xFDBA) may be set to values between 0 and 250, where 0 disables the function "Printout of Service IDs" within the EFAS menu.

INTELLIC	
Smart Tachograph EFAS	
⏏ 12/06/2019 15:15 (UTC)	

SrvId	Printout type

12/06/2019 - 12/06/2019	If a printout period has been defined, it is printed here.

×⏏ 12/06/2019 10:34	Pictogram; start time of event/fault.
×31 S41 00h01	EFT (hex); SrvId; Duration

#####	
⏏ 12/06/2019 10:33	Marker for last SrvId printout. If no time stamp is known, no marker is printed.
#####	

!⏏ 12/06/2019 10:32	
×31 S41 00h02	SrvId S41 was detected for 2 minutes.

!⏏ 12/06/2019 10:04	
!11 S124 --h--	SrvId S124 is still active (--h--)

!⏏ 12/06/2019 09:02	
!03 S10 --h--	
...	
-----Σ-----	
ΣSrvId: ⏏	Total SrvIds within the print period and in the archive
S10 Σ (1)	
S41 Σ (2)	
S124 Σ (1)	
...	