

ABB specific vendor error codes
extensions for OCPP 1.6 Status
Notification message

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1. Version history

| Revision | Date | Reasons for revision | ABB Author Mikhail Kireev Christof Kaiser |
|----------|-------------------|---|---|
| 1.0 | 12 February 2019 | Initial document created | MK |
| 1.1 | 07 June 2021 | Main text rewritten, additional error codes added, table format reworked. | MK CK |
| 1.1.1 | 10 June 2021 | Reference to software versions added, language and formatting errors corrected. | MK CK |
| 1.2 | 10 November 2021 | Added "Customer Action", Review of stop reasons, Editorial changes. | CK |
| 1.3 | 4 February 2022 | Detail changes, e.g., threshold voltages included. | CK |
| | 18 February 2022 | Detail changes | CK |
| | 17 March 2022 | Included Indicative Error Types | CK |
| | 25 March 2022 | Payment stop reasons | CK |
| | 4 April 2023 | Minor details added | CK |
| | 5 May 2023 | Switching messages on in web portal | CK |
| | 1 June 2023 | Added Vendor Error Codes which are not Stop Reasons. | CK |
| | 15 June 2023 | Typos | CK |
| | 16 June 2023 | Added StopReason:VehicleWakeUpFailed, StopReason:UserAuthenticationTimeOut, StopReason:NoPowerAvailable. Changed formatting for tables and font. | CK |
| | 10 August 2023 | Added StopReason:TransformerOvertemperature and StopReason:DcGuardTrigger. Some detail changes. | CK |
| | 21 August 2023 | Fixed some table formatting. | CK |
| | 22 August 2023 | Changed description of StopReason:VehiclePluggedUnplugged | CK |
| | 13 September 2023 | Changed StopReason:VehicleWakeUpFailed | CK |

2. Status notifications

2.1. Message format

ABB has implemented StatusNotification message according to the OCPP 1.6 specification [1].

The StatusNotification.req message has the option to add vendor specific information, using the fields vendorId, vendorErrorCode and info. ABB opted to use the fields vendorErrorCode to provide additional information.

| FIELD NAME | FIELD TYPE | CARD. | DESCRIPTION |
|-------------|-----------------------------|-------|--|
| connectorId | integer connectorId >= 0 | 1..1 | Required. The id of the connector for which the status is reported. Id '0' (zero) is used if the status is for the Charge Point main controller. |
| errorCode | ChargePointErrorCode | 1..1 | Required. This contains the error code reported by the Charge Point. |
| info | CiString50Type | 0..1 | Optional. Additional free format information related to the error. |
| status | ChargePointStatus | 1..1 | Required. This contains the current status of the Charge Point. |

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| FIELD NAME | FIELD TYPE | CARD. | DESCRIPTION |
|-----------------|-----------------|-------|--|
| timestamp | dateTime | 0..1 | Optional. The time for which the status is reported. If absent time of receipt of the message will be assumed. |
| vendorId | CiString255Type | 0..1 | Optional. This identifies the vendor-specific implementation. |
| vendorErrorCode | CiString50Type | 0..1 | Optional. This contains the vendor-specific error code. |

Field info has the same length as vendorErrorCode: 50 characters. ABB has decided that it is not enough to provide extensive description within this limitation. Therefore, the info field is left empty. Instead, this document was created to provide more information about each vendorErrorCode value.

This is example of a StatusNotification message with an additional code in the vendorErrorCode field:

```
{
  "connectorId": 1,
  "errorCode": "OtherError",
  "vendorId": "com.abb.evci/event/v1",
  "vendorErrorCode": "StopReason:SoftError",
  "info": "",
  "status": "Faulted",
  "timestamp": "2020-12-22T09:47:36.523Z"}

```

An event will cause a StatusNotification message with respective status to be sent, where the vendor specific fields will provide more information.

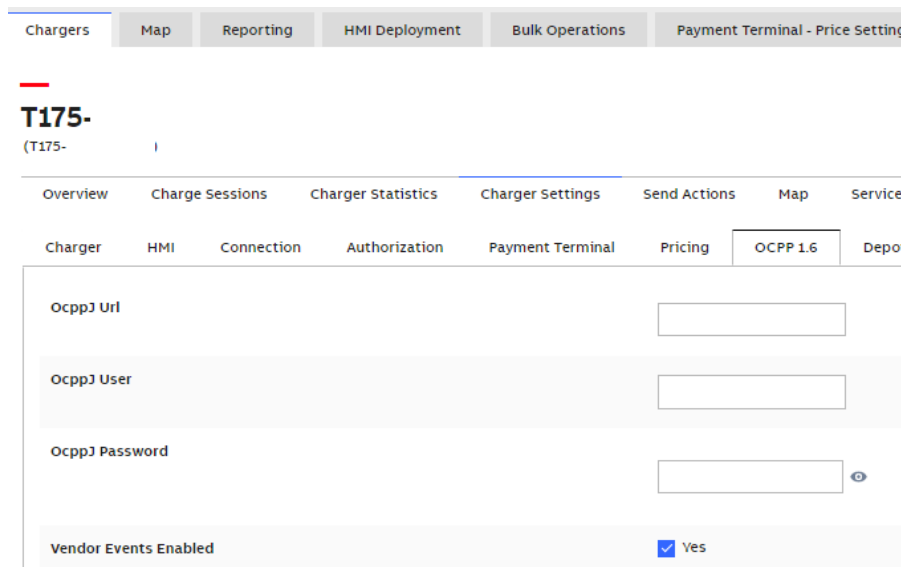
In the example above there is a message with the status “Faulted” and the vendorErrorCode “StopReason:SoftError”, providing mapping to additional information that can be found in this document.

Some notes on the values for other fields of the StatusNotification message:

1. The mandatory field errorCode contains the OCPP compliant code with best possible mapping according to type ChargePointErrorCode. If no mapping could be done, the value “OtherError” is used.
2. vendorErrorCode in StatusNotification.req is used in addition to the “regular” errorCode. If both of them are populated, the on vendorErrorCode will be more accurate than errorCode.
3. As any standard StatusNotification message, the vendor specific implementation uses the connector id to indicate the connector involved as well, where connectorId=0 is for the charger as such if the message is not related to a particular connector.

2.2. Switching on vendorErrorCode and conditions for sending the events

Sending the vendorErrorCodes can be enabled in the ABB Web tools by setting “Vendor Events Enabled”. By default, it is switched off for backwards compatibility.



Please note that StatusNotification messages are not guaranteed; they are not transactional messages according to OCPP definition. That means that they will only be sent when the connection to the Central System is available at the time of the event. If event or status change has happened during time of disconnection, the StatusNotification.req is not buffered and will not be sent when charger is connected to Central system again.

According to the OCPP specification “A Charge Point sends a notification to the Central System to inform the Central System about a status change or an error within the Charge Point.” [1]

However, there could be the case when an event happened which neither leads to a status change nor can be considered an error, but the information about such event is still useful. In such a case ABB decided to still send the StatusNotification message but with the same status of the charger or connector as it was sent before.

For example, if the charger was in “Available” state, a StatusNotification with the same status “Available” will be sent again, but with additional information in the field vendorErrorCode.

Please also take into account that information in vendorErrorCode is present not only when status is “Faulted”. There are situations when there is no charger failure and the charger operates as expected, but e.g., the error is related to the vehicle. In such cases additional information is provided with other statuses as well.

Known issue: A StatusNotification with the same status and vendorErrorCode might be sent more than once. This should not have a big impact on system behavior and ABB plans to fix it in one of the next software releases.

2.3. Relation of vendorErrorCode to stop reason in ABB Web tools

Values in vendorErrorCode of OCPP StatusNotification message directly correlate to the values of „Stop Reason Detailed“ for charging sessions in ABB WebTools.

Charge sessions can be found in the „Charge Session“ tab of a charger in the webtool:

Charge Sessions History

Between 06-03-2021 04-06-2021 Last 90 days

| Serial Number | Charge Session Id | Connector | Session Start Time | Session Stop Time | Duration (min:sec) | Energy Delivered | Stop Reason | Stop Reason Detailed |
|-------------------|----------------------|-----------|---------------------|---------------------|--------------------|------------------|------------------------|--------------------------|
| T175-IT1-1519-091 | 11504136358364971010 | 1 | 2021-06-04 09:26:17 | 2021-06-04 09:27:26 | 00:01:09 | 0 kWh | SR_USER | Forced Stop |
| T175-IT1-1519-091 | 11206808769033928705 | 1 | 2021-06-04 09:25:36 | 2021-06-04 09:26:17 | 00:00:41 | 0 kWh | SR_VEHICLE_NORMAL_STOP | SR_VEHICLE_STOP |
| T175-IT1-1519-091 | 13386383824259121156 | 1 | 2021-05-31 15:39:52 | 2021-05-31 16:06:02 | 00:26:10 | 0 kWh | SR_USER | Normal Stop |
| T175-IT1-1519-091 | 6644897431542562819 | 1 | 2021-05-31 14:56:03 | 2021-05-31 15:39:52 | 00:43:49 | 0 kWh | SR_USER | Normal Stop |
| T175-IT1-1519-091 | 13798570280878080002 | 1 | 2021-05-31 14:55:50 | 2021-05-31 14:56:03 | 00:00:13 | 0 kWh | SR_USER | Normal Stop |
| T175-IT1-1519-091 | 13743189555224248321 | 1 | 2021-05-31 14:55:19 | 2021-05-31 14:55:50 | 00:00:31 | 0 kWh | SR_USER | SR_VEHICLE_NOT_CONNECTED |
| T175-IT1-1519-091 | 8824638487253745665 | 1 | 2021-05-25 11:49:56 | 2021-05-25 11:52:04 | 00:02:08 | 0 kWh | SR_NONE | |

“Stop Reason Detailed” carries the same information but has a slightly different format.

In OCPP vendorErrorCodeField, every stop reason is preceded with the string „StopReason:“ followed by the actual reason which transformed to CamelCase.

Here are some examples of mapping stop reasons to vendorErrorCodes:

| Web Interface “Stop Reason Detailed” | OCPP “vendorErrorCode” |
|--------------------------------------|--------------------------------|
| SR_VEHICLE_STOP | StopReason:VehicleStop |
| SR_VEHICLE_NOT_CONNECTED | StopReason:VehicleNotConnected |
| Normal Stop | StopReason:NormalStop |

Note that in the web interface, there are fields “Stop Reason” and “Stop Reason Detailed”. Only the latter is translated to OCPP, although the prefix is “StopReason:” (so without “Detailed”).

There can be other vendorErrorCodes which are not prefixed by “StopReason:”, as described in section 0.

2.4. Charger Software versions

Below is overview of charger software versions in which StatusNotification messages are supported with additional information in vendorErrorCodes.

For software versions earlier than specified below please see version 1.0 of this document.

| Charger Model | First software version where supported |
|-------------------------------------|--|
| Terra T54 | 4.5.x |
| Terra HP | 1.5.x |
| Terra HVC (Depot box and OppCharge) | 1.5.x |
| Terra DC Wallbox | 1.5.x |
| Terra 94/124/184 | 1.7.x |
| Terra 365/185/65 | 1.7.x |

ABB status notification vendorErrorCodes

2.5. Stop Reasons

| vendorErrorCode | Description | Customer Action | Indicative Error Type |
|-----------------------------------|--|-----------------|-----------------------|
| StopReason:Invalid | Reason for stopping cannot be identified. | None | Info |
| StopReason:NoError | No error occurred, like a normal stop. | None | Info |
| StopReason:UserRequestedStop | User pressed the stop button on HMI. This stop reason is also used in HVC depot boxes, when the stop was due to the sequential charging controller. | None | Info |
| StopReason:ConnectorButtonPressed | CCS1 connector button is pressed by user. | None | Info |

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| | Proximity pilot (PP) voltage is higher than a threshold (10.5V). | | |
| StopReason: VehicleStop | The vehicle requested to stop the session by a driver request or internal trigger in the controller of the vehicle. This is not a stop of a session due to some error on vehicle side, e.g., communication protocol violation, but a stop according to standard. | None | Info |
| StopReason: IncompatibleVehicle | This vehicle cannot be charged on this outlet. It does not meet the required charging parameters supported by this charger. Typical case: CHAdeMO in Japan is limited to 450V, so if a car from outside Japan with a target of 500V is connected, it is incompatible. | Check car specification. | User |
| StopReason: IsolationTestFailed | Most common cause: Isolation resistance is too low (<100K Ohm between DC+/- and PE). In the case of pantograph this can be caused by weather circumstances, or the isolation measurement is disturbed, or the y capacity is too high to be able to do a proper measurement. If only one vehicle fails on this outlet and other vehicles can charge, most likely this is a vehicle problem. If the outlet cannot charge at all, the problem is likely in the IMI measurement system or noise on the grid. | Try different vehicle. If no vehicle can charge, contact ABB Service. | Temp |
| StopReason: CableCheckFailed | Isolation failure during cable check phase. | Contact ABB Service. | Charger |
| StopReason: BatteryFull | Stopped because vehicle battery is full. Almost not used as the vehicle would stop charging according to standard (VehicleStop). | None | Info |
| StopReason: BudgetExceeded | Stopped because the vehicle asked for or tried to draw too much power. | Check vehicle behavior. | User |
| StopReason: EmergencyStop | Charger emergency button is pressed by user (not: the emergency button in the vehicle). | Release emergency button. | Info |
| StopReason: ChargerError | Charging Protocol Interface (CPI) board error. The charger didn't work as expected. Probably a boxcheck failed. | Check charger detailed status (Box Checks in ABB Web tools). Contact ABB Service. | Charger |
| StopReason: ChargerContactorsProblem | There are 4 DC kilovac relay contactors in the charger. If any of the kilovac relays is not closing/opening this error will appear. On Terra T184, T124, T94 chargers, this indicates a problem with the interlink DC contactor. It also can indicate that the Emergency Button was pressed during a charge session. | Contact ABB Service. | Charger |
| StopReason: ChargerLoweringCurrentTimeout | This happens when, near to full charge, the vehicle requests reduction of current. If the charger does not follow the request within specified timeout of 400 ms vehicle will stop the session. | If happens frequently, contact ABB Service. | Temp |
| StopReason: ConnectorError | Possible reasons: Proximity Pilot voltage < 0.7V. Supply of the ACS (panto-down) was not giving the right feedback (this should not occur anymore). Control Pilot (CP) voltage out of expected range. | Contact ABB Service. | Charger |
| StopReason: ConnectorPilotError | 1. In case of Staubli connector being used, please check Staubli wiring at the charger terminal block. 2. Check wiring, connections at the CPI board side. | Contact ABB Service. | Charger |

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| | 3. If everything looks ok advice is to replace the CPI board. | | |
| StopReason: ConnectorPilotShortCircuit | Control pilot is in short-circuit (0V/State E). It can be caused by bad wiring. | Contact ABB Service. Check wiring. | Charger |
| StopReason: ConnectorTemperatureError | The connector (cable end going into the vehicle) is too hot. This also can happen due to a wrong measurement of a faulty PT1000 temperature sensor. The threshold is 90 degrees Celsius. A reason can also be a worn-out connector at charger or vehicle side. | Try with different vehicle. If this issue occurs repeatedly, please contact ABB Service. | Temp |
| StopReason: OutletError | This could be a problem of the: 1. CPI/IMI assembly. 2. CCB (if this can't provide enough power to the CPI board). 3. CAN cable between CCB and CPI. | Contact ABB Service. | Charger |
| StopReason: ChargerPreChargeTimeout | Pre-charge timeout is reached. Pre-charge must only be used for a limited time, which in total currently is 67 seconds. In the future, this may change to 30 seconds. (This timeout actually runs in the vehicle). | Check behavior of vehicle. | User |
| StopReason: ChargerVoltageDrop | Measured voltage is lower than expected. Possible reasons: AC input (power cabinet startup, K16, K20, K15), power module (faulty, DC busbar not connected, DC connector damaged), RCD tripped, RCD not wired correctly, DC cables between power cabinet and charge post not correctly connected. | Contact ABB Service. | Charger |
| StopReason: ChargerMaxVoltage | Maximum voltage exceeded. Can be caused by opening of contactors of the vehicle. Can be caused by losing a DC contact on the pantograph. | Check in vehicle contactors opened or pantograph lost contact. | User |
| StopReason: ChargerStopTimout | Vehicle takes too long to send the stop command. | Check vehicle behavior. | User |
| StopReason: ChargerConnectorPresenceLost | Charger was not able to pick the CP (control pilot) state changes from the vehicle, so charger thinks that no vehicle is connected. Or the CP line is lost during a charge session, due to disconnection of the outlet (without lock). In case this happens with several vehicles, advised to check the CP line, which goes from connector J12 1st and 6st pin, to the cable terminal, and then to the connector. Also happens when control pilot > 10.5V. ACS: During charge the pantograph loses contact. Can be caused by 'dirty contacts' or vehicle kneeling outside of the operation area of the pantograph. From software 1.7.0: Plugout (B2->A) during chargeParameterDiscovery leads to this error. | Check if pantograph lost contact, e.g., due to dirt or vehicle parking position. | User |
| StopReason: ChargerErrorCurrentDifference | The charger detected that the current difference is too large. Occurs in the case the vehicle is close to controlled voltage charging. A lot at shutdown scenario, declared after powerDelivery. This error happens more in CV mode (controlled voltage), so better use CC (controlled current). Also can happen during ramp up of UUGreen power modules when large current steps are used. | Better use controlled current (CC) instead if controlled voltage (CV). | Temp |
| StopReason: ChargerCanCommunicationLost | The power cabinet internal CAN bus communication is lost. | If this repeats, please | Charger |

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| | | contact ABB Service. | |
| StopReason: ChargerMcbTripped | Charger circuit breaker tripped. | Check if circuit breaker tripped. | Charger |
| StopReason: ChargerRcdTripped | The AC input (from the grid) Residual Current Device (RCD) tripped. | Check if RCD tripped. | Charger |
| StopReason: ChargerRcdCloseError | RCD closing error. Applies when charger allows RCD trips during charge session. | Check if RCD tripped. | Charger |
| StopReason: ChargerTemperatureError | The temperature of the cable end in the charger is too hot as it reached 80 degrees. The temperature of the power cabinet is high, likely due to the fan in the power cabinet not running. | Check if fan in the cabinet is working. | Charger |
| StopReason: ChargerNeutralMismatch | Charger neutral mismatch. | Check wiring, contact ABB Service. | Charger |
| StopReason: ChargerOutletDetection | This could be a problem of the: 1. CPI/IMI assembly. 2. CCB (if this can't provide enough power to the CPI board). 3. CAN cable between CCB and CPI. This is related to configuration parameters of the CPI and other due to failure in the board. | Contact ABB Service. | Charger |
| StopReason: VehicleProtocolError | From software 1.5.1 (Terra 53/54 from 4.5.1) onwards, this is replaced by more detailed StopReason:Est... . This stop reason is an umbrella stop reason. From the charger's perspective the vehicle has violated charging protocol specifications. This could be an interoperability problem. Examples: No SLAC communication started. Sudden C to B change during power delivery, followed by ReadyToChargeState{0} from vehicle. Vehicle does not respond to Wake up (B1 -> B2). | Check vehicle behavior. Update software to get the more detailed error. | User |
| StopReason: PowerPortVipError | The powerport VIP (voltage, current, power) value is showing zero. For example: The voltage is zero due to the MCB of the respective power module is not switch on. | Check if power modules are working. | Charger |
| StopReason: PowerportPowerError | Power module does not respond fast enough. This can happen when the vehicle requests >>10 times a 0 to X ampere transition. Or other power module related control issues. All Power Modules are disabled - No charging allowed. Most likely there is an error with the power modules and need to be replaced. If this occurs too often, then further troubleshooting. | If happens frequently, change power module. | Charger |
| StopReason: PowerPortFanFailure | All power modules affected by a fan failure. Check if the Power Module fan is receiving input power (230V/AC). | Check if the power module fan is receiving input power (230V/AC). | Charger |
| StopReason: PowerPortOverheat | All power modules show a high temperature due to the fan not running. | Check if the power module fan is working. | Charger |
| StopReason: PowerPortInterlock | Interlock of power modules active. | Contact ABB Service. | Charger |

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| StopReason: PowerPortErrorOther | Umbrella error for any other power modules related errors. | If repeats, please contact ABB service | Charger |
| StopReason: VehicleErrorReversePolarity | The polarity of the vehicle is reversed. | Check polarity of vehicle. | User |
| StopReason: VehicleErrorVoltageApplied | There is a (dangerous) voltage applied to the DC output when this is not expected. If the charger detects a higher than 80 volts at the vehicle inlet while establishing a new charge session, it aborts charge session since this would not be safe as per the standard. | Contact ABB Service. | User |
| StopReason: LockError | Unable to lock the connector, no dangerous voltage present. | Check if connector can lock. | User |
| StopReason: UnlockError | Unable to unlock the connector, no dangerous voltage present. | Check if connector can unlock. | User |
| StopReason: LockTampering | Tampering with the connector lock detected. | Check if connector locks | User |
| StopReason: CableError | Charger cannot detect charging cable type e.g., after cable replacement. Please check if cable installed properly. | Contact ABB Service. | Charger |
| StopReason: GlobalInterlockFail | Global interlock activated. Can be related to: RCD tripped, Emergency Button pressed, One of the Doors open, CCB Board issue, disconnected connector while there is still high voltage on the outlet, DC Guard of Dynamic DC found an error. On DC Wallbox in charger.log (not EVE) SR_GLOBAL_INTERLOCK_FAIL is shown every hour as a result of the RCD self-test. | Check RCD, emergency button, close door. | Charger |
| StopReason: VehicleShiftPosition | Vehicle shift position indicator is incorrect or vehicle is in drive mode. | Put vehicle is parking mode. | User |
| StopReason: VehicleBatteryTemperatureOutOfRange | Vehicle communicated that its battery temperature is out of range. | Check vehicle. | User |
| StopReason: VehicleLockError | Vehicle is unable to lock the connector. | Check if connector locks. | User |
| StopReason: VehicleBatteryMalfunction | Vehicle communicated its battery malfunction. | Check vehicle. | User |
| StopReason: VehicleCurrentDifference | Vehicle detected current is not within specs. | Try different vehicle, check vehicle behavior. | User |
| StopReason: VehicleVoltageOutOfRange | Vehicle detected voltage is out of range. | Try different vehicle, check vehicle behavior. | User |
| StopReason: VehicleError | General vehicle error. The vehicle did an unexpected behavior according to the standards of charging, like change the state unexpectedly, did not reply to a message with the expected way in the standards. | Check vehicle behavior. | User |
| StopReason: BoardPowerSupplyError | Charger auxiliary power supply (24V) has issues. | Check 24V power supply. | Charger |
| StopReason: OcmNotAlive | Over current monitor not alive. | Contact ABB Service. | Charger |
| StopReason: | Interlock by over current monitor is not functioning properly. | Contact ABB Service. | Charger |

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| OcmInterlockVerificationError | | | |
| StopReason: OcmCableRatingMismatch | Over current monitor and cable rating does not match. | Contact ABB Service. | Charger |
| StopReason: OnboardEnergyMeterError | Vehicle onboard energy meter error. | Contact ABB Service. | User |
| StopReason: VehicleWeldingDetectionTimeout | Vehicle contactor welding detection request took too long. This timeout depends on the vehicle. | Try different vehicle. | User |
| StopReason: CableCheckCurrentRunning | The isolation test failed during this session. Most likely one of the power modules is defective and needs to be replaced. You might need to test each power modules individually to find which one is causing the fault. It could also be that DC power path has high resistance (long cable, increase resistance in connector). Power module testing is done by ABB. | Contact ABB Service to check power modules. | Charger |
| StopReason: CableCheckVoltageTooLow | During cable check (isolation test), the voltage measured by the outlet is too low. Possible reasons: the power module that was selected is not functioning, the AC relay is malfunctioning, power modules are not switching on, or not receiving enough input power, power module MCB tripped, DC cables between power cabinet and charge post are not correctly connected, DC contactors connected to CPI not working correctly, general CAN message latency. | Contact ABB Service to check power modules. | Charger |
| StopReason: CableCheckVoltageTooHigh | The session has failed because the power module (PM) voltages were too high during the "cable check" (isolation test) stage of the charge session. This can be caused by the PM receiving too much power from the grid. A defective PM can also cause this issue. | Check grid voltage and power module. | Charger |
| StopReason: CableCheckVoltageNotDropping | Voltage is not dropping when expected during the cable check. Reason can be a broken CPI. Also can be caused by a connector inserted only partly. | Contact ABB Service. | Charger |
| StopReason: ChargerTimeCompleted | Stopped because car has been charging long enough. The time configured for the max charge time parameters in the charger setting page in ABB Web tool passed. The charger must stop the session as per configuration. | None | Info |
| StopReason: VehicleNotConnected | No state 'B' was detected. The connection between the charger and the vehicle is interrupted. This happens e.g., if a remote start is sent (via OCPP from an user app) without a vehicle being connected. It happens more with CHAdeMO as it is difficult to detect if a car is connected. | Make sure the vehicle is connected. Try different vehicle. | User |
| StopReason: SoftError | Software induced error, typically when the watchdog found that one of the software components (Lithos) is not running. This also can happen once after startup when Lithos is not up and running yet. Can lead to phantom sessions. | None | Info |
| StopReason: StoppedByVehicle | Stopped by vehicle. Used on AC outlet only, typically by Renault Zoe. | None | Info |
| StopReason: AcsErrorExtending | Problem happened that prevent the pantograph (panto-down) from extending. | Check extending of pantograph. | User |
| StopReason: AcsErrorRetracting | Pantograph (panto-down) error retracting. | Check retracting of pantograph. | User |
| StopReason: AcsExtendedTimeout | Extending the pantograph (panto-down) takes too long, can be caused by a malfunctioning pantograph motor or lowering arm. | Check extending of pantograph. | User |

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| StopReason: AcsRetractedTimeout | Retracting the pantograph (panto-down) takes too long, can be caused by a malfunctioning pantograph motor or lowering arm. This happens after 30 seconds (could be extended to 60 seconds in the future). The stop reason is normally not visible, as the StopReason:VehicleStop already closed the session, and the retracting only happens after that. | Check retracting of pantograph. | Charger |
| StopReason: AcsErrorAlignment | No complete charging circuit when the pantograph is lowered (panto-down). Normally caused by misalignment of the vehicle. Other cause can be dirty contact or malfunctioning extended sensor. | Check if pantograph lost contact, e.g., due to dirt or vehicle parking position. | User |
| StopReason: ChargerCabinetOvp | The Over Voltage Protection in cabinet is tripped, no charging possible. | Check over voltage protection. | Charger |
| StopReason: ChargerCableCoolerFailure | Cable cooler (chiller) is not reachable, or gives an error, or the cable type is configured wrongly and expects a cooler while there is none. | Check if right cooler(chiller) is configured. | Charger |
| StopReason: ChargerCableCoolerTemperature | Temperature of cooler out of range | Try with warmer ambient temperature. | Temp |
| StopReason: ChargerCableTemperature | The cable is too hot at the charger end, charging possible after cool-down. Can also happen due to a wrong measurement of a faulty PT1000 temperature sensor. Can also happen due to an undesired hardware configuration. The cut-off temperature is 77 Celsius (85 for Radox 500). | Wait for cable cooling down. | Temp |
| StopReason: ChargerContactorTemperature | Contactor (in the charger) temperature is out-of-range, charging possible after cool-down. | Wait for cable cooling down. | Temp |
| StopReason:Est.... | A vehicle protocol error for DIN or ISO protocols occurred. For a first analysis, the details of the state in which session stopped are encoded in the message. For charge protocol experts, this gives an estimation (Est) of the cause of the issue. The format is Est{Start Nostrart}{A B C D E F}Different-states-and-errors. Start/Nostrart indicates if session has started A B ... indicates session state in which session was stopped. DifferentStateAndErrors – detailed description of error Example: EstStart_CblChkSt_B2_PchargeErr EstUndef indicates that no further hint can be given. There is a separate documentation available about how to interpret these Est... stop reasons. It requires to be familiar with the charge protocols. | Check vehicle behavior. | User |
| StopReason:EstCorrect | Normal stop. | None | Info |
| StopReason:Blocked | ID tag for OCPP authorization is blocked on server. | Use valid ID tag. | Info |
| StopReason:Expired | ID tag for OCPP authorization is expired on server. | Use valid ID tag. | Info |
| StopReason: InvalidOnServer | ID tag is marked as Invalid by the OCPP server. This also happens if Autocharge is turned on on the charger, but not used on the OCPP server and therefore rejected. Before sw 1.5. Autocharge was used to | Check if ID tag is valid, try different ID tag. | Info |

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| | communicate VID. Communicated Autocharge IDs in OCPP start with "VID:", RFID without. | Switch off Autocharge. | |
| StopReason: InvalidOnCharger | ID tag is marked as invalid by the charger software. | Check if ID tag is valid, try different ID tag. | Info |
| StopReason: RequestRejected | Charger software rejects request for authorization in scenarios where it is not applicable. | Check if ID tag is valid, try different ID tag. | Info |
| StopReason: WrongMessage | Wrong parameters provided for the Authorization request or in the Authorization response messages. | Check communication with service for standard compliance. | User |
| StopReason: NoMatchingIDs | ID tags for OCPP Start and Stop do not match. | Use same ID tag to start and stop the session. | User |
| StopReason: ServerUnreachable | The authorization failed as the server could not be reached (timeout for reaching server is 40 seconds). | Check if server is reachable. | User |
| StopReason: NoCardPresented | The authorization failed because the user did not present a card. | Ask user to present a card at the right position | User |
| StopReason: AuthorizedStop | Authorization was used to stop charging where authorization is required for stop. | None | Info |
| StopReason: StoppedByPT | The payment terminal stopped the payment process. | None | Info |
| StopReason: NotAccepted | The payment terminal did not accept the payment request. | None | Info |
| StopReason: ForcedStop | Used when it is required to stop the charging without an authorization. For example, in the UnlockConnector situation. | None | Info |
| StopReason: NormalStop | Normal stop that does not fall into any of other categories. | None | Info |
| StopReason: VehicleNotConnected | There is no vehicle connected. | Connect vehicle. | Info |
| StopReason: ImiDisconnectedFromDcbus | From IMI board 1.6: CPI and IMI measure different voltages. Possible reason: CPI disconnected from DC bus and therefore measures 0 Volt. Using hardware IMI 1.6 with software <1.7 also can cause this. | Contact ABB Service. | Charger |
| StopReason: [no further text] or StopReason:None | This happens e.g., when user plugs in and plugs out after a while without any further action. Session start and stop time shows the plug in and plug out events. This is a justified empty session, with no authorization and no energy. In software versions before 1.7 this also could happen in error. | Ask user to act like indicated on the screen. Check session in EVE. Contact ABB Service. | Info |

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| StopReason:VehiclePluggedUnpluggedD | A plug-in followed by a plug-out was detected, but no authorization attempt was made. Likely, the user did not do any further action. Another cause can be vibrating contacts (hardware issue) which may cause the control pilot to change it state to A (disconnected). If authorization is disabled (free vending), this error does not occur as the session is always authorized. | Leave connector plugged in and authorize. Check for contact issues. | User |
| StopReason:VehicleWakeUpFailed | The vehicle failed to wake up and did not start High Level Communication: After plugin or BCB toggle, PWM generation started. However, after state B2, a timeout (40s) occurred waiting for the first SLAC message. | Check vehicle behavior. | User |
| StopReason:UserAuthenticationTimeout | (Expected in software 1.7.3) During ContractAuthentication (DIN) or Authorization (ISO) V2G state, the session is still not authorized. After ongoing timeout (55s) session is stopped. | Try to authorize faster. | User |
| StopReason:NoPowerAvailable | (Expected in software 1.7.3) During ChargeParameterDiscovery V2G state, budget is still not allocated. After ongoing timeout (55s) session is stopped. | Check power budget. | Info |
| StopReason:TransformerOvertemperature | (From software 1.7.1) Transformer temperature is >= 100 Degrees Celsius. | Contact ABB Service. | Charger |
| StopReason:DcGuardTrigger | (Expected in software 1.8) On a Dynamic DC system, the DC Guard triggered a global interlock. | Contact ABB Service to check DC Guard wiring, and welded contactors. | Charger |

2.6. Other Vendor Error Codes (other than Stop Reasons)

Besides the stop reasons, some other vendor error codes exist.

In current software versions, typically the stop reasons as listed above are reported rather than these. For completeness and older software versions, they are still listed.

| vendorErrorCode | Description | Customer Action | Indicative Error Type |
|--|---|-----------------|-----------------------|
| EmergencyButtonPressed | The emergency button was on the charger was pressed. | | User |
| EmergencyButtonReleased | The emergency button was on the charger was released again. | | User |
| DoorOpen | The door was opened | | User |
| DoorClosed | The door was closed. | | User |
| ChargeNotStarted: VehicleNotConnected | See StopReason:VehicleNotConnected. | | User |
| ChargeNotStarted: VehicleShiftPosition | See StopReason:VehicleShiftPosition. | | User |
| ChargeNotStarted: LockError | See StopReason:LockError. | | User |
| ChargeStopped: CableCheckError | There was an error during cable check. | | Charger |
| ChargeStopped: ChargerError | See StopReason:ChargerError. | | Charger |

| | | |
|-------------------------------------|--|------|
| ChargeStopped: VehicleProtocolError | See StopReason:VehicleProtocolError. | User |
| ChargeStopped: VehicleError | See StopReason:VehicleError. | User |
| ChargeStopped: IsolationTestFailed | See StopReason:IsolationTestFailed. | Temp |
| ChargeStopped: CableRemoved | The cable was removed from the vehicle. | User |
| ConnectorPlacedIn Holder | The connector was placed back correctly. | Info |
| ConnectorRemovedFromHolder | The connector was removed from the holder. | Info |

2.7. Indicative Error Types

In the table above, the column “Error Type” gives in indication of the type of error, although often multiple reasons can cause the same error as described here:

| Abbreviation | Meaning | Definition |
|--------------|-------------------|---|
| Charger | Charger Problem | Hardware is not able to run a charge session, e.g., because of a blown fuse. |
| Temp | Temporary Problem | The charger has detected a temporary condition that may cause an error or cause the equipment to fail, e.g., high temperature. Charging is possible under other conditions, e.g., after a waiting time. |
| User | User Error | A user, vehicle, or customer OCPP issue caused a problem. For example, the vehicle behavior caused the session to end prematurely. |
| Info | Information | Information that does not impact the operation of the charger, e.g., charge session was stopped by user, or the Charger rejecting a wrong RFID tag on purpose. |

3. Reference documentation

[1] Open Charge Point Protocol 1.6, edition 2 FINAL, 2017-09-28