



Certificate Holder: WONIK PNE Inc.
Certificate Number: OCA.0201.0159.CS
Product Type: Charging Station
Product Designation: VE180U
Firmware Version: 1.180.1
Certification Date: May 18, 2026

This certificate attests that the above mentioned product successfully completed certification testing in conformance with the reference specification OCPP 2.0.1 (Edition 4 FINAL, 2025-12-03 including Errata 2026-04). The optional OCPP protocol features that are covered by this certificate can be found in the Abstract of the Test Report that is part of this certificate.

Test cases have been performed as described in the test report referred to below. The results and remarks can be found in this complete test report.

Applied	Performed by / On	Document Evidence
Conformance testing according to the test specification referenced by the test report	Korea Testing Certification institute May 18, 2026	KTC2026-00332_OCPP-2.0.1-PICS-CS-3.0.3_260520

The abstract of test report is an integral part of this certificate. This certificate is valid from the Certification Date specified above. This certificate is only applicable to the product designation described above and permits the use of the OCPP logo as laid down in the OCA certification logo license agreement on this product only.

This certificate shall neither be tendered nor accepted by any party as a guarantee covering quality of a product which includes OCPP. The Open Charge Alliance, and/or its agents, including, inter-alia, test laboratories, disclaim liability for any damages or losses incurred by the certified company or by any other party resulting from reliance on the results of OCPP certification testing.

For the Open Charge Alliance:

ONOPH CARON
Chairman

Abstract of the Test Report

Test Report OCPP 2.0.1 Certification

Test laboratory:	Korea Testing Certification institute
Location:	Gyeonggi-do, Korea
Test Report Reference:	KTC2026-00332
Test Location	KTC Lab, Gyeonggi-do, Korea
Product Designation:	VE180U
Vendor name:	WONIK PNE Inc.
Device Under Test:	Charging Station
Firmware Version:	1.180.1
Config ID:	9DBE3596-3E942D45

Test Result Summary for the Certified Functionalities

Certification Profile	Test Result	Description
Core	Pass	Basic Charging Station, functionality for booting, authorization, configuration, transactions, remote control, secure firmware updates and Security Profile 2.
Advanced Security	Pass	Support for TLS with client authentication.
Smart Charging	Pass	Support for Smart Charging, to control charging.
ISO 15118 Support	Not Tested	Support for ISO 15118 Smart Charging and Plug and Charge authorization.

Hardware Feature Set

The Hardware Feature set is the actual set of relevant hardware properties of the product tested, that influence the OCPP messaging behavior. In the table below you can see for each hardware feature relevant for OCPP whether this is applicable for this product.

ID	Feature	Supported / Present
HFS-1	Has a detachable cable	No
HFS-2	Has a fixed cable	Yes
HFS-3	Has AC support	No
HFS-4	Has DC support	Yes
HFS-5	Has 1 phase support	No
HFS-6	Has 2 phase support	No
HFS-7	Has 3 phase support	No
HFS-8	No. EVSEs	2
HFS-9	Communication technology	Ethernet
HFS-10	RFID readers	Single
HFS-11	DC power level	180
HFS-12	Number of displays	1

EVSE	Current	Phases	Connector	Type	Cable Type
1	DC		1	cCCSI	Fixed Cable
2	DC		1	cNACS	Fixed Cable



Optional Features

The OCPP specification contains many implementation options that can be selected by a vendor, often in the form of optional message fields or configuration variables, that can be used to support advanced functions. Whereas the certification profiles determine which OCPP functionality is implemented, the features describe how much of a certain functionality in a profile has been implemented. The tables below indicate per certification profiles, for each available optional feature within this profile, whether this has been implemented in this product and tested for conformance or not. Please refer to part 5 of the OCPP specification for the list of optional features and the reference to the relevant use cases in part 2 of the OCPP specification.

Core

ID	Core Features	Supported / Present
C-01	Support for offline authorization of transactions	Yes
C-02	Support for allowing Offline Authorization for Unknown Ids	No
C-03	Support for maximizing energy for invalid ids	No
C-04	Support to limit StatusNotifications	No
C-06	Authorization status after cable disconnected on EV side	
C-06.1	Support for maintaining authorization when cable disconnected on EV side	Yes
C-06.2	Support for not maintaining authorization when cable disconnected on EV side	Yes
C-07	Support for using a Master Pass for charging stations with UI	Yes
C-08	Support for using a Master Pass for charging stations without UI	No
C-09	Supported Transaction Start points	
C-09.1	Start transaction options - EVConnected	Yes
C-09.2	Start transaction options - Authorized	Yes
C-09.3	Start transaction options - DataSigned	No
C-09.4	Start transaction options - PowerPathClosed	No
C-09.5	Start transaction options - EnergyTransfer	No
C-09.6	Start transaction options - ParkingBayOccupancy	No
C-10	Supported Transaction Stop points	
C-10.1	Stop transaction options - EVConnected	Yes
C-10.2	Stop transaction options - Authorized	Yes
C-10.3	Stop transaction options - PowerPathClosed	No
C-10.4	Stop transaction options - EnergyTransfer	No
C-10.5	Stop transaction options - ParkingBayOccupancy	No
C-12	Unlocking of connector when cable disconnected on EV side	

ID	Core Features	Supported / Present
C-12.1	Support for unlocking connector when cable disconnected on EV side	No
C-12.2	Support for not unlocking when cable disconnected on EV side	Yes
C-13	Support for Reset per EVSE	No
C-14	Support for retrieving / deleting CustomerInformation - CustomerIdentifier	No
C-20	Allowing New Sessions Pending a FirmwareUpdate	No
C-21	Support for queuing all or only Transaction related messages until they are delivered to the CSMS	No
C-23	Supported time sources	Heartbeat
C-25	Support for setting a TimeOffset	No
C-26	Support for setting the TimeZone	No
C-28	Toggle sending clock aligned meter values when a transaction is ongoing / Idle	No
C-29	TriggerMessage	
C-29.1	Trigger message - MeterValues	No
C-29.2	Trigger message - TransactionEvent	No
C-29.3	Trigger message - LogStatusNotification	No
C-29.4	Trigger message - FirmwareStatusNotification	No
C-29.5	Trigger message - StatusNotification	No
C-29.6	Trigger message - BootNotification	No

ID	Authorization Options for Local Start	Tested During Certification
C-30	Authorization - using RFID ISO14443	Yes
C-31	Authorization - using RFID ISO15693	No
C-32	Authorization - using KeyCode	No
C-33	Authorization - using locally generated id	No
C-34	Authorization - MacAddress	No
C-35	Authorization - NoAuthorization	No

ID	Authorization Options for Local Stop	Tested During Certification
C-70	Authorization - using RFID ISO14443	Yes
C-71	Authorization - using RFID ISO15693	No
C-72	Authorization - using KeyCode	No
C-75	Authorization - NoAuthorization	No

ID	Authorization Options for Remote Start	Tested During Certification
C-36	Authorization - using RFID ISO14443	Yes
C-37	Authorization - using RFID ISO15693	No
C-38	Authorization - using centrally, in the CSMS generated id	No
C-39	Authorization - NoAuthorization	No

ID	Metervalues	Tested During Certification	Supported According to Vendor
C-40	Supported MeterValue Measurands		
C-40.1	SampledTxBegan Measurands	Energy.Active.Import.Register	Energy.Active.Import.Register Power.Active.Import Power.Offered Current.Import Voltage
C-40.2	SampledTxUpdated Measurands	Energy.Active.Import.Register	Energy.Active.Import.Register Power.Active.Import Power.Offered Current.Import Voltage
C-40.3	SampledTxEnded Measurands	Energy.Active.Import.Register	Energy.Active.Import.Register Power.Active.Import Power.Offered Current.Import Voltage
C-40.4	AlignedData Measurands	Energy.Active.Import.Register	Energy.Active.Import.Register Power.Active.Import Power.Offered Current.Import Voltage
C-40.5	AlignedDataTxEnded Measurands	Energy.Active.Import.Register	Energy.Active.Import.Register Power.Active.Import Power.Offered Current.Import Voltage

ID	Cipher Suites	Supported / Present
C-41	Supported Cipher Suites	TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384

ID	Core Features	Supported / Present
C-42	Signed Metervalues	No
C-43	Install Firmware with ongoing transaction	No
C-47	Support for falling back to default OCPP reconnection mechanism when NetworkConnection profile connection has failed	No
C-48	Authorization of remote start	
C-48.1	Option for authorization in case of a remote start	Yes
C-48.2	Option for no authorization in case of a remote start	Yes
C-58	Option for disabling remote authorization	No
C-49	Authorization Cache	No
C-59	Option for disabling remote authorization for cached invalid idTokens	No
C-51	Configurable TxStartPoint	No
C-52	Configurable TxStopPoint	No
C-53	Support for lifetime cached token	No
C-54	Supported policies for replacing cached entries	No
C-56	Support for providing the SummaryInventory	Yes
C-57	Support for cancelling ongoing log file upload	No
C-60	Support for cancelling ongoing firmware update	Yes
C-61	Security Profile 1 - Unsecured Transport with Basic Authentication	Yes

ID	Reservations	Supported / Present
R-0	Support for Reservation	Yes
R-1	Support for reservations of connectorType	No
R-2	Support for reservation of unspecified EVSE	Yes
R-3	Support for disabling Reservations	No

ID	Advanced Device Management	Supported / Present
DM-0	Support for Advanced Device Management	Yes
DM-3	Queue notifyEventRequest messages for specific severities	No

ID	Local Authorization List Management	Supported / Present
LA-0	Support for Local Authorization List Management	Yes

ID	Local Authorization List Management	Supported / Present
LA-1	Authorization list support	No
LA-3	Option for disabling remote authorization for invalid idTokens stored at the Local Authorization List	No

ID	Advanced User Interface	Supported / Present
UI-0	Support for Advanced User Interface	Yes
UI-1	Supported message priorities	
UI-1.1	AlwaysFront	Yes
UI-1.2	InFront	No
UI-1.3	NormalCycle	Yes
UI-2	Supported message formats	
UI-2.1	ASCII	No
UI-2.2	HTML	No
UI-2.3	URI	No
UI-2.4	UTF8	Yes

Advanced Security

ID	Certification Profile: Advanced Security	Supported / Present
AS-2	Additional root certificate check mechanism implemented	No
AS-3	Update Charging Station Certificate - CertificateSignedRequest Timeout	No

Smart Charging

ID	Certification Profile: Smart Charging	Supported / Present
SC-2	Supported charging rate units	
SC-2.1	A	Yes
SC-2.2	W	No

Additional Questions

The table below lists a number of questions that are needed for determining the complete list of conformance test for this product.

ID	Additional Questions for Lab Testing	Answer
AQ-1	Can the last CSMSRootCertificate be removed?	No
AQ-2	Does the Charging Station have a cable lock, which prevents the EV driver to connect the EV and EVSE before authorization?	No
AQ-3	Can the last ChargingStationCertificate be removed?	No
AQ-4	Is there at least one unsupported NumberOfPhases?	No
AQ-5	Does the Charging Station have at least one hardWired monitor?	No
AQ-6	Does the Charging Station have a pre-configured monitor?	Yes
AQ-7	Is your Charging Station able to download firmware while there is an ongoing transaction?	No
AQ-8	Does your Charging Station enforce a selection of EVSE prior to authorization?	No
AQ-9	Does your Charging Station support charging an EV using IEC 61851-1?	No
AQ-10	Does your Charging Station support setting a Delta monitor on the WriteOnly component.variable SecurityCtrlr.BasicAuthPassword?	No
AQ-11	Does your Charging Station support a combined charging station Certificate	No
AQ-18	Does your Charging Station have at least one connector with an mechanized locking mechanism on Charging Station side?	No

Other Relevant Settings

The table below lists a number of settings that are needed for configuring the test setup for the conformance test for this product.

ID	Limit / Setting	Value
ORS-1	ItemsPerMessageGetReport	10
ORS-2	ItemsPerMessageGetVariables	10
ORS-3	ItemsPerMessageSetVariables	10
ORS-4	BytesPerMessageGetReport	10240
ORS-5	BytesPerMessageGetVariables	10240

ID	Limit / Setting	Value
ORS-6	BytesPerMessageSetVariables	10240
ORS-7	Minimum MessageAttemptIntervalTransactionEvent supported	1
ORS-8	Maximum MessageAttemptIntervalTransactionEvent supported	3600
ORS-9	Minimum SampledDataTxUpdatedInterval supported	1
ORS-10	Maximum SampledDataTxUpdatedInterval supported	3600
ORS-11	Minimum HeartbeatInterval supported	1
ORS-12	Maximum HeartbeatInterval supported	3600
ORS-14	Minimum WebSocketPingInterval supported	0
ORS-15	Maximum WebSocketPingInterval supported	120
ORS-16	WebSocketPingInterval	60

ID	Security Related Settings	Value
ORS-17	Maximum CertificateEntries supported	10
ORS-18	MaxCertificateChainSize	10240

ID	Local Authorization List Management	Value
ORS-19	LocalAuthListEntries	100
ORS-20	ItemsPerMessageSendLocalList	10
ORS-21	BytesPerMessageSendLocalList	10240

ID	Certification Profile: Smart Charging	Value
ORS-22	ChargingProfileMaxStackLevel	10
ORS-23	PeriodsPerSchedule	24
ORS-28	ChargingProfilesEntries	10

ID	Firmware Management Settings	Value
ORS-24	Supported file transfer protocols	HTTP HTTPS

ID	Advanced Device Management	Value
ORS-25	ItemsPerMessageSetVariableMonitoring	10
ORS-26	BytesPerMessageSetVariableMonitoring	10240
ORS-29	Preconfigured Monitor Id	2
ORS-31	Numeric Monitor Component.Variable	EVSE.Power
ORS-32	Numeric Monitor Value	100
ORS-33	Non-Numeric Monitor Component.Variable	EVSE.AvailabilityState
ORS-34	Non-Numeric Monitor Value	Available
ORS-35	Threshold Monitor With MaxLimit Component.Variable	EVSE.Power
ORS-36	MaxLimit Monitor Value	180001
ORS-37	Threshold Monitor Component.Variable	EVSE.Power
ORS-38	Lower Threshold Monitor Value	0.00
ORS-39	Upper Threshold Monitor Value	100.00
ORS-40	Non-Trigger Threshold Monitor Value	100.00

ID	Advanced User Interface	Value
ORS-27	NumberOfDisplayMessages	10
ORS-41	Primary Display Component	Display

Vendor Specific Settings

The table below should contain all relevant non-OCPP settings of the System Under Test that are relevant for the test laboratory and for the correct OCPP-compliant functioning :

Configuration Setting	Configured Value	Description
Serial Number	DC180K-1	BootNotification serialNumber
Basic Auth Username	VE180U	Profile 1/2 HTTP Basic Auth
Basic Auth Password	pnesystemsABCDEFG123	Profile 1/2 HTTP Basic Auth
Station ID	1000001	site.toml ocpp.station_id
Charger ID	1	site.toml ocpp.station_id
CCU Serial Port	COM2	Hardware Communication Port
RFID Serial Port	COM5	RFID Reader Communication Port
Cable Type	Permanently attached	Fixed Cable
Connector Type	cCCSI/cNACS	Connector Type

Performance Measurement Result

The tables below shows the list of key performance indicators that are measured during the conformance test. The first table indicates the values that the vendor indicates that are valid maximum values for this product. The second table lists the actual performance measurements during the tests performed in a controlled environment.

Name	Max Value	Unit	Description
OCPP response time	30	seconds	The response time for when waiting for an OCPP response message after sending an OCPP request message. This entails all OCPP messages. Messages to the DUT can be handled within this timeout.
OCPP triggered function response time	121	seconds	The response time used when waiting for an asynchronous OCPP report after requesting this report.
Transaction authorization time by RequestStartTransactionRequest	30	seconds	The time between a RequestStartTransactionRequest and the corresponding TransactionEventRequest. Only cases where the RequestStartTransactionRequest immediately results in an authorization followed by a TransactionEventRequest, without the need of any additional manual actions or chargingState transitions inbetween are included.
Transaction authorization end time by RequestStopTransactionRequest	30	seconds	The time between a RequestStopTransactionRequest and the corresponding TransactionEventRequest. Only cases where the RequestStopTransactionRequest immediately results in an end of the authorization followed by a TransactionEventRequest, that do not contain transactionInfo.chargingState = EVConnected are included.

Name	Min Value	Max Value	Average Value	Unit
OCPP response time	0.31	1.08	0.49	seconds
OCPP triggered function response time	0.33	4.46	1.19	seconds
Transaction authorization time by RequestStartTransactionRequest	0.33	18.20	1.17	seconds
Transaction authorization end time by RequestStopTransactionRequest	not measurable	not measurable	not measurable	seconds

Communication technology used during performance measurement	Ethernet
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Statement of Approval

Vendor		
Name	YeasI Moon	Date: 2026-05-18
Company	WONIK PNE Inc.	Signature:
Department	R&D Team	
Position	Manager	
Location	Hwaseong, Korea	

Test Laboratory		
Name	Hye Min Kwon	Date: 2026-05-18
Name reviewer	SOL CHO	Signature:
Company	Korea Testing Certification institute	
Department	EV Charging&Power Transfer Center	
Position	Research engineer	
Location	Gyeonggi-do, Korea	

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