Appendix Detailed Stipulations for Echonet Device Objects

Release information (as of August 7th 2001)

a) Version1.0	March 18th	2000 released	Open to the consortium member
	July	2000	Open to the public
b) Version1.01	May 23rd	2001	Open to the public
c) Version2.00	August 7th	2001	Open to the consortium member

Notes: On and after Version2.00, Powerline communication protocol has drawn together as Powerline communication A.

Contents

Chapter 1 Detailed Stipulations for Device Objects

This Appendix describes detailed property configurations of the device objects of class groups (class group codes 0x00 to 0x05) corresponding to device objects.

Each class in this Appendix is inherited from properties of the device object super-class specified in Part 2 ECHONET Communications Middleware Specification, 9.3 Stipulations for Device Object Super-classes. Accordingly, the device mounting each class shall mount a property specified by each class of this Appendix and a property of the device object super-class.

For each class group code of the device object, detailed stipulations for device object properties are described below.

1.1 Sensor-related Device Class Group

This section specifies detailed codes and properties of each ECHONET object belonging to the sensor-related device class group (class group specification code X1 = 0x00). Table 1.1 shows a list of classes specified in detail in this section. “Mandatory” means that the device mounting each class must necessarily mount a combination of its property and service.

Table 1.1 List of Objects of Sensor-related Device Class Group (1/2)

Group code	Class code	Class name	Remark
0x00	0x01	Gas leak sensor	
	0x02	Crime prevention sensor	
	0x03	Emergency button	
	0x04	First-aid sensor	
	0x05	Earthquake sensor	
	0x06	Electric leak sensor	
	0x07	Human detection sensor	
	0x08	Visitor sensor	
	0x09	Call sensor	
	0x0A	Condensation sensor	
	0x0B	Air pollution sensor	
	0x0C	Oxygen sensor	
	0x0D	Illuminance sensor	
	0x0E	Sound sensor	
	0x0F	Mailing sensor	

Table 1.1 List of Objects of Sensor-related Device Class Group (2/2)

Group code	Class code	Class name	Remark
0x00	0x10	Heavy load sensor	
	0x11	Temperature sensor	
	0x12	Humidity sensor	
	0x13	Rain sensor	
	0x14	Water level sensor	
	0x15	Bath water level sensor	
	0x16	Bath boil-up sensor	
	0x17	Water leak sensor	
	0x18	Water overflow sensor	
	0x19	Fire sensor	
	0x1A	Cigarette smoke sensor	
	0x1B	CO2 sensor	
	0x1C	Gas sensor	
	0x1D	VOC sensor	
	0x1E	Differential pressure sensor	
	0x1F	Air volume sensor	
	0x20	Odor sensor	
	0x21	Flame sensor	
	0x22	Electric energy sensor	
	0x23	Current value sensor	

1.1.1 Stipulations for gas leak sensor class

Group code : 0x00
Class code : 0x01
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Size	Access rule	Man-datory	Announcement at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level in 8 steps. 0x31～0x38	unsigned char	1 Byte	Set/Get			
Gas leak occurrence status	0xB1	Indicates gas leak occurrence status. Gas leak occurrence found = 0x41 Gas leak occurrence not found = 0x42	unsigned char	1 Byte	Get	○	○	
Gas leak occurrence status resetting	0xBF	Resets gas leak occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Gas leak occurrence status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Gas leak occurrence status

Indicates whether a gas leak occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Gas leak occurrence found” if the threshold set by the detection threshold level is exceeded. When this property is set to “Gas leak occurrence found” = 0x41, it shall be announced periodically. This property shall be set to “Gas leak occurrence not found” = 0x42 by resetting the main body or by EPC = 0xBF “Gas leak occurrence status resetting”.

(4) Gas leak occurrence status resetting

Resets EPC = 0xB1 “Gas leak occurrence status” by setting 0x00.

1.1.2 Stipulations for crime prevention sensor class

Group code : 0x00
Class code : 0x02
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Access rule	Man-datory	Announcement at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	Set/Get			
Invasion occurrence status	0xB1	Indicates invasion occurrence status. Invasion occurrence found = 0x41 Invasion occurrence not found = 0x42	unsigned char	1 Byte	Get	○	○	
Invasion occurrence status resetting	0xBF	Resets invasion occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the device object super-class property)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Invasion occurrence status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Invasion occurrence status

Indicates whether an invasion occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Invasion occurrence status found” = 0x41 if the threshold set by the detection threshold level is exceeded. When this property is set to “Invasion occurrence status found” = 0x41, it shall be announced periodically. This property shall be set to “Invasion occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Invasion occurrence status resetting”.

(4) Invasion occurrence status resetting

Resets EPC = 0xB1 “Invasion occurrence status” by setting 0x00.

1.1.3 Stipulations for emergency button class

Group code : 0x00
Class code : 0x03
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Access rule	Man-datory	Announcement at status change	Remark
Emergency occurrence status	0xB1	Indicates emergency occurrence status. Emergency occurrence found = 0x41 Emergency occurrence not found = 0x42	unsigned char	1 Byte	Get	○	○	
Emergency occurrence status resetting	0xBF	Resets emergency occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Emergency occurrence status

Indicates whether an emergency occurrence status caused by pressing the emergency button is found or not. When this property is set to “Emergency occurrence status found” = 0x41, the property shall be announced periodically. This property shall be set to “Emergency occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Emergency occurrence status resetting”.

(3) Emergency occurrence status resetting

Resets EPC = 0xB1 “Emergency occurrence status” by setting 0x00.

1.1.4 Stipulations for first-aid sensor class

Group code : 0x00
Class code : 0x04
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Access rule	Man-datory	Announcement at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	Set/Get			
First-aid occurrence status	0xB1	Indicates first-aid occurrence status. First-air occurrence found = 0x41 First-aid occurrence not found = 0x42	unsigned char	1 Byte	Get	○	○	
First-aid occurrence status resetting	0xBF	Resets first-aid occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “First-aid occurrence status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) First-aid occurrence status

Indicates whether a first-aid occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “First-aid occurrence status found” if the threshold set by the detection threshold level is exceeded.

When this property is set to “First-aid occurrence status found” = 0x41, the property shall be announced periodically. This property shall be set to “First-aid occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “First-aid occurrence status resetting”.

(4) First-aid occurrence status resetting

Resets EPC = 0xB1 “First-aid occurrence status” by setting 0x00.

1.1.5 Stipulations for earthquake sensor class

Group code : 0x00
Class code : 0x05
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Access rule	Man-datory	Announcement at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	Set/Get			
Earthquake occurrence status	0xB1	Indicates earthquake occurrence status. Earthquake occurrence found = 0x41 Earthquake occurrence not found = 0x42	unsigned char	1 Byte	Get	○	○	
Earthquake occurrence status resetting	0xBF	Resets earthquake occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Earthquake occurrence status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Earthquake occurrence status

Indicates whether an earthquake occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Earthquake occurrence status found” if the threshold set by the detection threshold level is exceeded.

When this property is set to “Earthquake occurrence status found” = 0x41, the property shall be announced periodically. This property shall be set to “Earthquake occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Earthquake occurrence status resetting”.

(4) Earthquake occurrence status resetting

Resets EPC = 0xB1 “Earthquake occurrence status” by setting 0x00.

1.1.6 Stipulations for electric leak sensor class

Group code : 0x00
Class code : 0x06
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Access rule	Man-datory	Announcement at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	Set/Get			
Leak occurrence status	0xB1	Indicates leak occurrence status. Leak occurrence status found = 0x41 Leak occurrence status not found = 0x42	unsigned char	1 Byte	Get	○	○	
Leak occurrence status resetting	0xBF	Resets leak occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Leak occurrence status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Electric leak occurrence status

Indicates whether an electric leak occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Electric leak occurrence status found” if the threshold set by the detection threshold level is exceeded. When this property is set to “Electric leak occurrence status found” = 0x41, the property shall be announced periodically. This property shall be set to “Electric leak occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Electric leak occurrence status resetting”.

(4) Electric leak occurrence status resetting

Resets EPC = 0xB1 “Electric leak occurrence status” by setting 0x00.

1.1.7 Stipulations for human detection sensor class

Group code : 0x00
Class code : 0x07
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Human detection status	0xB1	Indicates human detection status. Human detection status found = 0x41 Human detection status not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Human detection status” to be set to “Detected” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Human detection status

Indicates whether a human detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Human detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Human detection status not found” if the detection threshold value is not reached.

1.1.8 Stipulations for visitor sensor class

Group code : 0x00
Class code : 0x08
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Visitor detection status	0xB1	Indicates visitor detection status. Visitor detection found = 0x41, Visitor detection not found = 0x42	unsigned char	1 Byte	–	Get	○	○	
Visitor detection holding time	0xBE	Indicates visitor detection holding time in units of 10 seconds. 0x0000～0xFFFD (0 sec. to 655,300 sec.)	unsigned short	2 Byte	10 sec	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Visitor detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Visitor detection status

Indicates whether a visitor detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Visitor detection status found” if the threshold set by the detection threshold level is exceeded. When this property is set to “Visitor detection status found” = 0x41, the property shall be announced periodically.

(4) Visitor detection holding time

Indicates the time from start of “Visitor detection status found” to return to “Visitor detection status not found” in units of 10 seconds. The property value range shall be 0x0000 to 0xFFFD (0 sec. to 655,330 sec.). If the property value of the read device exceeds the property value range, the overflow code 0xFFFF shall be used.

1.1.9 Stipulations for call sensor class

Group code : 0x00
Class code : 0x09
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Call status	0xB1	Indicates call status. Call status found = 0x41 Call status not found = 0x42	unsigned char	1 Byte	–	Get	○	○	
Call holding time	0xBE	Indicates the call holding time in units of 10 seconds. 0x0000～0xFFFD (0 sec. to 655,300 sec.)	unsigned short	2 Byte	10 sec	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Call status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Call status

Indicates whether a call status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Call status found” if the threshold set by the detection threshold level is exceeded. When this property is set to “Call status found” = 0x41, the property shall be announced periodically.

(4) Call holding time

Indicates the time from start of “Call status found” to return to “Call status not found” in units of 10 seconds. The property value range shall be 0x0000 to 0xFFFD (0 sec. to 655,330 sec.). If the property value of the read device exceeds the property value range, the overflow code 0xFFFF shall be used.

1.1.10 Stipulations for condensation sensor class

Group code : 0x00
Class code : 0x0A
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Condensation detection status	0xB1	Indicates condensation status. Condensation occurrence found = 0x41 Condensation occurrence not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Condensation detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Condensation detection status

Indicates whether a condensation detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Condensation detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Condensation detection status not found” if the detection threshold value is not reached.

1.1.11 Stipulations for air pollution sensor class

Group code : 0xS00
Class code : 0x0B
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Air pollution detection status	0xB1	Indicates air pollution detection status. Air pollution detection found = 0x41 Air pollution detection not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Air pollution detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Air pollution detection status

Indicates whether an air pollution detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Air pollution detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Condensation detection status not found” if the detection threshold value is not reached.

1.1.12 Stipulations for oxygen sensor class

Group code : 0x00
Class code : 0x0C
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Oxygen concentration measured value	0xE0	Indicates measured value of oxygen concentration in units of 0.01%. 0x0000～0x2710 (0.00～100.00%)	unsigned short	2 Byte	0.01%	Get	○		

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured value of oxygen concentration

Indicates the measured value of oxygen concentration in units of 0.01%. The property value range shall be 0x0000 to 0x2710 (0.00 to 100.00%). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.13 Stipulations for illuminance sensor class

Group code : 0x00
Class code : 0x0D
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured illuminance value	0xE0	Indicates measured illuminance value in lux. 0x0000～0xFFFD (0 to 65533 luxes)	unsigned char	2 Byte	Lux	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Illuminance measured value

Indicates the measured illuminance value in lux. The property value range shall be 0x0000 to FFFD (0 to 65533 luxes). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.14 Stipulations for sound sensor class

Group code : 0x00
Class code : 0x0E
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Sound detection status	0xB1	Indicates sound detection occurrence status. Sound detection found = 0x41 Sound detection not found = 0x42	unsigned char	1 Byte	–	Get	○	○	
Sound detection holding time	0xBE	Indicates call holding time in units of 10 seconds. 0x0000～0xFFFD (0 sec. to 655,330 sec.)	unsigned short	2 Byte	10 sec	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Sound detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Sound detection status

Indicates whether a sound detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Call status found” if the threshold set by the detection threshold level is exceeded.

(4) Sound detection holding time

Indicates the time from start of “Sound detection status found” to return to “Sound detection status not found” in units of 10 seconds. The property value range shall be 0x0000 to 0xFFFD (0 sec. to 655,330 sec.). If the property value of the read device exceeds the property value range, the overflow code 0xFFFF shall be used.

1.1.15 Stipulations for mailing sensor class

Group code : 0x00
Class code : 0x0F
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Mailing detection status	0xB1	Indicates mailing occurrence status. Mailing detection status found = 0x41 Mailing detection status not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Mailing detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Mailing detection status

Indicates whether a mailing detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Mailing detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Mailing detection status not found” if the detection threshold value is not reached.

1.1.16 Stipulations for heavy load sensor class

Group code : 0x00
Class code : 0x10
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Heavy load detection status	0xB1	Indicates heavy load detection occurrence status. Heavy load detection status found = 0x41 Heavy load detection status not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Heavy load detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Heavy load detection status

Indicates whether a heavy load detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Heavy load detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Heavy load detection status not found” if the detection threshold value is not reached.

1.1.17 Stipulations for temperature sensor class

Group code : 0x00
Class code : 0x11
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured temperature value	0xE0	Indicates the measured temperature value in units of 0.1°C. 0xF554～0x7FFF (-2732～32766) (-273.2～3276.6°C)	signed short	2 Byte	0.1°C	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Temperature measured value

Indicates the measured temperature value in units of 0.1%. The property value range shall be 0xF554 to 0x7FFD (-273.2°C to 3276.6°C). When the property value of the real device exceeds this property value range, the overflow code 0x8000 shall be used. When said value falls below the property value range, the underflow code 0x7FFE shall be used.

1.1.18 Stipulations for humidity sensor class

Group code : 0x00
Class code : 0x12
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured value of relative humidity	0xE0	Indicates measured value of relative humidity in %. 0x00～0x64 (0～100%)	unsigned char	1 Byte	%	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured value of relative humidity

Indicates the measured value of relative humidity in %. The property value range shall be 0x00 to 0x64 (0 to 100%). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

1.1.19 Stipulations for rain sensor class

Group code : 0x00
Class code : 0x13
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Rain detection status	0xB1	Indicates rain detection status. Rain detection status found = 0x41 Rain detection status not found = 0x42	unsigned char	1 Byte	–	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Rain detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Rain detection status

Indicates whether a rain detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Rain detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Rain detection status not found” if the detection threshold value is not reached.

1.1.20 Stipulations for water level sensor class

Group code : 0x00
Class code : 0x14
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Water level over detection threshold level	0xB0	Indicates detected water level threshold level in cm. 0x00～0xFD(0～253)	unsigned char	1 Byte	cm	Get			
Water level over detection status	0xB1	Indicates if bath water level exceeds detected water level threshold level. Water level threshold over status found = 0x41 Water level threshold over status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Measured value of water level	0xE0	Indicates measured value of water level in cm. 0x00～0xFD (0～253)	unsigned char	1 Byte	cm	Get	○		

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection water level threshold level

Sets the water level threshold that causes EPC = 0xB1 to be set to “Water level over detection status” in cm.

(3) Water level over detection status

Indicates whether a water level over detection status is found or not. When EPC = 0x80 “Detected water level threshold level” is implemented, this property is set to “Water level over detection status found” if the threshold set by the detected water level threshold level is exceeded, and is set to “Water level over detection status not found” if the detection threshold value is not reached.

(4) Measured value of water level

Indicates the water level measured value in cm. The property value range shall be 0x00 to 0xFD (0 to 253 cm). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

1.1.21 Specifications of bath water level sensor class

Group code : 0x00
Class code : 0x15
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Bath water level over detection threshold level	0xB0	Indicates detection water level threshold level in cm. 0x00～0xFD (0～253)	unsigned char	1 Byte	Cm	Get			
Bath water level over detection status	0xB1	Indicates if bath water level exceeds detection water level threshold level. Water level threshold over status found = 0x41 Water level threshold over status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Measured value of bath water level	0xE0	Indicates measured value of bath water level in cm. 0x00～(0xFD) (0～253)	unsigned char	1 Byte	Cm	Get	○		

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection bath water level threshold level

Sets the water level threshold that causes EPC = 0xB1 to be set to “Bath water level over detection status” in cm.

(3) Bath water level over detection status

Indicates whether a bath water level over detection status is found or not. When EPC = 0x80 “Detected bath water level threshold level” is implemented, this property is set to “Bath water level over detection status found” if the threshold set by the detected bath water level threshold level is exceeded, and is set to “Bath water level over detection status not found” if the detection threshold value is not reached.

(4) Measured value of bath water level

Indicates the measured value of bath water level in cm. The property value range shall be 0x00 to 0xFD (0 to 253 cm). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

1.1.22 Stipulations for bath heating status sensor class

Group code : 0x00
Class code : 0x16
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). Level 0x31 to 0x38	unsigned char	1 Byte	–	Set/Get			
Bath ready detection status	0xB1	Indicates bath ready detection status. Bath heating status found = 0x41 Bath heating status not found = 0x42	unsigned char	1 Byte	%	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Bath ready detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Bath heating detection status

Indicates whether a bath heating detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Bath heating detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Bath heating detection status not found” if the detection threshold value is not reached. When this property is set to “Bath ready detection status found” = 0x41, the property shall be announced periodically.

1.1.23 Stipulations for water leak sensor class

Group code : 0x00
Class code : 0x17
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Water leak detection status	0xB1	Indicates water leak detection status Water leak detection found = 0x41 Water leak detection not found = 0x42	unsigned char	1 Byte	%	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Water leak detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Water leak detection status

Indicates whether a water leak detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Water leak detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Water leak detection status not found” if the detection threshold value is not reached. When this property is set to “Water leak detection status found” = 0x41, it shall be announced periodically.

1.1.24 Stipulations for water overflow sensor class

Group code : 0x00
Class code : 0x18
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Water overflow detection status	0xB1	Indicates water overflow status. Water overflow detection found = 0x41 Water overflow detection not found = 0x42	unsigned char	1 Byte	%	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Water overflow detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Water overflow detection status

Indicates whether a water overflow detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Water overflow detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Water overflow detection status not found” if the detection threshold value is not reached. When this property is set to “Water overflow detection status found” = 0x41, the property shall be announced periodically.

1.1.25 Stipulations for fire sensor class

Group code : 0x00
Class code : 0x19
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). Concrete status of each level is not specified. Level 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Fire occurrence detection status	0xB1	Indicates fire occurrence detection status. Fire occurrence detection found = 0x41 Fire occurrence detection not found = 0x42	unsigned char	1 Byte	%	Get	○	○	
Fire occurrence detection status resetting	0xBF	Resets fire occurrence status by setting 0x00. Reset=0x00	unsigned char	1 Byte	Set				

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Fire occurrence detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Fire occurrence detection status

Indicates whether a fire occurrence status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Fire occurrence detection status found” = 0x41 if the threshold set by the detection threshold level is exceeded. This property shall be set to “Fire occurrence status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Fire occurrence status resetting”.

(4) Fire occurrence status resetting

Resets EPC = 0xB1 “Fire occurrence status” by setting 0x00.

1.1.26 Stipulations for cigarette smoke sensor class

Group code : 0x00
Class code : 0x1A
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). Concrete status of each level is not specified. Level 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Smoke (cigarette) detection status	0xB1	Indicates smoke (cigarette) detection status. Smoke (cigarette) detection status found = 0x41 Some (cigarette) detection status not found = 0x42	unsigned char	1 Byte	%	Get	○	○	

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Smoke (cigarette) detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Smoke (cigarette) detection status

Indicates whether a smoke (cigarette) detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Smoke (cigarette) detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Smoke (cigarette) detection status not found” if the detection threshold value is not reached.

1.1.27 Stipulations for CO2 sensor class

Group code : 0x00
Class code : 0x1B
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured value of CO2 concentration	0xE0	Indicates measured value of CO2 concentration in ppm. 0x0000～0xFFFD (0～65533)	unsigned short	2 Byte	Ppm	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured value of CO2 concentration

Indicates the measured value of CO2 concentration in ppm. The property value range shall be 0x0000 to 0xFFFD (0 to 65533 ppm). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.28 Stipulations for gas sensor class

Group code : 0x00
Class code : 0x1C
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Gas detection status	0xB1	Indicates whether gas detection status is found or not. Gas detection status found = 0x41 Gas detection status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Measured value of gas concentration	0xE0	Indicates measured value of gas concentration in ppm. 0x0000～0xFFFD (0～65533)	unsigned char	2 Byte	Ppm	Get	○		

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Gas detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Gas detection status

Indicates whether a gas detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Gas detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Gas detection status not found” if the detection threshold value is not reached.

(4) Measured value of gas concentration

Indicates the measured value of gas concentration in ppm. The property value range shall be 0x0000 to 0xFFFD (0 to 65533 ppm). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.29 Stipulations for VOC sensor class

Group code : 0x00
Class code : 0x1D
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
VOC detection status	0xB1	Indicates whether VOC detection status is found or not. VOC detection status found = 0x41 VOC detection status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Measured value of VOC concentration	0xE0	Indicates measured value of VOC concentration in ppm. 0x0000～0xFFFD (0～65533)	unsigned short	2 Byte	ppm	Get	○		

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “VOC detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) VOC detection status

Indicates whether VOC detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “VOC detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “VOC detection status not found” if the detection threshold value is not reached.

(4) Measured value of VOC concentration

Indicates the measured value of VOC concentration in ppm. The property value range shall be 0x0000 to 0xFFFD (0 to 65533 ppm). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.30 Stipulations for differential pressure sensor class

Group code : 0x00
Class code : 0x1E
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured value of differential pressure	0xE0	Indicates measured value of differential pressure in Pa. 0x8001～0x7FFE (-32767～32766)	signed short	2 Byte	Pa	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured value of differential pressure

Indicates the measured value of Differential pressure in Pa. The property value range shall be 0x8001 to 0x7FFD (-32767 to 32766 Pa). When the property value of the real device exceeds this property value range, the overflow code 0x7FFF shall be used. When said value is below the property value range, the underflow code 0x8000 shall be used.

1.1.31 Stipulations for air speed sensor class

Group code : 0x00
Class code : 0x1F
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured value of air speed	0xE0	Indicates the measured value of air speed in units of 0.01 m/sec. 0x0000～0xFFFD (0～65533) (0～655.33m/sec)	unsigned char	2 Byte	0.01 m/sec	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured value of air speed

Indicates the measured value of air speed in units of 0.01 m/sec. The property value range shall be 0x0000 to 0xFFFD (0 to 655.33 m/sec.). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

1.1.32 Stipulations for odor sensor class

Group code : 0x00
Class code : 0x20
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). Level 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Odor detection status	0xB1	Indicates whether odor detection status is found or not. Odor detection status found = 0x41 Odor detection status not found = 0x42	unsigned char	1 Byte	–	Get			
Measured odor value	0xE0	Indicates measured odor value. The unit is not specified. 0x00～0xFD (0～253)	unsigned char	1 Byte	–	Get	○		

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Odor detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Odor detection status

Indicates whether odor detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Odor detection status found” if the threshold set by the detection threshold level is exceeded, and is set to “Odor detection status not found” if the detection threshold value is not reached.

(4) Measured odor value

Indicates the measured odor value. The unit is not specified. The property value range shall be 0x00 to 0xFD (0 to 253). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

1.1.33 Stipulations for flame sensor class

Group code : 0x00
Class code : 0x21
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Detection threshold level	0xB0	Specifies detection threshold level (8-step). Detection threshold level 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Flame detection status	0xB1	Indicates whether flame detection status is found or not. Flame detection status found = 0x41 Flame detection status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Flame detection status setting	0xBF	Resets flame detection status by setting 0x00. Reset=0x00	unsigned char	1 Byte	–	Set			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Detection threshold level

Sets the threshold value that causes EPC = 0xB1 “Flame detection status” to be set to “Found” (8-step). The minimum value is 0x31 and the maximum value is 0x38. No concrete value is specified for each level. If the detection threshold of the real device is higher or lower than the 8-step range, the property of the real device shall be assigned to the property value of the 8 steps specified in this property.

(3) Flame detection status

Indicates whether a flame detection status is found or not. When EPC = 0x80 “Detection threshold level” is implemented, this property is set to “Flame detection status found” = 0x41 if the threshold set by the detection threshold level is exceeded. This property shall be set to “Flame detection status not found” = 0x42 by resetting the main body or by EPC = 0xBF “Flame detection status resetting”.

(4) Fire occurrence status resetting

Resets EPC = 0xB1 “Flame detection status” by setting 0x00.

1.1.34 Stipulations for electric energy sensor class

Group code : 0x00
Class code : 0x22
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Integral electric energy	0xE0	Indicates integral electric energy in Wh. 0x0～0x3B9AC9FF (0～999,999,999Wh)	unsigned long	4 Byte	Wh	Get	○		
Small-capacity sensor instantaneous electric energy	0xE2	Indicates instantaneous electric energy in units of 0.1 W. 0x8001～0x7FFE (-3276.7～3276.6)	signed short	2 Byte	0.1 W	Get			
Large-capacity sensor instantaneous electric energy	0xE3	Indicates instantaneous electric energy in units of 0.1 kW. 0x8001～0x7FFE (-3276.7～3276.6)	signed short	2 Byte	0.1 kW	Get			
Integral electric energy measurement log	0xE4	Indicates measurement result log of integral electric energy (Wh) for past 24 hours in 30-minute sections. 0～0x3B9AC9F (0～999,999,999) (0～999,999,999Wh)	unsigned long x 48	192 Byte	Wh	Get			
Effective voltage value	0xE5	Indicates effective voltage value in V. 0x0000～0xFFFD (0～65533V)	unsigned short	2 Byte	V	Get			
Current time setting	0x97	Current time HH:MM 0～0x17:0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current year/month/day setting	0x98	Current year/month/day 0～270F:0～0x0C:0～0x1F (=0～9999):(=0～12):(=0～31)	unsigned char	4 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Integral electric energy

Indicates the integral electric energy in Wh. The property value range shall be 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 Wh). When the integral electric energy overflows, this value shall be incremented from 0x00000000.

(3) Small-capacity sensor instantaneous electric energy

Indicates the measured value of small-capacity sensor instantaneous electric energy in units of 0.1 W. The property value range shall be 0x8001 to 0x7FFD (-3276.7 to 3276.6 W). When the property value of the real device exceeds this property value range, the overflow code 0x7FFF shall be used. When said value falls below the property value range, the underflow code 0x8000 shall be used.

(4) Large-capacity sensor instantaneous electric energy

Indicates the measured value of large-capacity sensor instantaneous electric energy in units of 0.1 kW. The property value range shall be 0x8001 to 0x7FFD (-3276.7 to 3276.6 kW). When the property value of the real device exceeds this property value range, the overflow code 0x7FFF shall be used. When said value falls below the property value range, the underflow code 0x8000 shall be used.

(5) Integral electric energy measurement log

Indicates the integral electric energy (Wh) measurement result log for the past 24 hours in 30-minute sections. The measured value in Wh at each 0 minute and 30 minutes based on the time set in the property name “Time setting” (EPC = 0x97) shall be indicated in the range of 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 Wh). The property value shall begin with the high-order byte in time series.

(6) Voltage value

Indicates the measured value of effective voltage of the electric energy sensor in V. This property may be implemented as a fixed value of the rated voltage of measurement.

(7) Current time setting

Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). This property value shall begin with the high-order byte, in the order of hour, minute. This property is used to set the accurate time at the integral electric energy measurement log of “Integral electric energy measurement log” (EPC = 0xE2).

(8) Current year/month/day setting

Indicates the current year/month/day by year: 0x0000 to 0x270F (0 to 9999), month: 0x00 to 0x0C (0 to 12), and day: 0x00 to 0x1F (0 to 31). This property value shall begin with the high-order byte in the order of year (2 bytes), month (1 byte), day (1 byte).

1.1.35 Stipulations for current value sensor class

Group code : 0x00
Class code : 0x22
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured current value	0xE0	Indicates measured current value in units of 0.1 A. 0x00000000～0xFFFFFFFD (0～4,294,967,293mA)	unsigned long	4 Byte	mA	Get	○		
Rated voltage of measurement	0xE1	Rated voltage value to be measured by current sensor 0x0000～0xFFFD (0～65533V)	unsigned short	2 Byte	V	Get			

(1) Operation status (inherited from the property of device object super-class)
Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Measured current value
Indicates the measured current value in mA. The property value range shall be 0x00000000 to 0xFFFFFFFD (0 to 4,294,967,293 mA). When the property value of the real device exceeds this property value range, the overflow code 0xFFFFFFFF shall be used. When said value is below the property value range, the underflow code 0xFFFFFFFE shall be used.

(3) Rated voltage value of measurement
Indicates the rated voltage value to be measured by the current sensor in V. This property may be implemented as a fixed value.

1.2 Air conditioner-related Device Class Group

This section specifies detailed codes and properties for each ECHONET object belonging to the air conditioner-related device class group (class group specification code X1 = 0x01). Table 1.2 shows a list of classes for which detailed specifications are provided. In the stipulations of classes, “Mandatory” means that the device mounting for each class must necessarily mount a combination of its property and service.

Table 1.2 List of Objects of Air Conditioner-related Device Class Group

Group code	Class code	Class name	Remark
0x01	0x30	Home air conditioner	
	0x33	Air conditioner ventilation fan	
	0x35	Air cleaner	
	0x42	Electric heater	

1.2.1 Stipulations for home air conditioner class

Group code : 0x01
Class code : 0x30
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Operation mode	0xB0	Auto/cooling/heating/dehumidifying /blast The following codes are associated with the above modes. 0x41/0x42/0x43/0x44/0x45	unsigned char	1 Byte	–	Set/Get	○	○	
Temperature auto status	0xB1	Auto/Non-auto Auto=0x41, Non-auto=0x42	unsigned char	1 Byte	–	Set/Get			
Quick operation status	0xB2	Normal operation/quick/quiet Normal operation = 0x41 Quick = 0x42 Quiet = 0x43	unsigned char	1 Byte	–	Set/Get			
Set temperature value	0xB3	Set temperature value 0x00～0x32 (0～50°C)	unsigned char	1 Byte	°C	Set/Get	○		
Set value of relative humidity in dehumidifying mode	0xB4	Set value of relative humidity in dehumidifying mode 0x00～0x64 (0～100°C)	unsigned char	1 Byte	%	Set/Get			
Set temperature value in cooling mode	0xB5	Set temperature value in cooling mode 0x00～0x32 (0～50°C)	unsigned char	1 Byte	°C	Set/Get			
Set temperature value in heating mode	0xB6	Set temperature value in heating mode 0x00～0x32 (0～50°C)	unsigned char	1 Byte	°C	Set/Get			
Set temperature value in dehumidifying mode	0xB7	Set temperature value in dehumidifying mode 0x00～0x32 (0～50°C)	unsigned char	1 Byte	°C	Set/Get			
Rated power consumption	0xB8	Rated power consumption in each operation mode of cooling/heating/dehumidifying/blast 0x0000～0xFFFD (0～65533W) Cooling: heating: dehumidifying: blast	unsigned char x 4	8 Byte	W	Get			
Measured value of current consumption	0xB9	Measured value of current consumption 0x0000～0xFFFD (0～6553.3A)	unsigned short	2 Byte	0.1A	Get			
Measured value of room relative humidity	0xBA	Measured value of room relative humidity 0x00～0x64 (0～100°C)	unsigned char	1 Byte	°C	Get			
Measured value of room temperature	0xBB	Measured value of room temperature 0x80～0x7F (-127～126°C)	signed char	1 Byte	°C	Get			

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Set temperature value in user remote control	0xBC	Set temperature value of user remote control 0x00～0x32 (0～50°C)	unsigned char	1 Byte	°C	Get			
Measure value of blow-off temperature	0xBD	Measured value of blow-off temperature 0x81～0x7E (-127～126°C)	signed char	1 Byte	°C	Get			
Measured value of outdoor temperature	0xBE	Measured value of outdoor temperature 0x81～0x7E (-127～126°C)	signed char	1 Byte	°C	Get			
Set value of air volume	0xA0	Sets air volume level and the air volume auto status. Air volume shall be specified (8-step). Air volume auto status=0x41 Air volume level=0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Air direction auto status	0xA1	Auto/Non-auto Auto=0x41, Non-auto=0x42	unsigned char	1 Byte	–	Set/Get			
Air direction swing	0xA3	Air direction swing OFF/up-down/left-right/up-down-left-right Air direction swing OFF=0x41, Up-down=0x41, Left-right=0x42, Up-down-left-right=0x43	unsigned char	1 Byte	–	Set/Get			
Air direction up-down	0xA4	Up/down/center Up=0x41, Down=0x42, Center=0x43	unsigned char	1 Byte	–	Set/Get			
Air direction left-right	0xA5	Right/left/center/left-right Right=0x41, Left=0x42, Center=0x43, Left-right=0x44	unsigned char	1 Byte	–	Set/Get			
Ventilating operation status	0xC0	Indicates ventilating operation status ON/OFF. Ventilation ON＝0x41,OFF＝0x42	unsigned char	1 Byte	–	Set/Get			
Humidifying operation status	0xC1	Indicates humidifying operation status ON/OFF. Humidifying ON＝0x41,OFF＝0x42	unsigned char	1 Byte	–				
ON timer reservation status	0x90	Reservation ON/OFF Reservation ON = 0x41, Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Set value of ON timer time	0x91	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of ON timer relative time	0x92	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	1 Byte	–	Set/Get			
OFF timer reservation status	0x94	Reservation ON/Reservation OFF Reservation ON = 0x41, Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Set value of OFF timer time	0x95	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of OFF timer relative time	0x96	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the home air conditioner. The property value of 0x30/0x31 shall be associated with each both operation and stop.

(2) Operation mode

Indicates the auto/cooling/heating/dehumidifying/blast setting of the home air conditioner. The property value of 0x41/0x42/0x43/0x44/0x45 shall be associated with each of the above operation modes in this order. Regarding the property values to be implemented, only those to be assumed by the real device mounting this class may be implemented. For example, when the real device mounting this class is not provided with a blast function, the property value 0x45 corresponding to blast need not be implemented.

(3) Temperature auto status

Indicates the operation status ON/OFF setting when the home air conditioner is operated by the auto temperature setting calculation algorithm of the home air conditioner body without using “Set temperature value” (EPC = 0xB3) as the target value. This property shall take 0x41 for auto status ON and 0x42 for auto status OFF.

(4) Quick operation status

Indicates the quick/quiet/normal operation status setting. The property value of 0x41/0x42/0x43 is associated with each of the above settings. This property can be set independently of “Operation mode” (EPC = 0xB0), and the quick operation status setting corresponds to quick cooling, quick heating, or powerful operation status. The quick/quiet/normal operation status of this property is a setting status in exclusive relation.

(5) Set temperature value

Indicates the set temperature value in the current “Operation mode” of the air conditioner in °C. When “Temperature auto status” (EPC = 0xB1) is not implemented and is implemented, the air conditioner is operated on this property value as the target temperature value if “Temperature auto status” (EPC = 0xB1) takes the property value of Non-auto (0x42).

(6) Set value of relative humidity in dehumidifying mode

Indicates the set value of relative humidity, when “Operation mode” (EPC = 0xB0) is the dehumidifying mode, in %.

If this property is implemented, setting/referencing is enabled even when the current setting of “Operation mode” (EPC = 0xB0) is not the dehumidifying mode.

(7) Set temperature value in cooling mode

Indicates the set temperature value in °C when “Operation mode” (EPC = 0xB0) is the cooling mode. If this property is implemented, setting/referencing is enabled even when the current setting of “Operation mode” (EPC = 0xB0) is not the cooling mode.

(8) Set temperature value in heating mode

Indicates the set temperature value in °C when “Operation mode” (EPC = 0xB0) is the heating mode. If this property is implemented, setting/referencing is enabled even when the current setting of “Operation mode” (EPC = 0xB0) is not the heating mode.

(9) Set temperature value in dehumidifying mode

Indicates the set temperature value in °C when “Operation mode” (EPC = 0xB0) is the dehumidifying mode. If this property is implemented, setting/referencing is enabled even when the current setting of “Operation mode” (EPC = 0xB0) is not the dehumidifying mode.

(10) Rated power consumption

Indicates the rated power consumption (catalog value) in W in each operation mode of cooling/heating/dehumidifying/blast. The power consumption in each mode shall be 0x0000 to 0xFFFD (0 to 65533 W), and the property value shall begin with the high-order byte in the order of cooling/heating/dehumidifying/blast. When the real device does not support any operation mode as its function, the underflow code 0xFFFE shall be used.

(11) Measured value of current consumption

Indicates the measured value of current consumption of the air conditioner in units of 0.1 A. The property value range shall be 0x0000 to 0xFFFD (0 to 6553.3 A). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

(12) Measured value of room relative humidity

Indicates the measured value of room humidity in %. The property value range shall be 0x00 to 0x64 (0 to 100%). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

(13) Measured value of room temperature

Indicates the measured value of room temperature in °C. The property value range shall be 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value is below the property value range, the underflow code 0x7E shall be used.

(14) Set value of user remote control temperature

Indicates the up-to-date temperature value set by the home air conditioner user's remote control in °C. When the property of "Set temperature of home air conditioner" is implemented from the controller, setting/referencing is enabled even when the current setting of "Operation mode" (EPC = 0xB0) is not the dehumidifying mode.

(15) Measured value of blow-off temperature

Indicates the measured value of blow-off temperature in °C. The property value range is 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value falls below the property value range, the underflow code 0x7E shall be used.

(16) Measured value of outdoor temperature

Indicates the measured temperature value (outdoor temperature) in the installation place of the outdoor equipment in °C. The property value range is 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value falls below the property value range, the underflow code 0x7E shall be used.

(17) Set value of air volume

Indicates the air volume level and the air volume auto status. The property value of air volume auto status shall be 0x41. The air volume level shall be set (8-step) and take a property value of 0x31 to 0x38. Any concrete value of each air volume level is not specified, but the 0x31 shall be the minimum air volume and 0x38 shall be the maximum air volume.

(18) Air direction auto status

Indicates whether the air direction auto status is “Auto” or “Non-auto”.

(19) Air direction swing

Sets the air direction swing to swing OFF/up-down/left-right/up-down and left-right.
Air direction swing OFF = 0x41, up-down = 0x41, left-right = 0x42, up-down and left-right = 0x43

(20) Air direction up-down

Sets the air direction up-down.
Up = 0x41, 0x42, center =0x43

(21) Air direction left-right

Sets the air direction left-right.
Right =0x41, left = 0x42, center =0x43, left-right = 0x44

(22) Ventilating operation status

Sets the operation status ON/OFF of the air ventilation fan implemented on the home air conditioner. When the ventilating function of the real device corresponding to this property can independently function in the “Operation status” property of the device object super-class set to the OFF status, we recommend the user to mount this function as “Air conditioner ventilation fan class”.

(23) Humidifying operation status

Sets the operation status ON/OFF of the humidifying function implemented on the home air conditioner.

(24) ON timer reservation status

Sets the reservation ON/OFF of the ON timer. This property is related to “Set value of ON timer time” or “Set value of ON timer relative time”.

(25) Set value of ON timer time

Indicates the air conditioner ON time with “ON timer reservation status” ON by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(26) Set value of ON timer relative time

Indicates the air conditioner ON time by the relative time from the current time with “ON timer reservation status” ON. The data format shall be hour: 0x00 to 0x17 (2 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(27) OFF timer reservation status

Sets the reservation ON/OFF of the OFF timer. This property is associated with “Set value of OFF timer time” or “Set value of OFF timer relative time”.

(28) Set value of OFF timer time

Indicates the air conditioner OFF time with “OFF timer reservation status” ON by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(29) Set value of OFF timer relative time

Indicates the air conditioner OFF time by the relative time from the current time with “OFF timer reservation status” ON. The data format shall be hour: 0x00 to 0x17 (2 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(30) Set value of current time

Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value begins from the high-order byte in the order of hour, minute. This property is used to set the current time corresponding to the time to be set by the ON timer and OFF timer.

1.2.2 Stipulations for air conditioner ventilation fan class

Group code : 0x01
Class code : 0x33
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Set value of room relative humidity	0xB4	Set value of relative humidity at auto ventilating operation. 0x00～0x64, (0～100%)	unsigned char	1 Byte	%	Get/Set			
Ventilation auto status	0xBF	Auto/Non-auto Auto=0x41, Non-auto=0x42	unsigned char	1 Byte	–	Get/Set			
Measured value of room relative humidity	0xBA	Measured value of room relative humidity 0x00～0x64, (0～100%)	unsigned char	1 Byte	%	Get			
Set value of ventilation air volume	0xA0	Sets ventilation air volume level and ventilation air volume auto status. This property specifies ventilation air volume level (8-step). Ventilation air volume auto status = 0x41 Ventilation air volume level = 0x31～0x38	unsigned char	1 Byte	–	Get/Set			
Heat exchanger operation setting	0xE0	Indicates ON/OFF status of heat exchanger. Heat exchanger ON＝0x41, OFF＝0x42	unsigned char	1 Byte	–	Get			
Measured value of CO2 concentration	0xC0	Indicates measured value of CO2 concentration in ppm. 0x0000～0xFFFD(0～65533ppm)	unsigned short	1 Byte	ppm	Get			
Smoke (cigarette) detection status	0xC1	Indicates smoke (cigarette) detection status. Smoke (cigarette) detection status found = 0x41 Smoke (cigarette) detection status not found = 0x42	unsigned char	1 Byte	–	Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the air conditioner. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Set value of room relative humidity

Sets the set value of room relative humidity in the auto ventilating operation in %. If the measured value of room relative humidity exceeds the set value of room relative humidity when “ventilation auto status” is set to Auto, the “Operation status” goes to ON.

(3) Ventilation auto status

Sets either Auto or Non-auto of auto ventilating operation.

(4) Measured value of room relative humidity

Sets the measured value of room relative humidity in %. The property value range shall be 0x00 to 0x64 (0 to 100%). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value falls below the property value range, the underflow code 0xFE shall be used.

(5) Set value of ventilation air volume

Indicates the ventilation air volume level and the ventilation air volume auto status. The property value of ventilation air volume auto status shall be 0x41. The air volume level shall be set (8-step) and take a property value of 0x31 to 0x38. Any concrete value of each air volume level is not specified but the 0x31 shall be the minimum air volume and 0x38 shall be the maximum air volume.

(6) Heat exchange operation setting

Sets ON/OFF as the operation status of the heat exchange function.

(7) Measured value of CO2 concentration

Indicates the measured value of CO2 concentration in ppm. The property value range shall be 0x0000 to 0xFFFD (0 to 65533 ppm). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

(8) Smoke (cigarette) detection status

Indicates whether a smoke (cigarette) detection status is found or not. “Smoke (cigarette) detection status found” shall be 0x41 and “Smoke (cigarette) detection status not found” shall be 0x42.

1.2.3 Stipulations for air cleaner class

Group code : 0x01
Class code : 0x35
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Filter change notice	0xE1	Filter change time notice found/not found Found=0x41, Not found=0x42	unsigned char	1 Byte	–	Get			
Set value of air volume	0xA0	Sets air volume level and air volume auto status. The ventilation air volume is specified (8-step). Ventilation air volume auto status = 0x41 Ventilation air volume level =0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Smoke (cigarette) detection status	0xC1	Indicates smoke (cigarette) detection status. Smoke (cigarette) detection status found = 0x41 Smoke (cigarette) detection status not found = 0x42	unsigned char	1 Byte	–	Get			
Optical catalyst operation status	0xC2	Optical catalyst ON/OFF status Optical catalyst ON = 0x41 Optical catalysis OFF = 0x42	unsigned char	1 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the air cleaner. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Filter change notice

Indicates whether the air cleaner filter change time notification is made or not. This property shall disclose that the time has come to change the air cleaner function. The transition from “Filter change time notice found” to “Filter change time notice not found” shall be attained by the reset switch on the air cleaner body.

(3) Set value of air volume

Indicates air volume level and air volume auto status. The property value of air volume auto status shall be 0x41. The air volume level shall be set (8-step) and take a property value of 0x31 to 0x38. No concrete air volume level is specified, but 0x31 shall be the minimum air volume and 0x38 shall be the maximum air volume.

(4) Smoke (cigarette) detection status

Indicates whether smoke (cigarette) detection status is found or not. “Smoke (cigarette) detection status found” = 0x41 and “Some (cigarette) detection status not found” = 0x42 shall be specified.

(5) Optical catalyst operation status

Indicates the operation status of the optical catalyst function as ON/OFF. “Optical catalyst ON” = 0x41 and “Optical catalyst OFF” = 0x42 shall be specified.

1.2.4 Stipulations for electric heater class

Group code : 0x01
Class code : 0x42
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Temperature auto status	0xB1	Auto/Non-auto Auto=0x41, Non-auto=0x42	unsigned char	1 Byte	–	Set/Get			
Set temperature value	0xB3	Set temperature value 0x00～0x32 (0～50)	unsigned char	1 Byte	°C	Set/Get	○		
Measured value of room temperature	0xBB	Measured value of room temperature 0x81～0x7E(-127～126))	signed char	1 Byte	°C	Get			
Set value of user remote control temperature	0xBC	Set temperature value of user remote control 0x00～0x32 (0～50)	unsigned char	1 Byte	°C	Get			
Set value of air volume	0xA0	Sets air volume level and air volume auto status. Air volume level is specified (8-step). Air volume auto status = 0x41 Air volume level = 0x32～0x38	unsigned char	1 Byte		Set/Get			
ON timer reservation status	0x90	Reservation ON/Reservation OFF Reservation ON = 0x41 Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Set value of ON timer time	0x91	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of ON timer relative time	0x92	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2Byte	–	Set/Get			
OFF timer reservation status	0x94	Reservation ON/Reservation OFF Reservation ON = 0x41 Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Set value of OFF timer time	0x95	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of OFF timer relative time	0x96	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2Byte	–	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the device object super-class property)

Indicates the operation/stop status of the electric heater. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Temperature auto status

Indicates the operation status ON/OFF setting when the electric heater is operated by the auto temperature setting calculation algorithm of the electric heater body without using “Set temperature value” (EPC = 0xB3) as the target value. This property shall take 0x41 for auto status ON and 0x42 for auto status OFF.

(3) Set temperature value

Indicates the set temperature value in the current “operation mode” in °C. When “Temperature auto status” (EPC = 0xB1) is not implemented and is implemented, the air conditioner is operated on this property value as the target temperature value if “Temperature auto status” (EPC = 0xB1) takes the property value of Non-auto (0x42).

(4) Measured value of room temperature

Indicates the measured value of room temperature in °C. The property value range shall be 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value is below the property value range, the underflow code 0x7E shall be used.

(5) Set value of user remote control temperature

Indicates the up-to-date temperature value set by the user’s remote control in °C. This property is used to refer to the set temperature by the user’s remote control when the set temperature of the electric heater has been changed by the controller. When this property is implemented, setting/referencing is enabled even if the current setting of “Operation mode” (EPC = 0xB0) is not the dehumidifying mode.

(6) Set value of air volume

Indicates the air volume level and the air volume auto status. The property value of air volume auto status shall be 0x41. The air volume level shall be set (8-step) and take a property value of 0x31 to 0x38. The concrete value of each air volume level is not specified, but 0x31 shall be the minimum air volume and 0x38 shall be the maximum air volume.

(7) ON timer reservation status

Sets the reservation ON/OFF of the ON timer. This property is related to “Set value of ON timer time” or “Set value of ON timer relative time”.

(8) Set value of ON timer time

Indicates the electric heater ON time with “ON timer reservation status” ON by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property shall begin with the high-order byte in the order of hour, minute.

(9) Set value of ON timer relative time

Indicates the electric heater ON time with “ON timer time reservation status” ON by the relative time from the current time. The data format shall be hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59), and the property value shall begin with the high-order byte in the order of hour, minute.

(10) OFF timer reservation status

Sets the reservation ON/OFF of the OFF timer. This property is associated with “Set value of OFF timer time” or “Set value of OFF timer relative time”.

(11) Set value of OFF timer time

Indicates the air conditioner OFF time with “OFF timer reservation status” ON by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(12) Set value of OFF timer relative time

Indicates the air conditioner OFF time by the relative time from the current time with “OFF timer reservation status” ON. The data format shall be hour: 0x00 to 0x17 (2 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(13) Set value of current time

Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value begins from the high-order byte in the order of hour, minute. This property is used to set the current time corresponding to the time to be set by the ON timer and OFF timer.

1.3 Housing/facilities-related Device Class Group

This section specifies detailed codes and properties for each ECHONET object belonging to the housing/facilities-related device class group (class group specification code X1 = 0x02). Table 1.3 shows a list of classes specified in detail in this section. In the class stipulations, “Mandatory” means that the device mounting of each class must necessarily mount a combination of its property and service.

Table 1.3 List of Objects of Housing/Facilities-related Device Class Group

Group code	Class code	Class name	Remark
0x02	0x60	Electric-powered shade	
	0x6B	Late night power electric hot water generator	
	0x72	Hot water generator	
	0x79	Home solar power generator	
	0x80	Watt-hour meter	
	0x82	Gas meter	
	0x86	LP gas meter	

1.3.1 Stipulations for electrically operated shade class

Group code : 0x02
Class code : 0x60
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Open/close status	0xE0	Open/Close Oper=0x41, Close=0x42	unsigned char	1 Byte	–	Set/Get	○	○	
Open/close level	0xE1	Specifies open/close level (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			
Set value of shade angle	0xE2	Shade angle value 0x00～0xB4 (0～180degree)	unsigned char	1 Byte	degree	Set/Get			
Opening/closing speed	0xE3	Low/Medium/High Low=0x41, Medium=0x42, High=0x43	unsigned char	1 Byte	–	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the electrically operated shade. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Open/close status

Indicates the open/close status of the electrically operated shade. The open status shall be 0x41, and the close status shall be 0x42.

(3) Open/close level

Indicates the open/close level of the electrically operated shade (8-step). No concrete status is specified for each level, but 0x31 shall be the full open status and 0x38 shall be the full close status.

(4) Shade angle

Indicates the shade angle on basis of the room side of the electrically operated shade in degree. The value of 90 degrees indicates the level status of the shade, and the value of 0 degree indicates that the room side of the shade is the highest status.

(5) Shade open/close speed

Indicates the open/close speed of the electrically operated shade in three steps: Low, Medium, and High.

1.3.2 Stipulations for midnight power electric hot water generator class

Group code : 0x02
Class code : 0x6B
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Boil-up status	0xB0	Represents auto boil-up ON/OFF status. Auto boil-up = 0x41 Non-auto boil-up = 0x42	unsigned char	1 Byte	–	Set/Get			
Boil-up hot water auto status	0xB1	Auto/Non-auto Auto = 0x41 Non-auto = 0x42	unsigned char	1 Byte	–	Set/Get			
Boil-up in-progress status	0xB2	Indicates boil-up in-progress status. Boil-up in-progress status found = 0x41 Boil-up in-progress status not found = 0x42	unsigned char	1 Byte	–	Get			
Set value of boil-up hot water temperature	0xB3	Indicates set value of boil-up hot water temperature in °C. 0x00～0x64 (0～100°C)	unsigned char	1 Byte	°C	Set/Get	O		
Set value of boil-up hot water volume	0xE0	Indicates set value of boil-up hot water volume in %. 0x00～0x64 (0～100°C)	unsigned char	1 Byte	%	Set/Get			
Measured value of residual hot water volume	0xE1	Indicates measured value of residual hot water volume by L. 0x0000～0xFFFD (0～65533L)	unsigned char	2 Byte	L	Get			
Total hot water volume	0xE2	Indicates total hot water volume by L. 0x0000～0xFFFD (0～65533L)	unsigned char	2 Byte	L	Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the electrically operated shade. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Boil-up auto status

Sets whether the boil-up operation using midnight power is performed automatically or not. The auto boil-up status shall be 0x41 and the non-auto boil-up status shall be 0x42.

(3) Boil-up hot water auto status

Sets whether the set value of boil-up hot water temperature is set automatically by the auto setting algorithm of the electric hot water generator. The auto status shall be 0x41 and the non-auto status shall be 0x42.

(4) Boil-up in-progress status

Indicates whether the electric hot water generator is in progress of boil-up, by Boil-up in-progress status found: 0x41 or Boil-up in-progress status not found: 0x42.

(5) Set value of boil-up hot water temperature

Indicates the set value of boil-up hot water temperature in °C. The property value range shall be 0x00 to 0x64 (0 to 100°C).

(6) Set value of boil-up hot water volume

Sets the boil-up hot water volume in %. The property value range shall be 0x00 to 0x64 (0 to 100%).

(7) Residual hot water volume

Indicates the residual hot water volume by L. The property value range shall be 0x0000 to 0xFFFD (0 to 65533253L). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

(8) Total hot water volume

Indicates the total hot water volume by L. The property value range shall be 0x0000 to 0xFFFD (0 to 65533253L).

1.3.3 Stipulations for hot water generator class

Group code : 0x02
Class code : 0x72
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Hot water burning status	0xD0	Indicates hot water burning status. Hot water burning status found = 0x41 Hot water burning status not found = 0x42	unsigned char	1 Byte	–	Get	○		
Set value of hot water temperature	0xD1	Indicates set value of hot water temperature in °C. 0x00～0x64 (0～100)	unsigned char	1 Byte	°C	Get/Set			
Hot water thermal insulation status	0xD2	Hot water thermal insulation status Hot water thermal insulation operation = 0x41 Hot water thermal insulation operation resetting = 0x42	unsigned char	1 Byte	–	Get/Set			
Set value of bath temperature	0xE1	Indicates set value of bath temperature in °C. 0x00～0x64 (0～100)	unsigned char	1 Byte	°C	Get/Set			
Bath burning status	0xE2	Indicates bath burning status. Bath burning status found = 0x41 Bath burning status not found=0x42	unsigned char	1 Byte	–	Get	○		
Bath auto mode setting	0xE3	Bath auto mode ON/OFF Auto ON = 0x41 Auto OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Bath additional boil-up operation	0xE4	Additional boil-up ON/OFF Additional boil-up ON = 0x41 Additional boil-up OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Bath hot water adding operation	0xE5	Hot water addition ON/OFF Hot water addition ON = 0x41 Hot water addition OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Bath hot water temperature lowering operation	0xE6	Hot water temperature lowering ON/OFF Hot water temperature lowering ON = 0x41 Hot water temperature lowering OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Bath hot water volume setting 1	0xE7	Indicates bath hot water volume by L. 0x00～0xFD (0～253L)	unsigned char	1 Byte	L	Set/Get			
Bath hot water volume setting 2	0xE8	Specifies bath hot water volume (8-step). 0x31～0x38	unsigned char	1 Byte	–	Set/Get			

ON timer reservation status	0x90	Reservation ON/Reservation OFF Reservation ON = 0x41 Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Set value of ON timer time	0x91	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of ON timer relative time	0x92	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char x 2	2 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates the operation/stop status of the hot water generator. The property value of 0x30/0x31 shall be associated with both operation and stop.

(2) Set value of hot water temperature

Indicates the set value of hot water temperature in °C. The property value range shall be 0x00 to 0x64 (0 to 100°C).

(3) Hot water burning status

Indicates whether the hot water generator is in the burning status, by “Burning status found”: 0x41 or “Burning status not found”: 0x42.

(4) Hot water thermal insulation status

Indicates the ON/OFF status of hot water thermal insulation status by “Hot water thermal insulation operation”: 0x41 or “Hot water thermal insulation operation resetting”: 0x42.

(5) Bath burning status

Indicates whether the bath hot water generator is in the burning status, by “Burning status found”: 0x41 or “Burning status not found”: 0x42.

(6) Set value of bath temperature

Indicates the set value of bath boil-up temperature in °C. The property value range shall be 0x00 to 0x64 (0 to 100°C).

(7) Bath auto mode setting

Indicates the ON/OFF status of the bath auto mode. The property value shall be 0x41 for Bath auto ON or 0x42 for Bath auto OFF.

(8) Bath additional boil-up operation

Indicates the ON/OFF status of the bath additional boil-up operation.

The property value shall be 0x41 for Bath additional boil-up operation ON or 0x42 for Bath additional boil-up operation OFF.

(9) Bath hot water adding operation

Indicates the ON/OFF status of the bath hot water adding operation. The property value shall be 0x41 for Bath hot water adding operation ON or 0x42 for Bath hot water adding operation OFF.

(10) Bath hot water volume setting 1

Indicates the bath hot water volume setting by L. The property value range shall be 0x00 to 0xFD (0 to 253 L). When the property value of the real device exceeds this property value range, the overflow code 0xFF shall be used. When said value is below the property value range, the underflow code 0xFE shall be used.

(11) Bath hot water volume setting 2

Sets the bath hot water volume setting (8-step). The property value of 0x31 shall be the minimum value and the property value of 0x38 shall be the maximum value. No concrete value is specified for each level.

(12) Bath hot water temperature lowering operation setting

Indicates the ON/OFF status of the hot water thermal insulation. The property value shall be 0x41 for Hot water thermal insulation operation ON or 0x42 for Hot water thermal insulation operation OFF.

(13) ON timer reservation status

Sets the ON/OFF status of ON timer reservation. This property is associated with “Set value of ON timer time” or “Set value of ON timer relative time”.

(14) Set value of ON timer time

Indicates the time when “Bath auto mode” (EPC = 0xE3) reaches “Bath auto ON = 0x41 with “ON timer time reservation status” ON, by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(15) Set value of ON timer relative time

Indicates the time when “Bath auto mode” (EPC = 0xE3) reaches “Bath auto ON = 0x41 with “ON timer time reservation status” ON, by the relative time from the current time. The data format shall be hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(16) Current time setting

Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order type in the order of hour, minute. This property is used to set the current time corresponding to the time to be set by the ON timer and OFF timer.

1.3.4 Stipulations for home solar power generation class

Group code : 0x02
Class code : 0x79
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Type	0xD0	Indicates type of home solar power generation PV inverter. System-linked type = 0x00 Independent type = 0x01	unsigned char	1 Byte	–	Get			
Instantaneous generated power	0xE0	Indicates instantaneous generated power in W. 0x0000～0xFFFD（0～65533）	unsigned short	2 Byte	W	Get	○		
Integral generated electric energy	0xE1	Indicates integral electric energy in kWh. 0x0～0x3B9AC9FF (0～999,999,999kWh)	unsigned long	4 Byte	KWh	Get	○		
Integral generated electric energy resetting	0xE2	Resets integral generated electric energy by setting 0x00. Reset = 0x00	unsigned char	1 Byte	–	Set			
Integral sold electric energy	0xE3	Indicates integral value of sold power in kWh. 0x0～0x3B9AC9FF (0～999,999,999kWh)	unsigned long	4 Byte	kWh	Get			
Integral sold electric energy resetting	0xE4	Resets integral sold electric energy by setting 0x00. Reset = 0x00	unsigned char	1 Byte	–	Set			

(1) Operation status

Indicates the operation status as a home solar power generation PV inverter. The status where power is supplied to the system side shall be defined as “Operating status”.

(2) Type

Indicates the type of home solar power generation PV inverter.

System-linked type = 0x00, Independent type = 0x01

(3) Instantaneous generated power

Indicates the instantaneous generated power in W. The property value range shall be 0x0000 to 0xFFFD. When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value is below the property value range, the underflow code 0xFFFE shall be used.

(4) Integral generated electric energy

Indicates the integral generated electric energy in kWh. The property value range shall be 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 kWh). When the integral electric energy overflows, the property value shall be incremented again from 0x00000000.

(5) Integral generated electric energy resetting

Resets integral generated electric energy to zero by setting 0x00.

(6) Integral sold electric energy

Indicates the integral sold electric energy in kWh. The property value range shall be 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 kWh). When the integral electric energy overflows, the property value shall be incremented again from 0x00000000.

(7) Integral sold electric energy resetting

Resets integral generated electric energy to zero by setting 0x00.

1.3.5 Stipulations for electric energy meter class

Group code : 0x02
Class code : 0x80
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Integral electric energy	0xE0	Indicates integral electric energy in decimal (8 digits). 0x00000000～0x05F5E0FF (0～99,999,999)	unsigned long	4 Byte	0.1 or 0.01 kWh	Get	○		
Integral electric energy	0xE2	Indicates number of decimal places of integral electric energy (0xE0). 0x01 to 0x02 (1 to 2 decimal places)	unsigned char	1 Byte	–	Get	○		
Integral electric energy measurement log 1	0xE3	Indicates integral electric energy (8 digits) measurement result log in 30-minute segments for past 24 hours. 0x00000000～0x05F5E0FF (0～99,999,999)	unsigned long x48	192 Byte	0.1 or 0.01 kWh	Get			
Integral electric energy measurement log 2	0xE4	Indicates integral electric energy (8 digits) measurement result log for past 24 hours as one-day data in 30-minute segments. 0x00000000～0x05F5E0FF (0～99,999,999)	unsigned long x48 x45	192 Byte x 45	0.1 or 0.01 kWh	GetM			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current year/month/day setting	0x98	Current year/month/day YYYY:MM:DD 0～270F:0～0x0C: 0～0x1F (=0～9999):(=0～12):(=0～31)	unsigned char	4 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)
Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Integral electric energy
Indicates the integral electric energy in decimal 8 digits. The unit is indicated by the property “Integral electric energy” (EPC = 0xE2). The unit shall be 0.1 kWh when “Integral electric energy” (EPC = 0xE2) is 0x01, and 0.01 kWh when said property is 0x02. The property value range shall be 0x00000000 to 05F5E0FF (0 to 99,999,999). When the integral electric energy overflows, the property shall be incremented again from 0x00000000.

(3) Integral electric energy
Indicates the number of decimal places of the integral electric energy (EPC = 0xE0). When the property value is 0x01, “Integral electric energy” (EPC = 0xE0) shall take the unit of 0.1 kWh. When the property is 0x02, the “Integral electric energy” (EPC = 0xE0) shall take the unit of 0.01 kWh.

(4) Integral electric energy measurement log 1
Indicates the integral electric energy (EPC= 0xE0) measurement result log for past 24 hours in 30-minute segments. The unit is indicated by the property value of “Integral electric energy unit (EPC = 0xE2). When “Integral electric energy unit” (EPC = 0xE2) is 0x01, the unit shall be 0.1 kWh. When “Integral electric energy unit” (EPC = 0xE2) is 0x02, the unit shall be 0.01 kWh. The measured value of integral electric energy for each 30 minutes shall be based on the time to be set in the property name “Time setting” (EPC-0x97). The measured value in units of 8 digits at every 0 minute and 30 minutes shall be the data of 0x00000000 to 05F5E0FF (0 to 99,999,999). The property value shall begin with the high-order byte in time series. For the time data that is not yet measured for the measurement log, 0xFFFFFFFF shall be used.

(5) Integral power electric energy measurement log 2
Indicates the integral electric energy value (EPC = 0xE0) measurement result log for past 45 days by specifying one-day data (4 bytes x 48) in 30-minute segments as one array element. The unit is indicated by the property value “Integral electric energy” (EPC = 0xE2). When “Integral electric energy unit” (EPC = 0xE2) is 0x01, the unit shall be 0.1 kWh. When “Integral electric energy unit” (EPC = 0xE2) is 0x02, the unit shall be 0.01 kWh. The measured value of integral electric energy for each 30 minutes shall be based on the time to be set in the property name “Time setting” (EPC-0x97). The measured value in units of 8 digits at every 0 minute and 30 minutes shall be the data of 0x00000000 to 05F5E0FF (0 to 99,999,999). The property value shall be the 45-day data of one array element comprised of one-day data (4 bytes x 48), beginning with the high-order byte in time series from the data of the measured value of integral electric energy at 0 hour 0 minute 45 days ago. For the time data that is not yet measured for the measurement log, 0xFFFFFFFF shall be used.

(6) Current time setting
Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute. This property shall be used to set correct time in the integral electric energy measurement log of “Integral electric energy measurement log” (EPC = 0xE2).

(7) Current year/month/day setting
Indicates the current year/month/day by year: 0x0000 to 0x270F (0 to 9999), month: 0x00 to 0x0C (0 to 12), and minute: 0x00 to 0x1F (0 to 31). The property value shall begin with the high-order byte in the order of year (2 bytes), month (1 byte), and day (1 byte).

1.3.6 Stipulations for gas meter class

Group code : 0x02
Class code : 0x82
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Integral gas consumption	0xE0	Indicates integral gas consumption in units of 0.001 m3. 0x0～0x3B9AC9FF (0～999,999.999m^3)	unsigned long	4 Byte	0.001 m^3	Get	○		
Integral gas consumption measurement log	0xE2	Indicates integral gas consumption (m^3) measurement result log for past 24 hours as data in 30-minute segments. 0x0～0x3B9AC9FF (0～999,999.999m^3)	Unsigned long x 48	192 Byte	0.001 m^3	Get			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char x 2	2 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the function native to this class is operating or not (ON/OFF). In the node mounting this class, if the function of this class is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Integral gas consumption

Indicates the integral gas consumption in units of 0.001 m^3. The property value range shall be 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 m^3). When the integral gas consumption value overflows, the property shall be incremented again from 0x00000000.

(3) Integral gas consumption measurement log

Indicates the gas consumption (EPC= 0xE0) measurement result log for past 24 hours as the data in 30-minute segments. The measured value of integral gas consumption for each 30 minutes shall be based on the time to be set in the property name “Time setting” (EPC-0x97). The measured value in units of 0.1 m^3 at every 0 minute and 30 minutes shall be the data of 0x00000000 to 0x3B9AC9FF (0 to 999,999,999 m^3). The property value shall begin with the high-order byte in time series.

(4) Current time setting

Indicates the current time by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute. This property shall be used to set the current time corresponding to the time to be set by the ON timer and OFF timer.

1.3.7 Stipulations for LP gas meter class

Group code : 0x02
Class code : 0x83
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Integral gas consumption of metering data	0xE0	Indicates integral gas consumption in units of 0.0001 m^3. 0～0x005F5E0FF (0～9,999.9999m^3)	unsigned long	4 Byte	0.0001 m^3	Get	○		
Integral gas consumption of metering data	0xE1	Indicates integral gas consumption in units of 0.001 m^3. 0～0x005F5E0FF (0～99,999.999m^3)	unsigned long	4 Byte	0.001 m^3	Get	○		
Error detection of metering data	0xE2	Indicates status where meter detected metering data error. Error detection status found = 0x41 Error detection status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Security data 1	0xE3	Indicates security data to define security information on meter operation by bit allocation. 0～0xFFFFFFFF	unsigned long	4 Byte	–	Get			
Security data 2	0xE4	Indicates security data to define security information on meter operation by bit allocation. 0～0xFFFFFFFF	unsigned long	4 Byte	–	Get			
Center valve shut-off	0xE5	Indicates status where gas shut-off valve of meter has been shut off by center. Center valve shut-off status found = 0x41 Center valve shut-off status not found = 0x42	unsigned char	1 Byte	–	Get		○	
Center valve shut-off reset enable	0xE6	Indicates status where gas shut-off valve of meter has been shut off by center. Center valve shut-off reset enable = 0x41 Center valve shut-off reset not enable = 0x42	unsigned char	1 Byte	–	Get			
Emergency valve shut-off status	0xE7	Indicates status where gas shut-off valve of meter has been shut off. Emergency valve shut-off status found = 0x41 Emergency valve shut-off status not found = 0x42	unsigned char	1 Byte	–				
Shut-off valve open/close status	0xE8	Indicates open/close status of shut-off valve. Shut-off valve open status = 0x41 Shut-off valve close status = 0x42	unsigned char	1 Byte	–				

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Residual volume control warning	0xE9	Indicates status as warning where residual volume is very small. Residual volume control warning level 1 0x31 Residual volume control warning level 2 0x32 Residual volume control warning level 3 0x33 No residual volume control warning 0x42	unsigned char	1 Byte	–	Get		○	
Set value of residual volume control warning level 1	0xEA	Sets “Small residual volume detection level 1”. 0～0xFFFFFF(0～16,777,215)	unsigned char x 3	3 Byte	L	Set/Get			
Set value of residual volume control warning level 2	0xEB	Sets “Small residual volume detection level 2”. 0～0xFFFFFF(0～16,777,215)	unsigned char x 3	3 Byte	L	Set/Get			
Set value of residual volume control warning level 3	0xEC	Sets “Small residual volume detection level 3”. 0～0xFFFFFF(0～16,777,215)	unsigned char x3	3 Byte	L	Set/Get			
Slight leak timer value (gas flow rate continuation)	0xED	Indicates number of days on which gas flow rate is continued. 0～0xFD(0～253) (0 to 253 days)	unsigned char	1 Byte	Day	Get			
Slight leak timer (without pressure increase)	0xEE	Indicates number of days on which gas leak monitoring is performed without gas pressure increase. 0～0xFD(0～253) (0 to 253 days)	unsigned char	1 Byte	Day	Get			
Shut-off reason log	0xEF	Indicates log of reasons for gas shut-off by shut-off valve about past 3 times in 1 byte each. Log 3: log 2: log 1 Concrete code shall be presented later.	unsigned char x 3	3 Byte	–	Get			
Maximum value of supply pressure data	0xD0	Indicates maximum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			
Minimum value of supply pressure data	0xD1	Indicates minimum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			
Current pressure value of supply pressure data	0xD2	Indicates minimum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Maximum value of block pressure data	0xD3	Indicates minimum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			
Minimum value of block pressure data	0xD4	Indicates minimum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			
Minimum value of block pressure data	0xD5	Indicates minimum value of supply pressure data in units of 0.1 kPa. 0x0000～0xFFFD(0～655.33) (0～655.33kPa)	unsigned short	2 Byte	0.01 kPa	Get			
Number of block pressure/supply pressure error days	0xD6	Indicates number of days on which block pressure/supply pressure errors occurred in 1 byte each. Number of block pressure error days: Number of supply pressure error days: Number of block pressure error times: Number of supply pressure error times	unsigned char x 4	4 Byte	–	Get			
Test call status	0xD7	Indicates whether test call operation status is provided or not. Test call operation status 0x41 Test call non-operation status 0x42	unsigned char	1 Byte	–	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the LP gas meter is operating or not (ON/OFF). In the node mounting this class, if the function of the LP gas meter is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Integral gas consumption of metering data 1

Indicates the integral gas consumption in units of 0.0001 m^3. The property value range shall be 0x00000000 to 0x005F5E0FF (0 to 9,999,999 m^3). When the integral gas consumption overflows, the property value shall be incremented again from 0x00000000. Either “Integral gas consumption of metering data 1” (EPC = 0xE0) or “Integral gas consumption of metering data 2” (EPC = 0xE1) shall be necessarily implemented.

(3) Integral gas consumption 2

Indicates the integral gas consumption in units of 0.001 m^3. The property value range shall be 0x00000000 to 0x005F5E0FF (0 to 99,999,999 m^3). When the integral gas consumption overflows, the property value shall be incremented again from 0x00000000. Either “Integral gas consumption of metering data 1” (EPC = 0xE0) or “Integral gas consumption of metering data 2” (EPC = 0xE1) shall be necessarily implemented.

(4) Metering data error detection

Indicates that a metering data error was detected. The property shall be 0x41 for “Error detection status found” and 0x42 for “Error detection status not found”.

(5) Security data 1

Indicates the security data to define the security information on meter error detection by bit allocation.

(6) Security data 2

Indicates the security data to define the security information on meter error detection by bit allocation.

(7) Center valve shut-off

Indicates a status where the gas shut-off valve of the meter is shut off by the center. In the status of “Center valve shut-off request found”, no request for opening the shut-off valve will be accepted until a reset permission is given from the center.

1.3.8 Stipulations on general lighting class

Group code : 0x02
Class code : 0x90
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Illuminance level	0xB0	Indicates illuminance level in %. 0x00～0x64(0～100%)	unsigned char	1 Byte	–	Get/Set			

(1) Operation status (inherited from the property of device object super-class)
Indicates the ON status = Lighting ON and the OFF status = Lighting OFF.

(2) Illuminance level
Indicates the illuminance level in %. Ant concrete status of each level is not specified but 0x00 shall be the lowest illuminance and 0x64 shall be the highest illuminance.
If the illuminance level setting of the real device is less than the % unit or if it is more, the property of the real device shall be assigned to the property value in % specified by this property.

1.4 Cooking/Household-related Device Class Group

This section specifies detailed codes and properties for each ECHONET object belonging to the cooking/household-related device class group (class group specification code X1 = 0x03). Table 1.4 shows a list of classes specified in detail in this section. In the stipulations of classes, “Mandatory” means that the device mounting of each class must necessarily mount a combination of its property and service.

Table 1.4 List of Objects of Cooking/Household-related Device Class Group

Group code	Class code	Class name	Remark
0x03	0xB7	Refrigerator	
	0xB8	Electronic oven	
	0xC5	Washing machine	

1.4.1 Stipulations for refrigerator class

Group code : 0x03
Class code : 0xB7
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Door open/close status	0xB0	Door open/close status Door open = 0x41, Door close = 0x42	signed char	1 Byte	–	Get			
Door open warning	0xB1	Door open warning status Door open warning found = 0x41 Door open warning not found = 0x42	signed char	1 Byte	–	Get			
Set value of refrigerating chamber temperature	0xE2	Set value of refrigerating chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get/Set			
Set value of freezing chamber temperature	0xE3	Set value of refrigerating chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get/Set			
Set value of ice chamber temperature	0xE4	Set value of refrigerating chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get/Set			
Set value of vegetable chamber temperature	0xE5	Set value of vegetable chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get/Set			
Measured value of refrigerating chamber temperature	0xD1	Set value of refrigerating chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get			
Measured value of freezing chamber temperature	0xD2	Set value of vegetable chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get			
Measured value of ice chamber temperature	0xD3	Set value of refrigerating chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get			
Measured value of vegetable chamber temperature	0xD4	Set value of vegetable chamber temperature 0x81～0x7E (－127～126℃)	signed char	1 Byte	°C	Get			
Measured value of current consumption	0xDA	Measured value of current consumption 0x0000～0xFFFD (0～6553.3A)	unsigned char	2 Byte	0.1A	Get			
Rated power consumption	0xDC	Rated power consumption 0x0000～0xFFFD (0～65533W)	unsigned char	2 Byte	W	Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the refrigerator is operating or not (ON/OFF). In the node mounting this class, if the function of the refrigerator is started concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Door open status

Indicates a door open/close status. For the door open status, 0x41 shall be used. For the door close status, 0x42 shall be used.

(3) Door open warning

Indicates whether a door open warning status is found or not. When a door open warning status is found, 0x41 shall be used. When a door open warning status is not found, 0x42 shall be used.

(4) Set value of refrigerating chamber temperature

Indicates the set value of refrigerator temperature in °C. The property value range shall be 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value falls below the property value range, the underflow code 0x7E shall be used.

(5) Measured value of refrigerating chamber temperature

Indicates the measured value of refrigerator temperature in °C. The property value range shall be 0x81 to 0x7E (-127 to 126°C). When the property value of the real device exceeds this property value range, the overflow code 0x80 shall be used. When said value falls below the property value range, the underflow code 0x7E shall be used.

(6) Measured value of current consumption

Indicates the present current consumption value of refrigerator temperature in units of 0.1 A. The property value range shall be 0x0000 to 0xFFFD (0 to 6553.3 A). When the property value of the real device exceeds this property value range, the overflow code 0xFFFF shall be used. When said value falls below the property value range, the underflow code 0xFFFE shall be used.

(7) Rated power consumption

Indicates the rated power motion (catalog value) in W. The property value range shall be 0x0000 to 0xFFFD (0 to 65533 W).

1.4.2 Stipulations for electronic oven class

Group code : 0x03
Class code : 0xB8
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Door open/close status	0xB0	Door open/close status Door open = 0x41, Door close = 0x42	unsigned char	1 Byte	–	Get			
Heating start status	0xB2	Heating start status Heating start/restart = 0x41, Heating suspension = 0x42, Heating completion/stop = 0x43	unsigned char	1 Byte	–	Get			
Heating mode	0xE0	Indicates heating mode of electronic oven heating/electronic oven melting/oven/grill/toast. Electronic oven heating = 0x41, Electronic oven melting = 0x42, Oven = 0x43, Grill = 0x44, Toast = 0x45	unsigned char	1 Byte	–	Set/Get			
Auto heating status	0xE1	Auto heating status Auto = 0x41, Manual = 0x42	Unsigned char	1 Byte	–	Set/Get			
Electronic oven heating level setting	0xE2	Sets auto heating temperature level by 5 steps. 0x31～0x35	unsigned char	1 Byte	–	Set/Get			
Set value of electronic oven heating temperature	0xE3	Indicates set value of oven heating temperature (in units of 0.1°C). 0xF554～0x7FFF(－2732～32766) (－273.2～3276.6℃)	signed short	2 Byte	0.1°C	Set/Get			
Set value of finish temperature	0xE4	Indicates set value of finish temperature (in units of 0.1°C). 0xF554～0x7FFF(－2732～32766) (－273.2～3276.6℃)	unsigned short char	2 Byte	0.1°C	Set/Get			
Set value of heating time	0xE5	Sets heating time by HH:MM:SS. 0～0x17 : 0～0x3B : 0～0x3B (=0～23) : (=0～59) : (0～59)	unsigned char x3	3 Byte	–	Set/Get			
Residual heating time	0xE6	Indicates heating time by HH:MM:SS. 0～0x17 : 0～0x3B : 0～0x3B (=0～23) : (=0～59) : (0～59)	unsigned char x3	3 Byte	–	Set/Get			

Note: Regarding Announcement at status change, ○ denotes mandatory processing when the property is implemented.

(1) Operation status (inherited from the property of device object super-class)

Indicates whether the electronic oven is in a heating operation enable status (including a waiting status for heating operation or heating operation status) or not (ON/OFF). In the node mounting this class, if the function of the electronic oven is put in a heating operation enable status concurrently with the start of node operation, this property may be implemented at a fixed value of 0x30 (Operation status ON).

(2) Heating start status

Indicates the heating start status by Heating start/restart, Heating suspension, and Heating stop/completion. The respective property values shall be associated with 0x41, 0x42, and 0x43.

(3) Heating mode

Indicates the electronic oven heating/electronic oven melting/oven/grill/toast setting of the electronic oven. The property value of 0x41/0x42/0x43/0x44/0x45 shall be associated with the respective operation mode. Regarding the property values to be implemented, only those to be assumed by the real device mounting this class may be implemented. For example, when the real device mounting this class is not provided with an oven function, the property value 0x43 corresponding to oven does not need to be implemented.

(4) Auto heating status

Indicates the operation status ON/OFF setting when the electronic oven is operated by the heating time set by the sensor of the electronic oven body without using “Set value of heating time” (EPC = 0xE5) as the target value. This property shall take 0x41 for the auto heating status and 0x42 for the manual heating status.

(5) Oven heating level setting

Sets the heating temperature level by 5 steps when “Auto heating status” (EPC = 0xE2) is set to Auto heating status ON. No concrete status is specified for each level, but 0x33 shall be the lowest heating temperature and 0x35 shall be the highest heating temperature.

(6) Set value of oven heating temperature

Indicates the set value of oven heating temperature in units of 0.1°C. The property value range shall be 0xF554 to 0x7FFD (-273.2°C to 3276.6°C). When the property value of the real device exceeds this property value range, the overflow code 0x8000 shall be used. When said value falls below the property value range, the underflow code 0x7FFF shall be used.

(7) Set value of finish temperature

Indicates the set value of finish temperature in units of 0.1°C. The property value range shall be 0xF554 to 0x7FFD (-273.2°C to 3276.6°C). When the property value of the real device exceeds this property value range, the overflow code 0x8000 shall be used. When said value falls below the property value range, the underflow code 0x7FFF shall be used.

(8) Set value of heating time

Indicates the heating time by hour: 0x00 to 0x17 (0 to 23), minute: 0x00 to 0x3B (0 to 59), and second: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute, and second. This property is the set value of heating time when “Auto heating status” (EPC = 0xE2) is set to Manual.

(9) Residual heating time

Indicates the residual heating time by hour: 0x00 to 0x17 (0 to 23), minute: 0x00 to 0x3B (0 to 59), and second: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute, second.

1.4.3 Stipulations for washing machine class

Group code : 0x03
Class code : 0xC5
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Washing start status	0xB2	Washing start status Washing star/restart = 0x41, Washing suspension = 0x42, Washing completion/stop = 0x43	unsigned char	1 Byte	–	Get			
Washing state transition	0xE1	Washing state transition Washing = 0x41, Rinsing = 0x42, Spin drying = 0x43, Suspension = 0x44, Washing completion/stop = 0x45	unsigned char	1 Byte	–	Get			
Residual washing time	0xE6	Indicates residual washing time by HH:MM:SS. 0～0x17: 0～0x3B : 0～0x3B (=0～23):(=0～59):(=0～59)	unsigned char	3 Byte	–	Set/Get			
ON timer reservation status	0x90	Reservation ON/Reservation OFF Reservation ON = 0x41, Reservation OFF = 0x42	unsigned char	1 Byte	–	Set/Get			
Set value of ON timer time	0x91	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Set value of ON timer relative time	0x92	Timer value HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			
Current time setting	0x97	Current time HH:MM 0～0x17: 0～0x3B (=0～23):(=0～59)	unsigned char	2 Byte	–	Set/Get			

(1) Operation status (inherited from the property of device object super-class)

Indicates the ON/OFF status of the washing machine operation. This property indicates whether the washing machine includes the washing status for washing operation and washing operation status or not (ON/OFF).

(2) Washing start status

Indicates the washing start status by Washing start/restart, Washing suspension, and Washing stop/completion. The respective property values shall be associated with 0x41, 0x42, and 0x43.

(3) Washing state transition

Indicates the washing state transition by Washing, Rinsing, Spin drying, Suspension, and Washing completion/stop. The respective property values shall be associated with 0x41, 0x42, 0x43, 0x44 and 0x45.

(4) Residual washing time

Indicates the residual washing time by hour: 0x00 to 0x17 (0 to 23), minute: 0x00 to 0x3B (0 to 59), and second: 0x00 to 0x3B (0 to 59).

The property value shall begin with the high-order byte in the order of hour, minute, and second.

(5) ON timer reservation status

Sets the ON/OFF status of ON timer reservation. This property shall be associated with “Set value of ON timer time” or “Set value of ON timer time”.

(6) Set value of ON timer time

Indicates the electric heater ON time with “ON timer reservation status” ON by hour: 0x00 to 0x17 (0 to 23) and 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(7) Set value of ON timer relative time

Indicates the electric heater ON time with “ON timer reservation status” ON by the relative time from the current time. The data format shall be hour: 0x00 to 0x17 (0 to 23) and 0x00to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute.

(8) Set value of current time

Indicates the current value by hour: 0x00 to 0x17 (0 to 23) and minute: 0x00 to 0x3B (0 to 59). The property value shall begin with the high-order byte in the order of hour, minute. This property is used to set the current time corresponding to the time to be set by the ON timer and OFF timer.

1.5 Health-related device class group

This section specifies detailed codes and properties for each ECHONET object belonging to the health-related device class group (class group specification code X1 = 0x04). Table 1.5 shows a list of classes specified in detail in this section. In the stipulations of classes, “Mandatory” means that the device mounting of each class must necessarily mount a combination of its property and service.

Table 1.5 List of Objects of Health-related Device Class Group

Group code	Class code	Class name	Remark
0x04	0x01	Weighing machine	

1.5.1 Stipulations for weighing machine class

Group code : 0x04
Class code : 0x01
Instance code : 0x01～0x7F (0x00: All-instance specification code)

Property name	EPC	Contents of property Value range (decimal notation)	Data type	Data size	Unit	Access rule	Man-datory	Announce-ment at status change	Remark
Measured weight value	0xE0	Indicates measured value of body weight in units of 0.1 kg. 0x0000～0xFFFD (0～6553.3kg)	unsigned char	2 Byte	0.1 kg	Get			
Measured value of body fat	0xE1	Indicates measured value of body fat in units of 0.1%. 0x0000～0x03E8 (0～100.0%)	unsigned char	2 Byte	0.1%	Get			

(1) Operation status (inherited from the property of device object super-class)
Indicates the ON/OFF status of the weighing machine operation.

(2) Measured value of body weight
Indicates the measured body weight in units of 0.1 kg.

(3) Measured value of body fat
Indicates the measured value of body fat in units of 0.1%.

1.6 Management/Operation-related Device Class Group

This section specifies detailed codes and properties for each ECHONET object belonging to the management/operation-related device class group (class group specification code X1 = 0x05). Table 1.6 shows a list of classes specified in detail in this section. In the stipulations of classes, “Mandatory” means that the device mounting of each class must necessarily mount a combination of its property and service.

Table 1.6 List of Objects of Management/Operation-related Device Class Group

Group code	Class code	Class name	Remark
0x05	–	–	–

The details of each class are not specified in Version 1.0.