Comprehensive range of field-proven electrode systems and electrodes
– satisfies broad range of applications

Comprehensive diagnostics facility with in-built software protection
– ensures security and confidence in operation

Fully automatic buffer recognition
– allows buffering in either order

Solution temperature compensation as standard
– essential for ammonia-dosed high purity boiler water applications

Second current output or Modbus™ option
– enables temperature to be retransmitted

IP66/NEMA4X
– reliable operation in demanding environments.

Water Wash facility
– enhances performance in difficult applications

English, French, German, Italian and Spanish software
– simple, user-selection of display language

A high specification pH/Redox (ORP) analyzer offering advanced functionality, simple operation and reliability in harsh environments
4630 Series pH/Redox (ORP) Analyzer
The ABB 4630 Series pH/Redox (ORP) Analyzer comprises a transmitter and a sensing system to accurately, and reliably, measure and transmit the pH/Redox (ORP) value in a range of water monitoring applications such as water treatment plants, boiler water and effluent.

The Analyzer offers high performance and advanced functionality in a compact, cost-effective package. It is rugged and reliable for safe operation in harsh environments, simple to install and use; and requires minimum maintenance.

Sensor System
The sensing system can be selected from an extensive choice of dip, flow, in-line and withdrawable versions to suit the application.

The design and method of construction has resulted in a world-class product with an enviable reputation for longevity, quality and reliability.

The 4630 Series Universal Transmitter
The 4630 Series Universal Transmitter provides the operator interface and communications to other devices. The signal from the sensing system is converted by the transmitter and the information is presented on a large, custom-designed, easy-to-read, back-lit liquid crystal display (LCD) as a pH or Redox (ORP) value.

A process retransmission signal and two alarm relay outputs are provided as standard, while an optional RS485 serial interface allows the transmitter to be easily incorporated into the ABB PC30 supervisory system. A second current output option enables temperature as well as pH to be retransmitted.

Available in wall-mounting or 1/4 DIN panel-mounting versions the transmitter is protected to IP66/NEMA 4X, ensuring reliable operation in the most demanding situations. The same level of protection is maintained during programming and calibration.

User Friendly Operation
An easy to read display is used in conjunction with the four tactile membrane key pads to prompt the user through the programming procedures. Included as standard is a five-language, software package, to display information in English, French, German, Italian or Spanish.

Easy Installation, Commissioning and Maintenance
The compact panel- or wall-mounting transmitter allows flexible and easy installation. The unique LCD is easy to read in all light conditions. Used in conjunction with the membrane key pad it promptly the user through the setup procedure. Range, alarm levels, set point adjustments and system calibration are easily set.

Water Wash Models 4631 and 4636
The instrument can be supplied with the capability to automatically wash the pH electrode using normal mains water when used with the Series 7670 cartridge pH/Redox system. This facility can significantly improve the performance and reduce the maintenance on difficult applications.

Confidence in Service
To complement the well-proven design and unrivalled accuracy and reliability in service of the sensors, the entire sensing loop is regularly self-monitored for short circuits and temperature element faults. The instrument includes non-volatile memory, eliminating the need for battery back-up, and line voltage supply filtering to minimize the effects of mains borne interference. The instruments carry the CE mark, having undergone extensive testing.

Instrument Key Pad

Wash in Process
**Specification – Transmitter**

**Display**

**Measured value**

5-digit x 7-segment back-lit LCD

**Information**

16-character, single line, dot matrix, back-lit LCD

**Ranges**

- **pH**: 0 to 14
- **Redox (ORP)**: −1000 to +1000 mV

**Resolution**

0.1 pH, 1 mV

**Accuracy**

±0.01 pH, ±1 mV

**Glass pH slope range**

Max. 105%
Min. configurable between 60 and 90%

**Temperature compensation**

−10 to 110°C (14 to 230°F) manual or automatic via Pt100 resistance thermometer

---

**Environmental Data**

**Operating temperature limits**

−20 to 55°C (−4 to 130°F).

**Storage temperature limits**

−25 to 70°C (−13 to 158°F)

**Operating humidity limits**

Up to 95%RH non-condensing

---

**Power Supply**

**Voltage requirements**

100 to 130V or
200 to 260V 50/60Hz

**Power Consumption**

<6VA

**Error due to power supply variations**

Less than 2% for +6% to −20% variation from nominal supply voltage

**Insulation**

Mains to earth (line to ground) 2kV RMS

---

**Outputs and Set Points**

**No. of Relays**

Two

**Set point adjustment**

Programmable

**Water Wash**

- No. of relays: one for control
  - one for water wash

**Frequency of wash**

15 minutes, 30 minutes, 45 minutes, 1 hour, 2 hours up to 24 hours in 1 hour increments

**Duration of wash**

15 seconds, 30 seconds, 45 seconds, 1 minute, 2 minutes, 3 minutes, 4 minutes or 5 minutes

**Set point differential**

±1% of span

**Relay contacts**

Single pole changeover

- **Rating**
  - 250V AC
  - 3A AC
  - 250V DC max.
  - 3A DC max.

- **Loading (non-inductive)**
  - 750VA
  - 30W max.

- **Loading (inductive)**
  - 75VA
  - 3W max.

**Insulation**

2kV RMS contacts to earth (ground)

**No. of set points**

Two

**Set point adjustment**

Programmable

**Set point hysteresis**

±1% fixed

**Local set point annunciation**

Red LED
pH/Redox (ORP) Analyzers
Models 4630 & 4635 (incorporating Water Wash Versions 4631 & 4636)

... Specification - Transmitter

Retransmission

No. of retransmission signals
- One fully isolated – standard
- Two fully isolated – optional

Output current
- 0 to 10mA, 0 to 20mA or 4 to 20mA programmable

Output ranges
- Retransmission 1
  - pH: 0 to 14pH, min. span 2pH
  - Redox (ORP): –1000 to +1000mV, min. span 150mV
- Retransmission 2 (optional)
  - pH: 0 to 14pH, min. span 2pH
  - Redox (ORP): –1000 to +1000mV, min. span 150mV
  - Temperature: –10 to 150°C (32 to 302°F), min. span 20°C (36°F)

Accuracy
- ±0.25% FSD or ±0.5% reading

Resolution
- 0.1% at 10mA, 0.05% at 20mA

Maximum load resistance
- 750Ω (20mA max.)

Modbus serial communication
- RS485 (optional extra)

Mechanical Data

Models 4630 & 4631
- Mounting: Wall
- Protection: IP66/NEMA4X
- Dimensions: 160mm wide x 214mm high x 68mm deep (6.30 in. x 8.43 in. x 2.68 in.)
- Weight: 2kg (4 1/2 lb)

Models 4635 & 4636
- Mounting: Panel (1/4 DIN)
- Protection: IP66/NEMA4X front
- Dimensions: 96mm wide x 96mm high x 191mm deep (3.78 in. x 3.78 in. x 7.52 in.)
- Weight: 1.5kg (3 1/4 lb)
**pH/Redox (ORP) Analyzers**
Models 4630 & 4635 (incorporating Water Wash Versions 4631 & 4636)

### Specification - Sensing System

**Body material**
- Glass coupled polypropylene

**Operating temperature range**
- –5 to 100°C (23 to 212°F)

**Max. temperature**
- 100°C at 2 bar (212°F at 29psi)

**Max. operating pressure**
- 10 bar at 20°C (145psi at 68°F)

**Process connection (standard)**
- 1 in. BSP female

**Process connection (optional)**
- ½ in. NPT female adapter
- Other flanges to order

---

**Model 7651**

**Body material**
- Glass coupled polypropylene and polypropylene

**Operating temperature**
- –5 to 80°C (23 to 176°F)

**Max. temperature**
- 80°C (176°F) at atmospheric pressure

**Max. operating pressure**
- 2.75 bar at 20°C (40psi at 68°F)

**Process connections (standard)**
- 2 in. BSP flange

**Process connections (optional)**
- 51mm (2 in.) DIN flange

**Mounting**
- In pipeline

---

**Model 7652**

**Body material**
- Glass coupled polypropylene and polypropylene

**Operating temperature**
- –5 to 80°C (23 to 176°F)

**Max. temperature**
- 80°C (176°F) at atmospheric pressure

**Max. operating pressure**
- 2.75 bar at 20°C (40psi at 68°F)

**Process connection (standard)**
- Open tank

**Process connection (optional)**
- Sealed, adjustable flange
- 7654 – 1 clamp system
- 7655/6 – 2 clamp system

**Mounting**
- 1m, 2m or 3m

---

**Model 7654/5/6**

**Body material**
- Glass coupled polypropylene and polypropylene

**Operating temperature**
- –5 to 80°C (23 to 176°F)

**Max. temperature**
- 80°C (176°F) at atmospheric pressure

**Max. operating pressure**
- 2.75 bar at 20°C (40psi at 68°F)

**Process connection (standard)**
- Open tank

**Process connection (optional)**
- Sealed, adjustable flange
- 7654 – 1 clamp system
- 7655/6 – 2 clamp system

**Mounting**
- 1m, 2m or 3m

**Stem length**
- 1m, 2m or 3m
## pH/Redox (ORP) Analyzers
Models 4630 & 4635 (incorporating Water Wash Versions 4631 & 4636)

### SS/4630_12

#### Specification - Sensing System

<table>
<thead>
<tr>
<th>Model</th>
<th>Body material</th>
<th>Operating temperature</th>
<th>Max. temperature</th>
<th>Max. operating pressure</th>
<th>Process connections (standard)</th>
<th>Process connections (optional)</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>7660</td>
<td>316 stainless steel (wet section)</td>
<td>0 to 100°C (32 to 212°F) with high temp. electrodes</td>
<td>100°C at 6.6 bar (212°F at 100psi)</td>
<td>6.6 bar at 20°C (100psi at 68°F)</td>
<td>½ in. or 1 in. BSP</td>
<td>½ in. NPT</td>
<td>Surface mounting brackets</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Model</th>
<th>Body material</th>
<th>Operating temperature</th>
<th>Max. temperature</th>
<th>Max. operating pressure</th>
<th>Process connection (standard)</th>
<th>Dip Systems</th>
<th>Screw-in Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP100</td>
<td>Glass coupled polypropylene</td>
<td>0 to 100°C (32 to 212°F)</td>
<td>100°C (212°F) at atmospheric pressure</td>
<td>6.6 bar at 20°C (100psi at 68°F)</td>
<td>½ in. or 1 in. BSP</td>
<td>1m, 2m and 3m (39 in., 78 in., 118 in.)</td>
<td>1 in. NPT</td>
</tr>
</tbody>
</table>

---

…”Specification – Sensing System”
Overall Dimensions

Models 4630 and 4631 Wall-mount Versions

Models 4635 and 4636 Panel-mount Versions
Electrical Connections

Models 4630 & 4631 Wall-mount Versions

Note: 2nd retransmission output available when RS485 serial communications not used.

Models 4635 & 4636 Panel-mount Versions
## Ordering Information

### 4630 Series Analyzer

<table>
<thead>
<tr>
<th>Model 4630, 4631, 4635 or 4636 pH/Redox (ORP) Analyzer</th>
<th>463</th>
<th>X</th>
<th>X</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 0 to 14pH, power supply 110V/240V 50/60Hz, high and low alarms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Case</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall-mount IP66</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall-mount IP66 with water wash control</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel-mount IP66</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel-mount IP66 with water wash control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single isolated current output</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modbus™ serial data interface</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two isolated current outputs</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Ordering Information

### 7650/7660 Electrode System

<table>
<thead>
<tr>
<th>7650/7660 Series pH/Redox Electrode System</th>
<th>76</th>
<th>XX</th>
<th>/</th>
<th>0</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Type and Material</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Polypropylene Systems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow system with 1/2 in. and 1 in. process connections</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow system with 2 in. process connections</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dip system – 1m (39 in.)</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dip system – 2m (78 in.)</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dip system – 3m (118 in.)</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stainless Steel System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow system with 7/8 in. process connections</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Reservoir-fed reference version)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Connection Cable Length and Type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>With Automatic Temperature Compensation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No cable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m (10 ft) length</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5m (16 ft) length</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10m (33 ft) length</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20m (65 ft) length</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special length</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>For Redox</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No cable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m (10 ft) length</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5m (16 ft) length</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10m (33 ft) length</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20m (65 ft) length</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special length</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensor Types</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No sensor</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1720-000 all purpose glass pH electrode</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1730-000 standard reference electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1750-000 Pt100 temperature compensator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended for industrial process/waste water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1722-000 low resistance glass electrode</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1730-000 standard reference electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1750-000 Pt100 temperature compensator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended for potable waters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1740-000 Platinum Redox (ORP) electrode</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1730-000 standard reference electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For Redox (ORP) applications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1741-000 Antimony electrode (pH)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1730-000 standard reference electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended for pH applications where Hf is present in the sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High temperature glass pH electrode</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1730-000 standard reference electrode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1750-000 Pt100 temperature compensator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For high temperature applications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## AP100 Electrode System

### AP100 Series pH/Redox (ORP) Cartridge Sensor

<table>
<thead>
<tr>
<th>Cartridge Type</th>
<th>AP10</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayonet...cable detached (NOT Dip type)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet...cable attached (NOT Dip type)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw-in...cable detached</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submersible *</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sensor Type

- Standard glass (0 to 100°C, [32 to 212°F] 0 to 14pH) 1
- Standard glass + water wash (0 to 100°C, [32 to 212°F] 0 to 14pH) 2
- Low resistance glass (0 to 70°C, [32 to 158°F] 0 to 11pH) 3
- Low resistance glass + water wash (0 to 70°C, [32 to 158°F] 0 to 11pH) 4
- Redox (ORP) 5
- Redox (ORP) + water wash 6

### Cable Length

- No cable 00
- 1m (39 in.) cable 01
- 2m (78 in.) cable 02
- 3m (117 in.) cable 03
- 5m (16.25 ft) cable 05
- 10m (32.5 ft) cable (minimum length for Submersible Cartridge type) 10
- 15m (48.75 ft) cable 15
- 20m (65 ft) cable 20
- 25m (81.25 ft) cable 25
- 30m (97.5 ft) cable (available only for use with Submersible Cartridge type) 30

For Cartridge sensor only no further coding options are required
For full system continue selecting options

### Dip Type (operating temperature 0 to 80°C [32 to 176°F])

<table>
<thead>
<tr>
<th>Dip Type</th>
<th>AP10</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>No dip tube</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1m (39 in.) dip</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2m (78 in.) dip</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m (117 in.) dip</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1m (39 in.) dip + water wash</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2m (78 in.) dip + water wash</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m (117 in.) dip + water wash</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Flow Sensor Type (operating temperature 0 to 100°C [32 to 212°F])

<table>
<thead>
<tr>
<th>Flow Sensor Type</th>
<th>AP10</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>No flow cell</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet ½ in. BSP process connection glass-coupled polypropylene</td>
<td>01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet 1 in. BSP process connection glass-coupled polypropylene</td>
<td>02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet ½ in. NPT process connection glass-coupled polypropylene</td>
<td>03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet 1 in. NPT process connection glass-coupled polypropylene</td>
<td>04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw-in ½ in. BSP process connection glass-coupled polypropylene</td>
<td>05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw-in 1 in. BSP process connection glass-coupled polypropylene</td>
<td>06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw-in ½ in. NPT process connection glass-coupled polypropylene</td>
<td>07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw-in 1 in. NPT process connection glass-coupled polypropylene</td>
<td>08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet ½ in. NPT process connection stainless steel low volume</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayonet 1/8 in. NPT process connection Delrin low volume</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pipe-line adapter process connection 1½ in. BSP (bayonet fitting)</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Manual

<table>
<thead>
<tr>
<th>Manual</th>
<th>AP10</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>German</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Submersible Cartridge Type available only with either Sensor Type option 1 (Standard Glass) or 5 (Redox [ORP]).
 Submersible Cartridge Type available only with cable length of 10m (32.5ft) or over.
The 4600 Series transmitters are so user-friendly and easy to program they are normally supplied with standard factory settings. If specific programming requirements are stated at the time of ordering, units can be despatched suitably customized. Please apply to the nearest ABB office for details.

**Licensing, Trademarks and Copyrights**

Modbus is a registered trademark of Modicon Inc.