pH and ORP SENSORS

Analyzer/Transmitter Models TB82PH and TB84PH

Terminal TB2			ABB Sensor Models					
Color	Number	Description	TB5	TBX5	AP100	AP200	AP300[3]	7650/7660
Blue	1	Measuring electrode	Blue[1]	Blue	Clear	Clear	Blue	Clear
Yellow	2	Shield for measuring electrode	None	Yellow	None	Red	None	None
Black	3	Reference	Black[1]	Black	Black	Blue	Black	Black
Green	4	Solution (diagnostic) Ground	None	Green	None	Green/Yellow	None	None
Red	5	RTD	Red[2]	Red[2]	Red	Gray & White	Red	Red[4] (2 total)
White	6	RTD	White[2]	White[2]	White	Green	White & Gray	White
Heavy Green	7	Shield (Screen)	None	Heavy Green (Shield)	None	None	None	Yellow
None	8	Not Used	None	None	None	None	None	None

Notes:
1. BNC adapter required on sensors supplied with a BNC termination (See Figure 4).
2. Red and White wires not present on pH sensors sold without temperature compensators or ORP sensors
3. Cut away and discard gray wire on AP300 sensors (if present)
4. Place both red wires in terminal 5

Analyzer/Transmitter Models AX46- and AX4-6

AX4xx Analyzer Terminal Block No.		TB5 Series pH Sensors		TBX 5 Series pH Sensors	
Sensor B	Sensor A	Color	Function	Color	Function
B1	B9	White	Temperature Compensator	White	Temperature Compensator
B2	B10	Not Used	Short from B9 to B10 and B2 to B1	Not Used	Short from B9 to B10 and B2 to B1
B3	B11	Red	Temperature Compensator	Red	Temperature Compensator
B4	B12	Not Used	Not Used	Black	Reference Electrode
B5	B13	Not Used	Not Used	Not Used	Not Used
B6	B14	Black	Reference Electrode	Green	Solution Ground
B7	B15	Not Used	Not Used	Yellow	Screen/Shield
B8	B16	Blue	Glass/Metal Electrode	Blue	Glass/Metal Electrode

2-ELECTRODE CONDUCTIVITY SENSORS

Analyzer/Transmitter Models TB82TE and TB84TE

Terminal Block TB2		ABB Sensor Models		
Number	Description	2045 and 2077*	2025, 2078, 2085, 2089	TB2 & AC220 Series
1	Drive	Red or C-Terminal	Red	Green
2	Sense	None	None	None
3	Sense	None	None	None
4	Drive	Black or E-Terminal	Black	Black
5	RTD / TC	Green/Yellow and Blue or T-Terminal	Blue and Green/Yellow	Blue
6	RTD / TC	Brown or T-Terminal	Brown	Yellow
7	Shield (Screen)	None	None	Heavy Green
8	Not Used	None	None	None

Notes:
  * Models 2045 and 2077 sensors are supplied with terminals for wire connections. Cable colors are given for ABB supplied cable, P/N 0233-811 for electrodes and 0233-819 for temperature elements

Analyzer/Transmitter Models AX41- and AX411

Terminal Block B			ABB Sensor Models		
Sensor B	Sensor A	Description	2045 and 2077	2025, 2078, 2085, 2089	TB2 & AC220 Series
B1	B9	TC Common	Green/Yellow or T-Terminal	Green/Yellow	Blue
B2	B10	TC Third Lead*	Blue or T-Terminal	Blue	None*
B3	B11	TC	Brown or T-Terminal	Brown	Yellow
B4	B12	Screen	Screen	None	Heavy Green
B5	B13	Cell (Drive)	Red or C-Terminal	Red	Green
B6	B14	Cell (Earth)	Black or E-Terminal	Black	Black
B7	B15	Not Used	None	None	None
B8	B16	Not Used	None	None	None

Notes:
  * For conductivity sensors without a three-wire temperature element, link terminals 1 & 2 and terminals 9 & 10

4-ELECTRODE CONDUCTIVITY SENSORS

Analyzer Models TB82EC and TB84EC

Terminal Block TB2		Sensor Model
Number	Description	TB4 Series
1	Drive	Green
2	Sense	Red
3	Sense	White
4	Drive	Black
5	RTD / TC	Blue
6	RTD / TC	Yellow
7	Shield (Screen)	Heavy Green
8	Not Used	None

Analyzer Models AX43- and AX4-3

| Terminal Block B			Sensor Model
Sensor B	Sensor A	Description	TB4 Series
B1	B9	Temp Common	Blue
B2	B10	TC Third Lead*	None*
B3	B11	TC	Yellow
B4	B12	Screen	Heavy green
B5	B13	Drive -	Green
B6	B14	Sense -	Red
B7	B15	Sense +	White
B8	B16	Drive +	Black

Notes:
  * For conductivity sensors without a three-wire temperature element, link terminals 1 & 2 and terminals 9 & 10
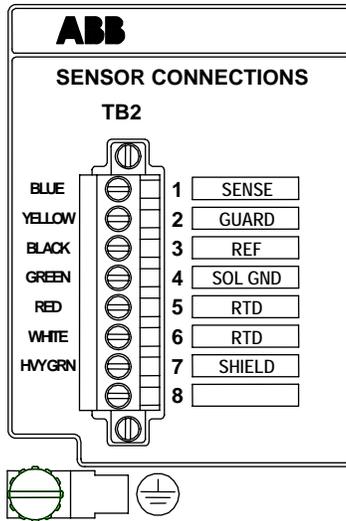
**Figure 1 – TB82 and TB84 Terminal Block**
pH and ORP sensors
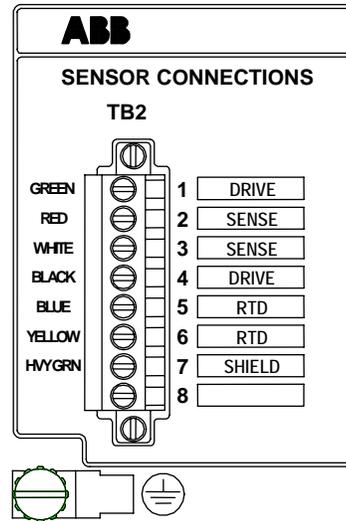
Figure 2 – TB82 and TB84 Terminal Block
2- and 4-Electrode
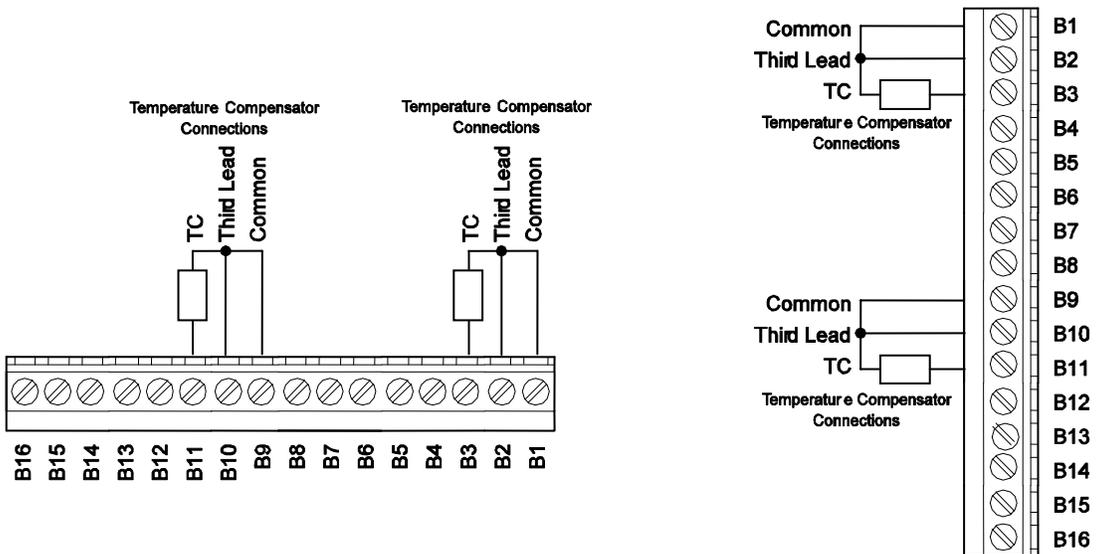
Figure 3 – AX4 Terminal Block
Wall/Pipe Mount (Left) / Panel Mount (Right)
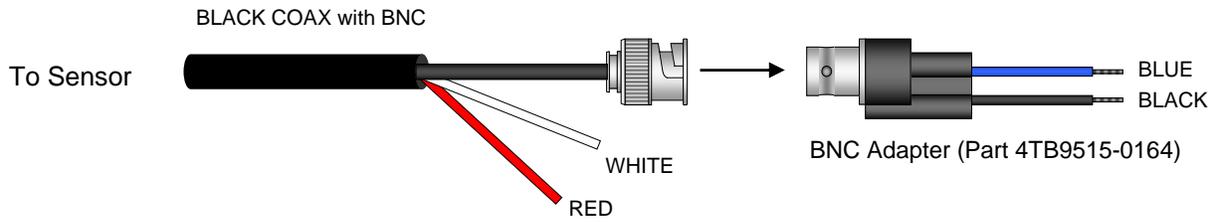
Figure 4 – pH BNC Cable Connection to BNC Adapter
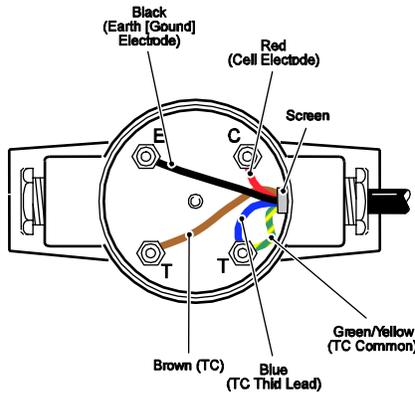
Figure 5 – Models 2045 & 2077 2-Electrode Sensors
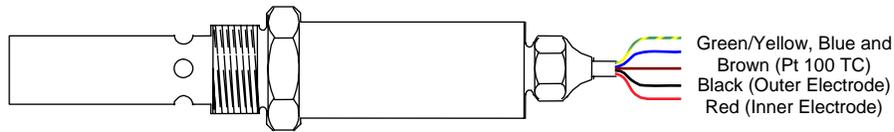
Figure 6 – Model 2025, 2078, 2085 and 2089 2-Electrode Sensors
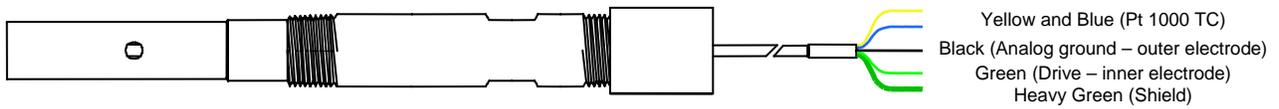
Figure 7 – Model TB2 2-Electrode Sensors
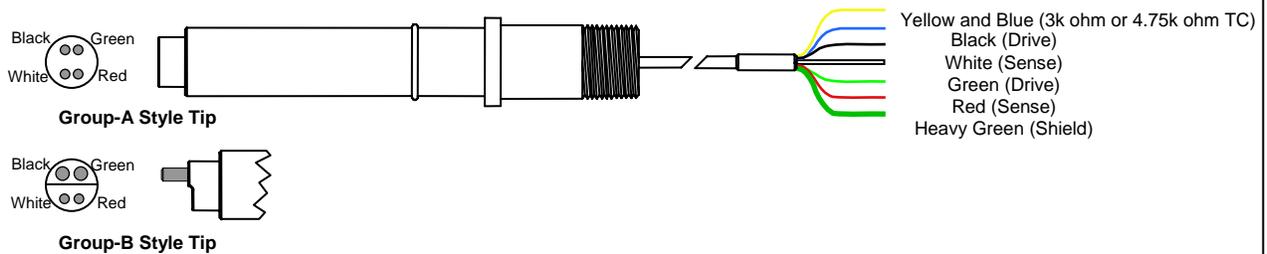
Figure 8 – Model TB4 4-Electrode Sensors

ABB

PG_Sensor_Connection_B