Diamond Power® Series II — Multi-Probe Electronic Level Indicator

The Diamond Power® Series II multi-probe electronic level indicator (ELI) from Babcock & Wilcox (B&W) was developed to satisfy basic level indication needs utilizing vacuum-brazed probes for boiler drum, feedwater heaters and other liquid level applications. The multi-probe system consists of three major components: the column with probes, the detection and verification unit (D&V), and the remote display.

The conductivity probe with vacuum-brazed insulators has been proven reliable for many years of service. The Swagelok® metal-to-metal seal of the multi-probe system provides leak-proof installation in the column.

Operation of the system is based on measurement of the difference in resistance between water and steam, which is compared with a known reference resistor. The signal output to the probes is a symmetrical source wave ± 5 VDC current which precludes electroplating of the probe. The ELI measures the returning signal to indicate 'water' or 'steam.'

Features

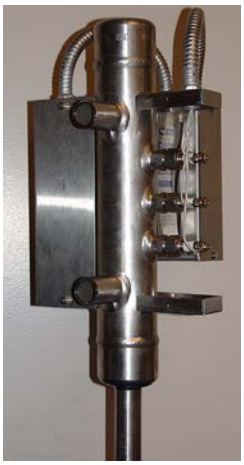
- Solid-state electronics and two-color display
- Solid-state output to drive up to three remote displays
- NEMA 4X (IP65) enclosed detection and verification unit
- 10 amp power relay contact output for each probe to control trips and alarm
- Three-way adjustment for water conductivity
- Standard remote customized LED display panel

Benefits

- Electronic self-monitoring and indication in the D&V unit; optional probe wire continuity monitor, power supply failure (redundant power supplies), clock (DC detection circuit) failure
- 10 amp power relay contact output for electronic faults
- 10 amp power relay contact output for level fault (water over steam)
- On board water detection indication in the D&V unit

Applications

For boiler drum level indication to maintain proper steam drum water level — If the water level is too low, boiler tubes may be damaged. If the water level is too high, damage to the steam separator or steam turbine from water carry over can occur.



For high and low pressure feedwater heaters for detection of abnormal high or low levels within the feedwater heater steam section — The multi-probe ELI provides critical alarm and trip function. If the condensate level in the heater is too high, the heater will not operate at maximum efficiency, and could cause the steam safety valve to open. If too low, steam is discharged directly into the next heater, also reducing efficiency.

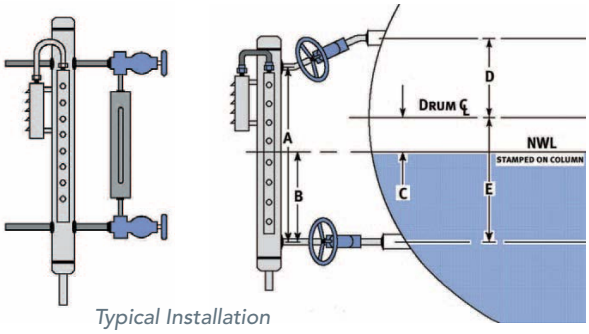
The multi-probe ELI was designed to satisfy the 2013 ASME* Boiler and Pressure Code (Section 1, Para, PG-60) requirement. A multi-probe ELI installed as one of two remote indicators along with the required gauge is shown.

A duplicate multi-probe ELI can be used as the second remote indicator. The column with probes provides remote indication and also acts as a stabilizer for the gauge.

** Water column to be certified in accordance with ASME Section 1*

Availability

The Multi-Probe column is custom manufactured to provide the most accurate indication for any application. The electronic system in the D&V unit is connected to 5, 8, 10, 12 or more probes that are spaced to indicate water and steam through a desired operating range.



Typical Installation

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Specifications	
Power Source	120 or 240 VAC, single phase, 50-60 Hz, 1/2 -1/4 A
Relay Contact Ratings	10A @ 120 VAC, 8 A @ 24 VDC, 1/3 HP @ 120 VAC
Supply Current	1/4 and 1/8 A
Column	Ratings – up to 3000 psi (207 bar) and 1200F (649C) maximum. Materials – Carbon Steel, Stainless Steel and Chrome Moly
Enclosure	NEMA 4X (IP66)
Conductivity Capability	0.5 micro mho
Electronic Unit to Column Distance	0.5 to 4 micro mho – 65 ft (20 m) 4 to 25 micro mho – 165 ft (50 m) Above 25 micro mho – 500 ft (150 m)

Options

To customize unit for individual applications:

- Door mounted local display
- Small remote display (reduced size for desk mounting)
- Dual power source
- Adjustable trip/alarm time delay
- In service test switch
- Additional remote displays
- Column mounted pre-wired junction box
- Wire continuity fault detection
- Zener diode barrier for hazardous applications
- 2000 and 3000 psi (138 and 207 bar) FM approved systems
- 16, 20, 24 (and up) probe systems

IMPORTANT: The 4-20 mA serial module produces a smooth continuous signal from the discrete probe levels. However, since the probe indications are "point" measurements, it is not intended for level control. It should only be used for remote indication or level recording.

4-20mA analog output for level indication or trend recording

- Intelligent I/O card designed to provide an isolated analog signal
- Integrity is provided via watchdog logic
- Has a 3-wire RS-485 Serial Output link to drive the multi-probe display indicators
- Multiple remote displays can be daisy-chained together
- Analog module powered from 3000M electronics (default) or from external power source (optional)

Electronic Level Indicator

***Ordering**: Use B&W form SP-652 to list the particular equipment design specifications, configurations, and options.*

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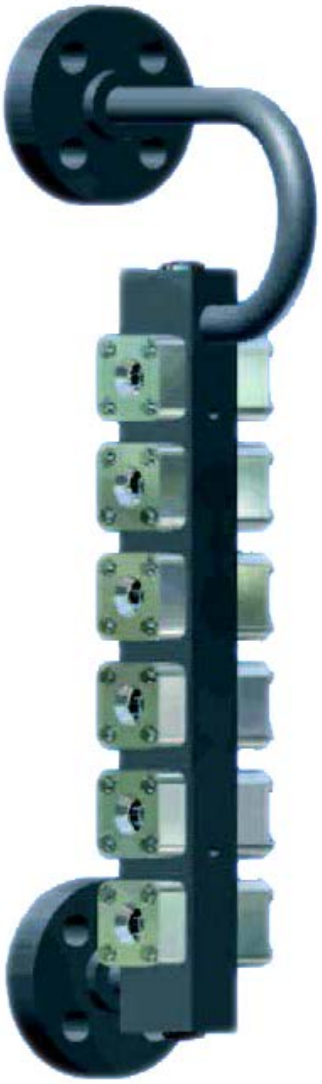
Diamond Power® Series II — Ported Level Gauge (Bi-Color)

The Diamond Power® Series II ported level gauge (bi-color) from Babcock & Wilcox (B&W) is a 3000 psi (207 bar) ported gauge that produces a red/green image to indicate the water level in a high-pressure steam drum. Light projected through steam produces a red image. Light projected through water is refracted (bent) and produces a green image.



Features

- Designed for 3000 psi (207 bar) and 696F (369C) steam service
- Body is precision machined into a trapezoidal shape
- Laminated and die formed graphoil sealing gasket
- Constructed to the ASME Boiler and Pressure Vessel Code requirements for design, materials and construction

Benefits

- One piece type 304L stainless steel body and covers provide corrosion resistance and long service life
- Belleville spring washers maintain gasket loading under thermal and pressure cycles
- Precision tempered and ground aluminosilicate glass provides clear visibility
- Two discs of premium V-1 quality clear ruby mica protect the glass from steam and extend service life

Options

- Visibility: gauges are available in a range of standard visibilities from 12.5 in. up to 42.5 in. (318 to 1080 mm) to suit various applications
- End connection options: flanged with pipe expansion loop, or pipe nipple ended for use with tubular packing box valves
- Gauge flange spacing: standard flange center, or customized to suit retrofit applications
- Solid-state illuminator with level display provides clear red/green image and a 10-year maintenance free service life. Illuminator can be easily modified for use in hazardous (explosive) areas.
- Ported style visual gauges require a RED/GREEN illuminator to indicate the water level. This is required by ASME Boiler Code.
- Gauges can be incorporated with other standard components and provided as part of a complete boiler level equipment package including:
  - Plain water column to match drum centers and gauge
  - Diamond Power electronic level column with probes, remote indication and controls
  - Gauge isolation valves with chain wheel operators and chain
  - Column isolation valves and drain valves

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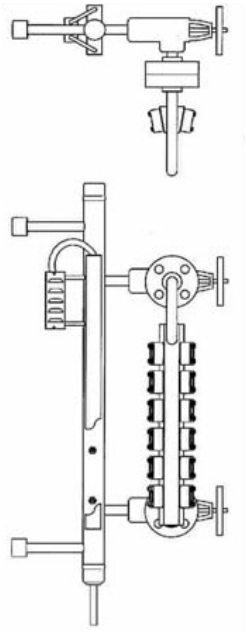
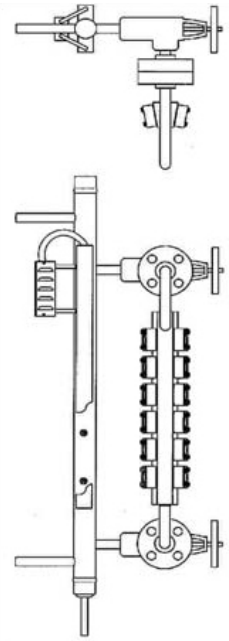
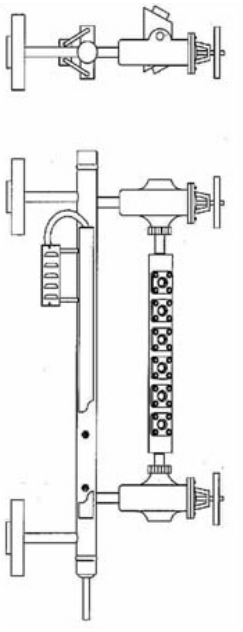
Ported Level Gauges Installed on a Diamond Power® Series II Electronic Level Column



Side Flange Mounting



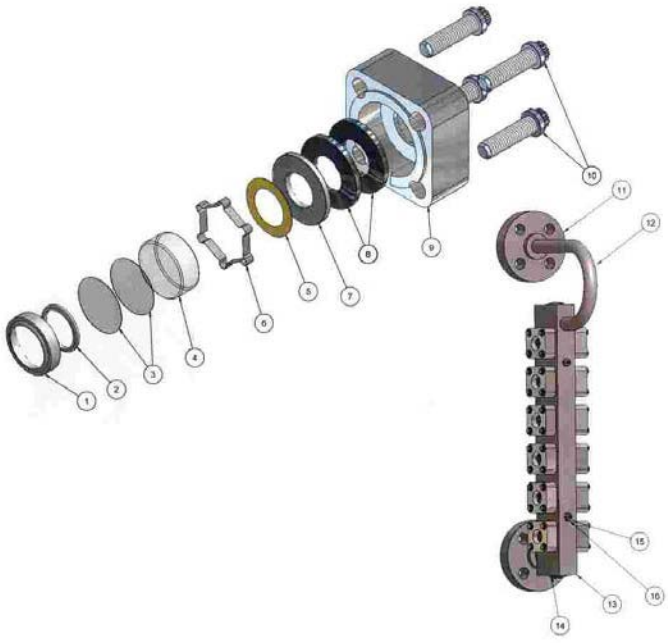
Bottom Flange Mounting



Pipe Nipple Mounting

Item	Qty	Description	Material
1*	1	Gasket Retainer	Stainless Steel
2*	1	Sealing Gasket	Graphoil
3*	2	Mica	Mica
4*	1	Glass	Tempered Aluminosilicate
5*	1	Cushion Gasket	Non-Asbestos
6	1	Glass Retaining Spring	Stainless Steel
7	1	Flat Washer	Stainless Steel
8	2	Belleville Washer	Stainless Steel
9	1	Port Cover	ASME SA 351 CF8
10	4	Cover Bolt	ASME SA 193 B7
11	2	Flange	ASME SA 105
12	1	Pipe	ASME SA 106 GR.B
13	1	Gauge Body	ASME SA 479 TYPE 304
14	2	Plug	ASME SA 182 TP 304
15	4	5/16-18 Stud	Stainless Steel
16	4	5/16-18 Nut	Stainless Steel

*Included in the Bi-color Gauge Port Repair Kit: P/N DP-46-20 0110



***Ordering**: Use B&W form SP-653 to list the particular equipment design specifications, configurations, and options.*

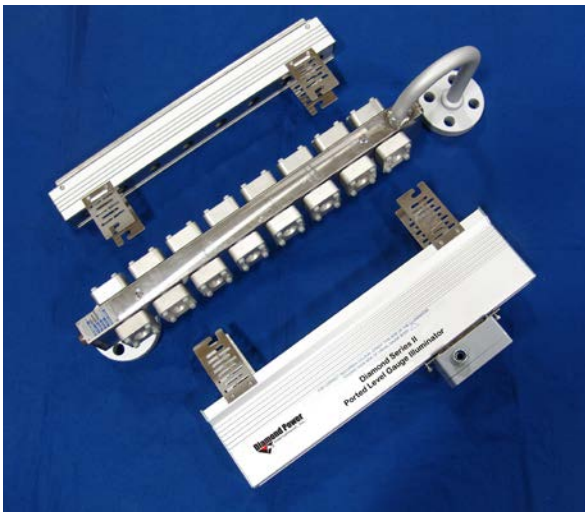
Diamond Power® Series II — Bi-Color Gauge Illuminator System

The solid state bi-color gauge illuminator and display attach to the ported level gauge (required) to produce a red and green image on the display.

The red/green image is produced by an array of solid state light emitting diodes (LEDs) and precision lenses that focus the image through the gauge body onto the display.

The LED arrays and precision plano-convex lens provide a bright, clear and unmistakable image in the presence of steam and water. The high intensity narrow beam LEDs are mounted on an electronic printed circuit board with current limiting resistors.

A precision 24 VDC power supply provides the illuminator with the exact current that is required for a constant clean image.



The standard bi-color gauge illuminator system is required on the ported level gauge.

Features

- Indoor or outdoor installations rated NEMA 4X
- Easily removed for gauge port inspection or repair
- Illuminator and display are extremely lightweight and compact
- Illuminator power supply can utilize voltage of either 120 or 240 VAC
- 6 LEDs per port produce extremely bright image, visible from more than 100 ft (30 m)
- Level display enables operator to easily view image without standing at a precise spot

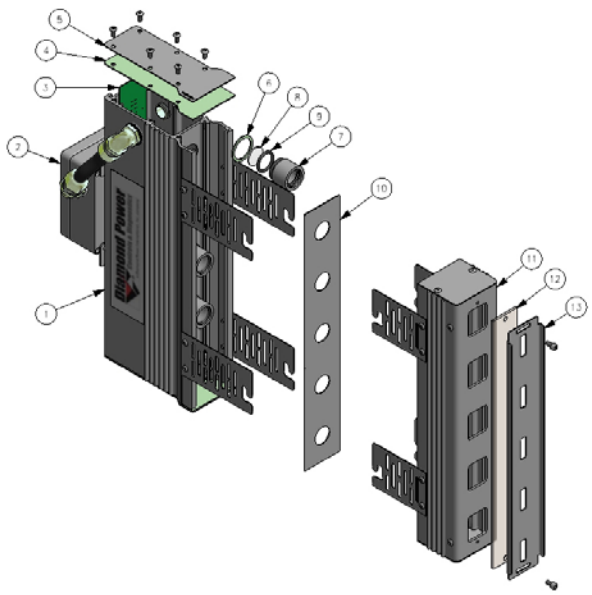
Options

- Display hood for increased visibility of display in bright sunlight
- Mirror or closed-circuit TV for remote viewing

Benefits

- All stainless steel and aluminum construction provides corrosion resistance and long service life
- LEDs are immune to failure from vibration
- Extremely efficient; converts virtually all energy into light, reducing power consumption and costs. Only 0.5 watts per port.
- Average LED life is 11 years, resulting in reduced maintenance and service costs
- Absence of fragile colored glass prevents unnecessary repairs
- Display and illuminator can be installed on either side of the gauge to provide viewing flexibility
- Adjustable end plate for exact placement of viewing screen, providing an unmistakable image

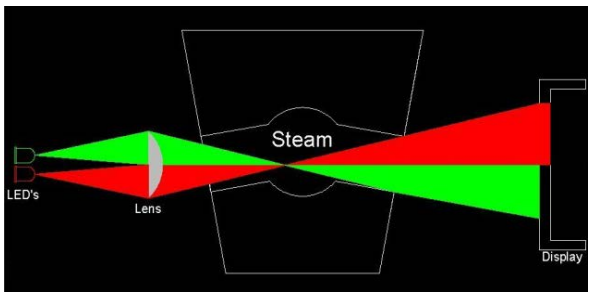
Bi-Color Gauge Illuminator Parts Reference Guide



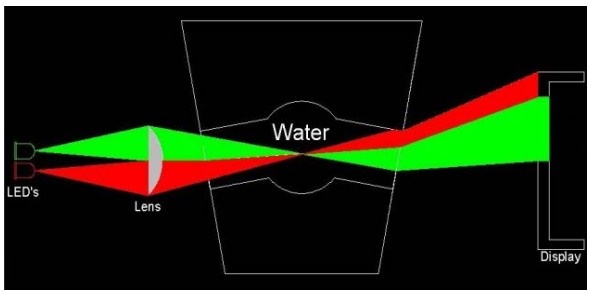
Parts List

Item	Description
1	Illuminator Cabinet
2	Power Supply
3	LED PCB
4	Gasket
5	Cover
6	Lens Gasket
7	Lens Holder
8	Lens
9	O-ring
10	Heat Divider
11	Display Cabinet
12	Display Window
13	Adjustable End Plate

Bi-Color Gauge Operation



Observer sees RED



Observer sees GREEN

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Diamond Power® Series II — 1 to 4 Probe Electronic Level Indicator

The Diamond Power® Series II – 1 to 4 probe electronic level indicator (ELI) from Babcock & Wilcox (B&W) was specifically designed to meet the growing needs and demand for a reliable, cost effective and versatile means of sensing water levels in a variety of applications.

Equipped with one to four probes which are mounted in a column, the 1 to 4 probe measures the difference in resistance between high purity water and steam.

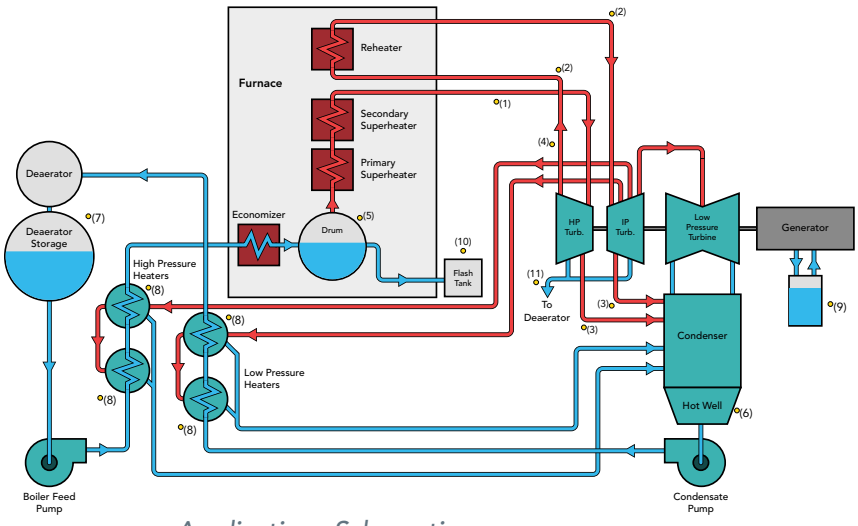
To provide maximum system reliability and diagnostics, redundant power supplies are incorporated to maintain system operation while alarming operators of system service requirements.

In addition to level indication the 1 to 4 probe provides relays for each probe, enabling it to service as a system trip, alarm or on-off control device. The system is completely field configurable to provide maximum versatility.

Diamond Power® Series II 1 to 4 Probe ELI with steam/water differentiator

Features

- Up to four (4) independent electrode channels
- 120/240 VAC operation
- Probe wiring continuity monitor
- Level fault monitor
- Four (4) level relay outputs – 10 amp rated
- Redundant power supplies



Applications Schematic

Applications

1. Main stream header drain
2. Hot and cold reheat drains
3. Turbine extraction drain
4. Turbine water induction prevention (TWIP)
5. Main boiler high/low alarms and trips
6. Hot well alarms
7. Deaerator storage level alarms
8. HP and LP feedwater heater – column level alarms and trips
9. Generator coolant liquid level
10. Blow-down flash tank alarm
11. Turbine casing drains

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Benefits

- Passive non-moving sensors – no moving parts to fail
- Local fault indication on:
  - Power supply failure
  - Probe wire/connector failure
  - Level indication failure
  - Clock (timing circuit) failure
- Field configurable to handle any service requirement
- Economical alternative to float level switches

Column Options

- Completely hydro tested assemblies with 1 to 4 probe locations with 1 in. socket weld drum connections
- Column mounted pre-wired junction box
- Column ratings
  - Up to 3000 psi (21 MPa) maximum
  - 1200 F (650C) maximum
- Column ratings
  - Carbon steel
  - Stainless steel
  - Chrome moly

Availability and Ordering

Each 1 to 4 probe system includes: one detection/ verification unit, a maximum of four conductivity probes each with one of the following:

- 1.5 in. (38 mm) male socket weld probe connector welded in 1.5 in. (38 mm) ANSI Class 3000# SW TEE
- 1 to 4 port water column
- Request Form SP-654 to list the particular equipment design specifications, configurations, and options

Specifications	
Supply Voltage	120 or 240 VAC
Supply Frequency	50 to 60 Hz
Supply Current	1/4 & 1/8 A
Relay Contact Ratings	10A @120 VAC, 10A @24 VDC Resistive, 1/3 hp @ 120 VAC
Enclosure	NEMA 4X
Enclosure Dimensions	11.75 in. x 7.375 in. x 6.75 in.
Weight	13 lb (6 kg)
Ambient Temperature	32 to 140F (0 to 60C)
Conductivity Capability	0.5 micro mho and up
Electronic Unit to Column Distance	500 ft (150 m) @ >25 micro mho 164 ft (50 m) @ 4 to 25 micro mho 65 ft (20 m) @ ≥ 0.5 micro mho

Steam/water differentiator

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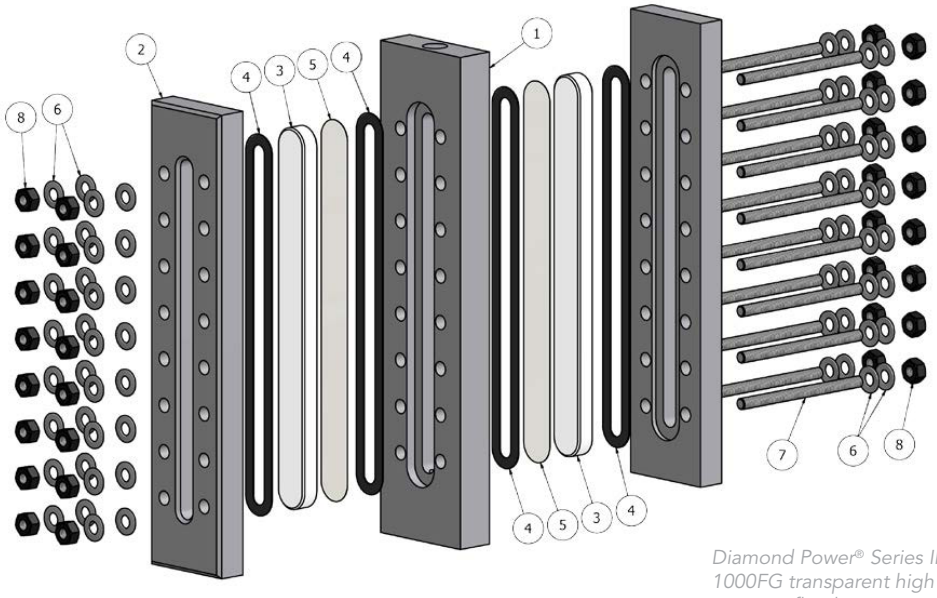
Diamond Power® Series II — 1000FG Transparent Gauge



Diamond Power® Series II 1000FG transparent high pressure flatglass gauge

The Diamond Power® Series II – 1000FG transparent high pressure gauge from Babcock & Wilcox (B&W) is designed to meet the latest changes in the ASME Boiler and Pressure Vessel Code. This gauge eliminates areas where the liquid level cannot be readily determined due to cross webbing. To meet this standard and still maintain the structural integrity of the gauge, bodies are made thicker and longer to resist deflection.

Features

- Full length visibility with no obstructions gives definitive readings and conforms to the latest ASME codes for sight glass gauges
- Rated pressure of 1000 psi (7 MPa)
- Belleville spring washers maintain constant gasket loading under thermal and pressure cycles

Benefits

- Wide gauge body design resists deflection reducing the chance of gasket failure
- Precision tempered and ground borosilicate glass provides high strength and clear visibility
- Mica shields protect glass from effects of erosion for an extended service life

Item	Qty	Part	Material
1	1	Body	SA-516 Carbon Steel
2	2	Cover	SA-516 Carbon Steel
3	2	Glass	Borosilicate
4	4	Gasket	GRAPH-LOCK® with 316SS foil core
5	2	Shield	Mica
6	40-64	Washer	SS Belleville spring
7	10-16	Stud	SA-193 Grade B7
8	20-32	Nut	SA-194 2H steel

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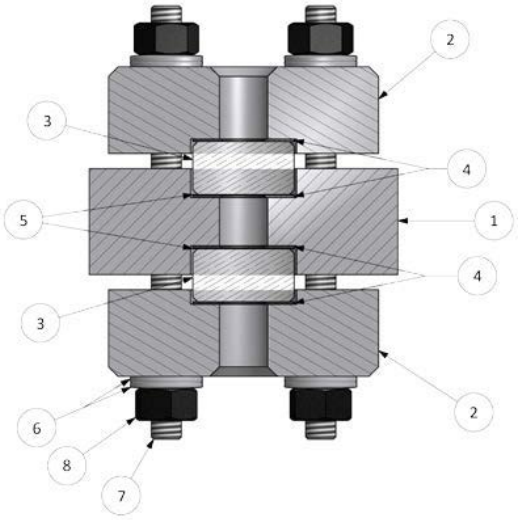
Dimensions

Gauges are available in sizes 5 (7.875 in. [200 mm]) through 9 (12.625 in. [320 mm]) visible lengths. Multiple gauges can be combined to create visibilities up to 24 in. (610 mm) long. When multiple gauges are used, a 1 in. (25 mm) minimum overlap of the visible sections is required.

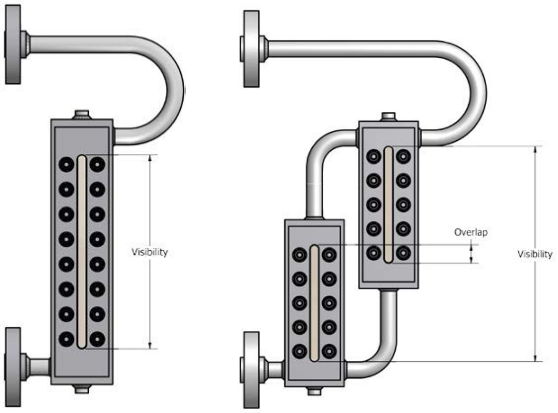
Size	No. of Sections	Visibility	
		(in.)	(mm)
5	1	7-7/8	200
6	1	9-1/8	232
7	1	10-1/4	260
8	1	11-7/8	302
9	1	12-5/8	321
5	2	14-1/2	368
6	2	17	432
7	2	19-1/4	489
8	2	22-1/2	572
9	2	24	610



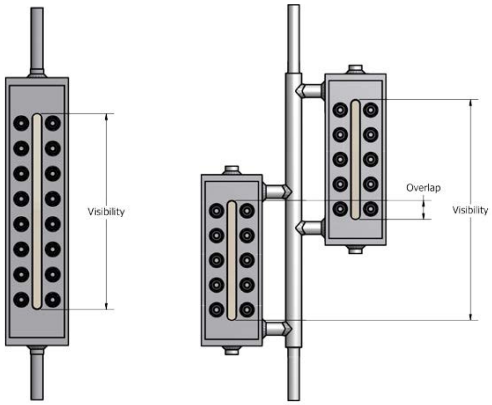
Connections

Standard connections are 0.75 in. (19 mm) pipe nipple or flanged (optional). Custom sizes and configurations are available upon request.

Flange Connection



Pipe Nipple Connection



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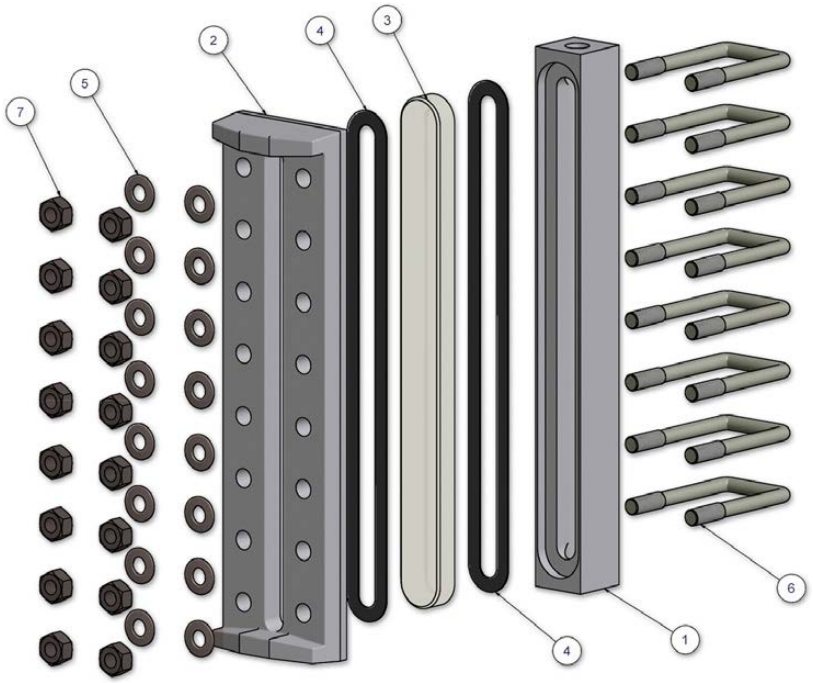
Diamond Power® Series II — Reflex Gauge



The Diamond Power® Series II – reflex gauge from Babcock & Wilcox (B&W) provides excellent visibility of liquid level. Light refracting grooves in the glass cause liquid to appear black and gas to appear white. The high contrast between liquid and gas allows gauges to be stacked on top of one another without concern for blind spots between gauges.

Features

- Constructed to the ASME Boiler and Pressure Vessel code requirements for design, materials, and construction
- Rated pressure of 650 psi (4.5 MPa); 350 psi (2.4 MPa) for steam.
- Gauge body machined from a single piece of SA-105 steel
- Assembled with alloy steel nuts and bolts capable of withstanding high temperatures

Benefits

- Recessed gasket surfaces in both cover and body facilitate glass and gasket alignment and also help prevent gasket blowout
- Precision tempered and ground borosilicate glass provides high strength and clear visibility
- Optional Belleville spring washers maintain constant gasket loading under thermal and pressure cycles

Item	Qty	Part	Material
1	1	Body	SA-105 Carbon Steel or SA-479 Stainless Steel (optional)
2	1	Cover	SA-216 WCB
3	1	Glass	Borosilicate
4	2	Gasket	GRAPH-LOCK® with 316SS foil core
5	10-16	Washer	*SS Belleville spring
6	5-8	U-Bolt	SA-193 Grade B7
7	10-16	Nut	SA-194 2H Steel

** Optional*

Reflex glass cannot use mica shields.

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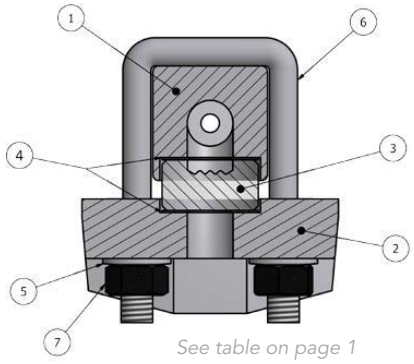
Dimensions

Gauges are available in sizes 5 (7.875 in. [200 mm]) through 9 (12.625 in. [320 mm]) visible lengths. Multiple gauges can be stacked on a continuous body chamber to create visibilities up to 111.5 in. (2832 mm) long.

Connections

Available connection types are end, side and back with either 0.5 in. (13 mm) or 0.75 in. (19 mm) pipe nipple or flanged connections.

Size	No. of Sections	Visibility	
		(in.)	(mm)
5	1	7-7/8	200
6	1	9-1/8	232
7	1	10-1/4	260
8	1	11-7/8	302
9	1	12-5/8	321
5	2	17-1/4	438
6	2	19-3/4	502
7	2	22	559
8	2	25-1/4	641
9	2	26-3/4	679
6	3	30-3/8	772
7	3	33-3/4	857
8	3	38-5/8	981
9	3	40-7/8	1038
7	4	45-1/2	1156
8	4	52	1321
9	4	55	1397
7	5	57-1/4	1454
8	5	65-3/8	1661
9	5	69-1/8	1756
8	6	78-3/4	2000
9	6	83-1/4	2115
8	7	92-1/8	2340
9	7	97-3/8	2473
8	8	105-1/2	2680
9	8	111-1/2	2832



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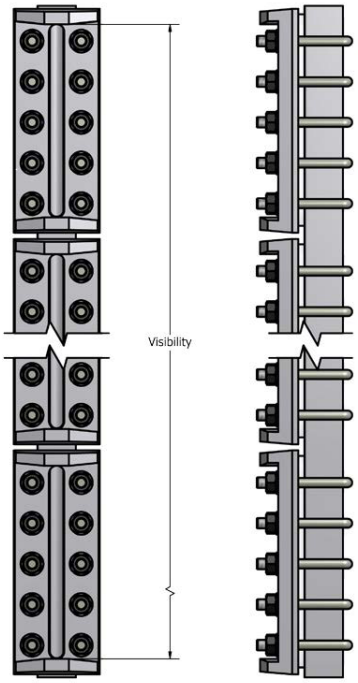

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Diamond Power® Series II — Single Detection Circuit (SDC) Alarm Module

The Diamond Power® Series II – single detection circuit (SDC) alarm module from Babcock & Wilcox (B&W) represents the latest advancement in electronic level detection designed to meet increasing industry demand for a reliable, cost effective and versatile means of sensing water in high temperature and pressure applications.

The SDC alarm measures resistance, and reports the presence of either steam or water based on fluid conductivity.

The probe can be mounted directly to the pressure vessel by welding the probe connector in a tee or column. Its Swagelok® metal-to-metal seal provides a leak-proof installation.

The SDC alarm module is an effective electronic replacement for mechanical floats switches and can be conveniently located up to 65 ft (20 m) away from the probe with low conductivity water, and 500 ft (152 m) away with high conductivity water.

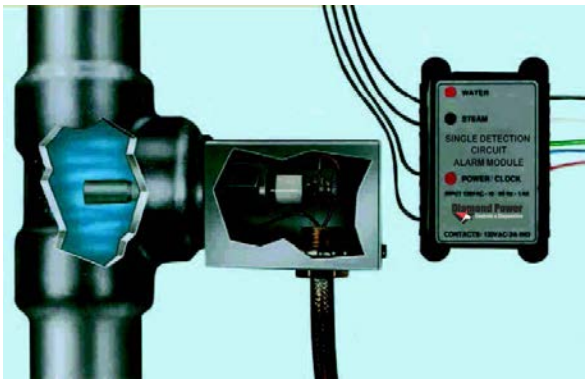
Three LED indicators provide visual verification, showing 'WATER," "STEAM" and "POWER/CLOCK." The "POWER/CLOCK" LED flashes under normal conditions to show that power is present and the clock is properly functioning.

Features

- Stand-alone plug-in module
- 120 or 240 VAC operations, 50/60 Hz
- Power/Clock fault monitor
- Local indication (up to 500 ft [152 m] away)
- Two "FORM-C" type relay contacts

Benefits

- Relay can be set as "fail safe" in case of power failure
- Proven electronic sensor – no moving parts to fail
- Field configurable to handle service requirements
- Ideal replacement for float switches



Applications

- Main steam header drain
- Hot and cold reheat drains
- Turbine extraction drain
- Turbine water induction prevention (TWIP)
- Main boiler high/low alarms and trips
- Hot well alarms
- Deaerator storage level alarms
- HP and LP feedwater heater – column level alarms and trips
- Generator coolant liquid level
- Blow-down flash tank alarm
- Turbine casing drains

(Continued on reverse side)

Specifications	
Supply Voltage	120VAC or 240VAC
Supply Frequency	50/60 Hz
Supply Current	1/2 amp @ 120VAC and 1/4 amp @ 240 VAC Relay Contact: 2 Form "C"
Contact Rating	5 Amp at 24VDC or 120VAC, 1/3 hp @ 120VAC
LED Indicators	Water, Steam, Power/Clock
Conductivity Capability	0.5 micro mho and up
Probe Output Voltage	± 5 VDC
Low Pressure Probe Rating	650 psi @ 500F (4.5 MPa @ 260C)
High Pressure Probe Rating	Above 650 psi (4.5 MPa)
Operating Ambient Temperature Electronics	32 to 140F (0 to 60C)
Weight	2.3 lb (1 kg)

SDC Alarm Module System

Each single detection module system includes:

- Electronic module
- HP or LP probe
- Probe cover
- Three ft (1 m) of HT wire
- 20 in. (0.5 m) of braided conduit
- 1.5 in. (13 mm) probe connector welded in a 1.5 in. (13 mm) ANSI Class 3000# SW TEE, P/N DP-49-98-2205
- P11, P22, P91 tee materials and 1-probe water columns available upon request

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Diamond Power® Series II — Gauge Aftermarket Parts

Level Probe and Column

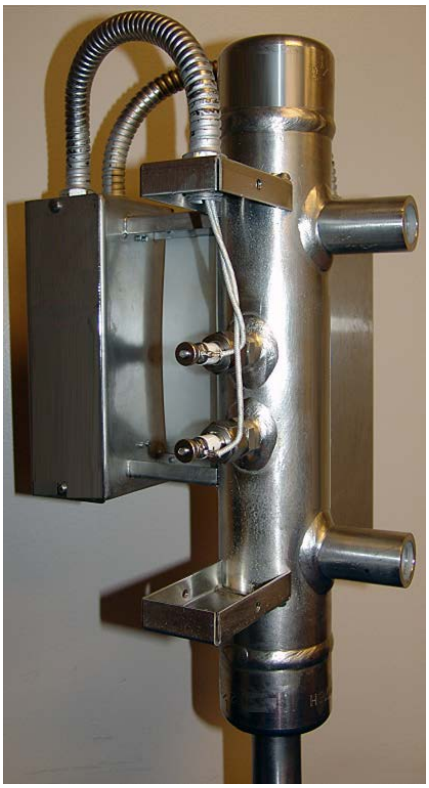
The Diamond Power® Series II level probe and column from Babcock & Wilcox (B&W) are designed for steam/water level measurements using conductivity type electronic level detection systems. The probe and column can now replace leaking probe gaskets, failed probes, and corroded columns with superior technology, which is fully compatible with any existing electronic systems. The use of a junction box that is pre-wired to the probes makes installation simple.

Diamond Power® Series II Brazed Probe

Features

Diamond Power® brazed probes

- High density zirconium oxide ceramic wetted insulator improves steam and water detection through minimized contaminant build-up and enhanced water shedding
- 304 stainless steel body and tip
- Body and tip are vacuum brazed to insulator
- Conductivity sensing to 0.25µmho through high joint integrity
- Simplified construction using brazed joint eliminates requirement for Belleville washers, copper cushion washer and critical rod bolt tension preload
- 100% gas tested to 2000 psi (14 MPa)
- Hydro tested to 6000 psi (41 MPa)
- Maximum pressure 3000 psi (21 MPa)
- Maximum temperature 1200F (650C)
- Swagelok® seal profile machined into bar stock probe body



Diamond Power® Series II Level Columns

Specifications	
Design Pressures	650, 2000, 3000 psi; 1200F maximum (4.5, 14, 21 MPa; 650C)
Materials	A106 carbon steel, chrome moly and various stainless steel materials
Connections	Pipe stub, NPT, butt weld and flanged connections
Options	Column mounted junction box with all probes pre-wired to the terminals lifting lug isolation valves

DP5500 Ball Check Valve & DP5501 Flow Restrictor

The Diamond Power® Series II ball check valve and flow restrictor from B&W are designed to be used with visual level gauges to prevent excessive discharge from the gauge in case of glass failure. The ball check valve is installed on the lower gauge connection and the flow restrictor orifice is installed on the upper gauge connection. If the gauge glass or sealing gasket should fail catastrophically, the ball check will close, reducing the discharge of hot water and steam from the gauge to the atmosphere.

The ball check valve and flow restrictor are available in a number of mounting configurations. These can be incorporated into the gauge isolation valve flange, welded into the pipe line, or inserted as a "wafer style" valve between 0.75 in. (19 mm) Class 2500 large male/large female flanges. This design configuration ensures that the check valve cannot be installed in the system backwards.

The ball check valve can be inspected in-line by first shutting the gauge isolation valves and then removing the lower access plug.

Features

- Forged steel body, stainless steel ball
- Flange configuration prevents improper orientation
- Meets ASME Section 1 and Appendix A-18 requirements
- Reduces excessive steam discharge in case of gauge glass failure
- Has no effect on normal gauge operation
- Can be inspected in-line
- Rated for 3000 psi (21 MPa) steam service at 696F (370C)

Level Gauge Isolation Valves

B&W offers a variety of high quality Diamond Power® Series II valves designed for visual level gauge isolation. All valves are forged steel and constructed to meet the rigorous demands of high pressure steam boiler service. The valves meet the requirements of the ASME Boiler and Pressure Vessel Code, Section 1.

DP5100 Valve

- 1 in. (25 mm) angled globe valve
- 0.75 in. (19 mm) flanged gauge connections
- Conval clampseal body construction
- Pressure seal threaded bonnet/yoke
- Rated Class 2155
- Outside screw and yoke (OS & Y) constructions
- SA-105 forged steel body and yoke, nickel plated
- Stellite seat and disc (free rotating)
- Pressure actuated fixed leak-tight backseat
- "T" handle or chainwheel operated
- Optional 0.5 in. (12.7 mm) SW vent/drain
- Integral packing gland wrench
- In-line repairable seat
- Optional ball check safety valves

DP5100 Valve

DP5200 Valve

DP5200 Valve

- 1 in. (25 mm) angled globe valve
- 0.75 in. (19 mm) flanged gauge connections
- Rated Class 1500
- Outside screw and yoke (OS & Y) construction
- SA-105 forged steel body and bonnet
- Bolted bonnet, SA-193 B7 bolts
- Stellite disc, free rotating
- Hardened SS seat with stellite overlay
- Handwheel or chainwheel operator
- Optional 0.75 in. (19 mm) SW vent/drain
- In-line repairable seat
- Optional ball check safety valves

DP5110 Valve

- 0.75 in. (19 mm) angled globe valve
- 0.75 in. (19 mm) pipe nipple gauge connections
- Rated 1500 psi (10 MPa) and 597F (314C)
- Outside screw and yoke (OS & Y) construction
- SA-350 LF2 forged steel body and bonnet
- Bolted bonnet, SA-193 B7 bolts
- Stainless steel stem and hardened seat
- Non-rotating stem
- Handwheel or chainlevel operator
- 0.5 in. (12.7 mm) NPT vent/drain standard
- In-line repairable seat
- Optional ball check safety valves

DP5110 Valve

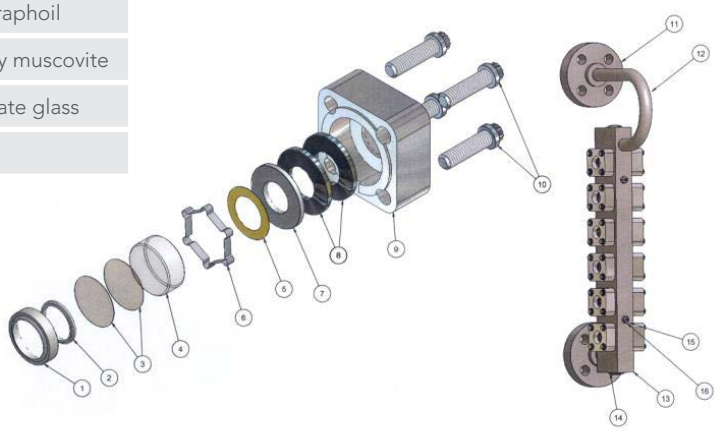
High Pressure Ported Boiler Level Gauge Repair Kits

B&W's Diamond Power® Series II ported boiler level gauge repair kit is configured to fit Diamond Power level gauge designs. All repair kits use high quality material and are rated for 3000 psi (21 MPa) saturated steam service.

Assembled Repair Kit

The repair kit consists of five (5) components as shown in the photo, table and illustration.

1	Glass Retainer	300 Series stainless steel
2	Sealing Gasket	Laminated and die formed Graphoil
3	Mica (2)	Premium V-1 quality clear ruby muscovite
4	Window	Precision ground aluminosilicate glass
5	Cushion Gasket	High temperature Graphoil



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Diamond Power® DP-3000 Gauge Replacement Parts

Many Diamond Power® DP-3000 water level gauges are still in operation today. With pressure capacity up to 3000 PSIG, its unique gasket and seal design minimizes potential leakage or glass breakage, particularly in higher pressure applications. No bolting load is applied on the glass. Sealing is accomplished directly between the coverplate and centerplate using a gasket material with proven success at higher pressure ranges. An additional gasket cushions the glass in the coverplate seat.

Babcock & Wilcox (B&W) provides a range of quality replacement parts to help keep your Diamond Power DP-3000 water level gauges in top operating condition.

Diamond Power® DP-3000 water level gauge

Valves

- Stuffing box valve
- Flanged valve
- Flanged rotatable valve

Port assemblies

- Glass/gasket set
- Glass/gasket set with laminated ring gasket

Illuminators and camera hoods

- Tungsten halogen illuminator assembly
- Camera hood assembly
- Direct reading hood assembly

Gasket kit with gauge glass — 1050 psi; Ruby mica – retorqueing required 24 hours after installation

Gasket kit with gauge glass — Ruby mica laminated ring – no torqueing required after installation

Gasket kit with gauge glass — Green mica laminated ring – used only with fiber optic viewer

Gasket kit with gauge glass — Ruby mica – retorqueing required 24 hours after installation

Clampseal valve – used in DP-3000 upper and lower valve assemblies

Note: cover plate and bolts are not included in these kits.

continued ▶

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