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Bulletin: AB10.1C
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Supersedes: AB10.1B

Clark·Reliance®

FIBERLEVEL™

BI-COLOR, DIRECT & REMOTE READING BOILER WATER LEVEL GAGE SYSTEM

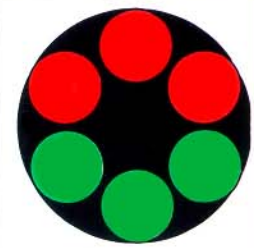
- **FEATURES MINIMAL MAINTENANCE PLUS EASY, VERSATILE INSTALLATION**
- **EXCELLENT ALTERNATIVE TO COMPLEX MIRROR OR ELECTRICAL (TV) MONITORING EQUIPMENT**
- **FIBER OPTIC CABLE PROVIDES RELIABLE, ACCURATE REMOTE LEVEL INDICATION**
- **FOR STEAM PRESSURES TO 3000 PSI AT 700°F.**
- **AVAILABLE IN 5- TO 10-PORT MODELS, WEATHERPROOF FOR EXTERIOR INSTALLATION**

The Clark-Reliance FIBERLEVEL level gage system operates as a dual bi-color gage viewing system which uses two separate indicating techniques. At the boiler, direct (right angle) readings are indicated by a Clark-Reliance Simpliport® gage. A fiber optic cable then transmits the Simpliport indication to a remote location. There the reading is displayed on a panel-mounted fiber optic viewer. At both locations, steam is indicated by red color and water is indicated by green color.

Transmission of level readings with a fiber optic cable results in unusually simple and highly reliable remote equipment. The fiber optic components are totally passive with no outside power source employer. Nor are any electrical or moving mechanical parts involved.

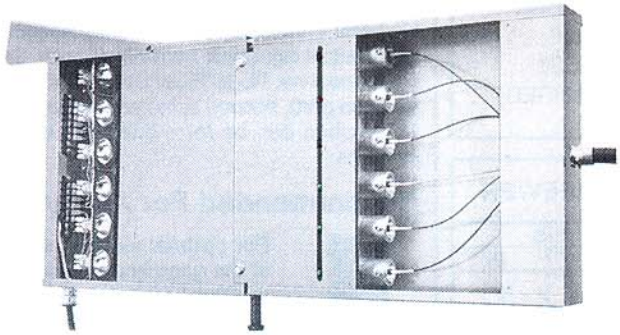
As a result, once the fiber optic system is placed in operation, its performance is free of downtime unless components are physically damaged.

FIBERLEVEL is available in six model sizes with a maximum standard visibility of 22⅛ with additional visibility possible upon request. Fiber optic cable can span a maximum of 1000 feet. The fiber optic components can be field-installed on Simpliports now in service.



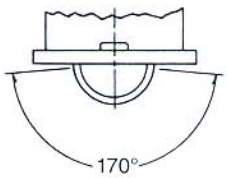
LIGHTWEIGHT CABLE IS FLEXIBLE AND EASY TO INSTALL.

Figure 2



DIRECT, RIGHT ANGLE LEVEL INDICATION AT BOILER DRUM

REMOTE LEVEL INDICATION AT CONTROL PANEL, TRANSMITTED BY FIBER OPTIC CABLE



NOTE: VIEWING CYLINDER MAY BE ROTATED TO ALLOW OBSERVATION OF LEVEL FROM ANY POINT WITHIN 170° ARC.

Figure 1

Easy-To-View Direct And Remote Readouts. Red Is Steam, Green Is Water.

Part of the FIBERLEVEL system is the Clark-Reliance Simpliport gage operating on the fundamental principle of light refraction. Light does not refract through water on the same line that light refracts through steam. Using precisely calculated placement of light source, colored glass filters and gage glass, Simpliport indicates red opposite boiler steam and green opposite boiler water. Fiber optic strands with special lenses, focused on Simpliport's colors, transmit these colors to a remote location and produce a duplicate readout.

LIGHT/COLOR PASSAGE THROUGH FIBERLEVEL SYSTEM

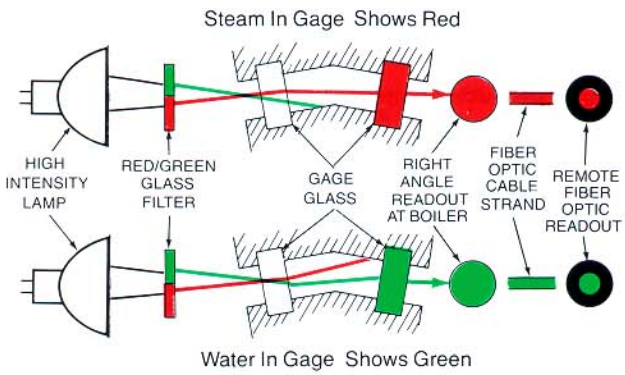


Figure 3

FIBERLEVEL COMPONENT SPECIFICATIONS

TYPICAL CLARK-RELIANCE FIBERLEVEL WATER COLUMN INSTALLATION

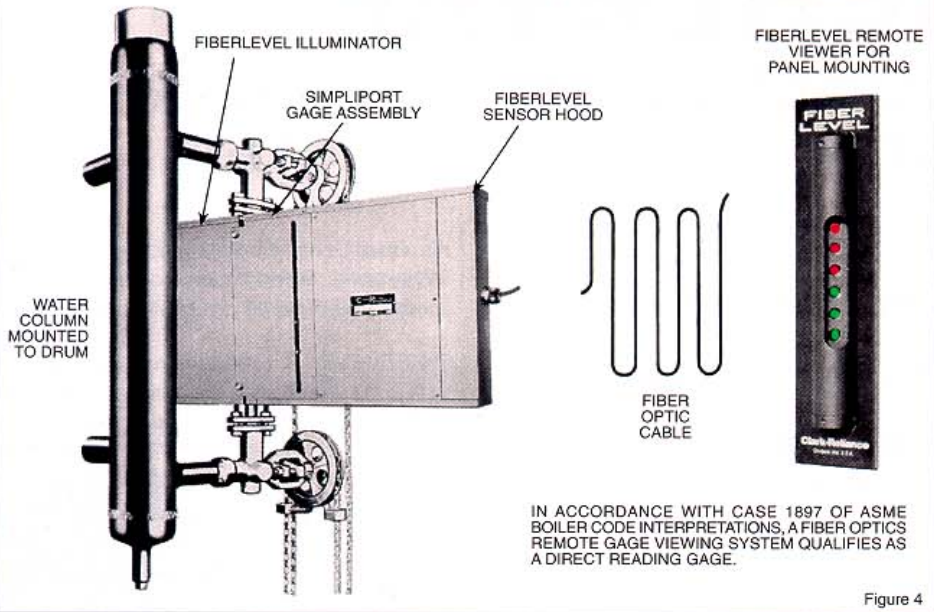


Figure 4

FIBERLEVEL ILLUMINATOR

MODEL NO.	DIMENSIONS		
	H	W	L
PFIW-5	12 1/2"	3 3/8"	18 3/4"
PFIW-6	14 7/8"	3 3/8"	18 3/4"
PFIW-7	17 1/4"	3 3/8"	18 3/4"
PFIW-8	19 5/8"	3 3/8"	18 3/4"
PFIW-9	22"	3 3/8"	18 3/4"
PFIW-10	24 3/8"	3 3/8"	18 3/4"

FIBER OPTIC CABLE

CABLE NO.	LENGTH
CABLE-5	USER TO SPECIFY THE NUMBER OF FEET REQUIRED
CABLE-6	
CABLE-7	
CABLE-8	
CABLE-9	
CABLE-10	

FIBERLEVEL SENSOR HOOD

MODEL NO.	DIMENSIONS		
	H	W	L
PFLS-5	12 1/2"	3 11/16"	19 3/8"
PFLS-6	14 7/8"	3 11/16"	19 3/8"
PFLS-7	17 1/4"	3 11/16"	19 3/8"
PFLS-8	19 5/8"	3 11/16"	19 3/8"
PFLS-9	22"	3 11/16"	19 3/8"
PFLS-10	24 3/8"	3 11/16"	19 3/8"

FIBERLEVEL REMOTE VIEWER

MODEL NO.	DIMENSIONS		
	H	W	D
PFLV-5A	11 3/4"	3"	5"
PFLV-6A	11 3/4"	3"	5"
PFLV-7A	11 3/4"	3"	5"
PFLV-8A	11 3/4"	3"	5"
PFLV-9A	11 3/4"	3"	5"
PFLV-10A	11 3/4"	3"	5"

Model number suffix shown indicates number of ports in Simpliport Gage.
For Simpliport Gages with more than 10 ports, multiple illuminators and hoods are employed. Consult factory for details.

Fiber Optic Cable Allows Easy Remote Viewer Installation

Containing individual fiber strands, one per gage port, cable may be installed in present cable trays, conduits or ducts. Cable may also be installed "as is" on flat walls and ceilings. Install indoors or out-doors. Though cable is specially sheathed within a nylon cover, it remains flexible and permits a 12" minimum bending radius. Temperatures may range between -4°F to +203°F. Light signals inside the cable are not influenced by electromagnetic interference.

Figure 5

Remote Viewer Adapts To Panel Or Wall Mounting

Ideal viewing of the fiber optic remote viewer is from the direct front at eye height. For panel mounting, a small 2 5/8" by 10 1/8" cutout will contain the compact and attractive viewer. Optimum readout intensity is aided by recessed ports that diminish the effect of ambient light sources. The viewer features fixed-focus connections to minimize the need for viewer dismantling once installed.

The FIBERLEVEL System can drive two remote viewers. This is accomplished by splitting the gage output signal into two fiber strands. Specify component no. FL-10 Fiber Strand splitters (one for each port), second cable and remote viewer. This option can be retro fitted to all existing systems.

Recommended For All Systems

Figure 6

For optimal viewing accuracy of the gage image, we suggest a Fiber Level Adjustment Kit (Part No. FL-AK). This kit consists of a 10 foot - 3 strand fiber optic cable and a viewing module. The kit enables a technician to optimize the fiber input signal at the gage location, for optimum signal transmission to the remote viewer.

REFER TO CLARK-RELIANCE CATALOG SECTION AB7.5A FOR SIMPLIPORT DESIGN, CONSTRUCTION, PERFORMANCE, AND INSTALLATION DETAILS.

FOR ADDITIONAL INFORMATION,
CONTACT YOUR LOCAL CLARK-RELIANCE REPRESENTATIVE

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