

# APPROVAL REPORT

**Project No:** 0003050918  
**Supplements Project No.:** 3048682  
**Class:** 7710  
**Product Name:** Eye-Hye SmartLevel  
**Product Type:** Low Water Level Limit Control  
**Name of Listing Company:** Clark-Reliance Corp (The)  
**Address of Listing Company:** 16633 Foltz Pkwy  
Strongsville OH 44149  
United States  
**Customer ID:** 1000001983-1  
**Customer website** www.clarkreliance.com

**Prepared by**



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Robert P Deardorff  
Associate Engineer

**Reviewed by**



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David Waite  
Technical Team Manager



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James E. Marquedant  
Group Manager

**6 November 2013**

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**Date of Approval**

## 1 INTRODUCTION

1.1 Clark-Reliance Corp (The) requested Approval of the apparatus listed in Section 1.4 for compliance with the standards listed in Section 1.3.as suitable for the listing categories described in Section 1.4.

1.2 This report may be freely reproduced only in its entirety and without modification.

### 1.3 Standards

Title	Number	Issue Date
Low Water Level Limit Controls for Boilers	7710	2003

### 1.4 Listing

The product will be updated in the Approval Guide, an on-line resource of FM Approvals, as follows with all changes highlighted, deletions shown with strikethroughs and additions in red text:

☒Fuel & Combustion Controls ☒Boiler Water-Level Controls

## **RSCABCDEF##GHJK**

- A = ~~1~~ — Standard ~~16x20~~ NEMA 4, IP65 Standard Enclosure\*
- 2 — Standard ~~16x20~~ NEMA 4X SS Enclosure\*
- 3 — Standard ~~16x20~~ NEMA 4X SS Enclosure with Window\*
- 4 — Standard ~~16x20~~ NEMA 7/4X Explosion Proof Enclosure\*
- 5 — ~~24x20~~ NEMA 4 Enclosure\*
- 6 — ~~24x20~~ NEMA 4X SS Enclosure\*
- 7 — ~~24x20~~ NEMA 4X SS Enclosure with Window\*
- 8 — ~~24x20~~ NEMA 7/4X Explosion Proof Enclosure\*
- B = ~~1~~ — Single Universal AC Power Supply
- 2 — Dual Universal AC Power Supplies
- C = ~~0~~ — No ~~6~~ Channel Relays
- 1 — One ~~6~~ Channel Relay
- 2 — Two ~~6~~ Channel Relays
- D = ~~0~~ — No ~~4~~ 20 mA Transmitter \*\*
- 1 — One ~~4~~ 20 mA Transmitter \*\*
- E = ~~0~~ — No Medium LED Indicator
- 1 — One Medium LED Indicator
- 2 — Two Medium LED Indicators
- 3 — One Medium LED Indicator in NEMA 4 Enclosure\*
- 4 — One Medium LED Indicator in NEMA 4X Enclosure\*
- F = ~~0~~ — No Small LED Indicator
- 1 — One Small LED Indicator
- 2 — Two Small LED Indicators

~~3 – One Small LED Indicator in NEMA 4 Enclosure\*~~

~~4 – One Small LED Indicator in NEMA 4X Enclosure\*~~

~~## – 01-24 – Number of Probes/Modules~~

~~G – (Not used at this time)~~

~~H – (Not used at this time)~~

~~J – (Not used at this time)~~

~~K – (Not used at this time)~~

## **RSC##ABCDEFGH**

**## = 06-24 – Number of Probes/Modules**

**\*\*\*A = 1 – 16x20 NEMA 4, IP65 Steel Enclosure**

**2 – 16x20 NEMA 4X SS Enclosure**

**3 – 16x20 NEMA 4X SS Enclosure with Window**

**4 – 16x20 NEMA 4 Steel Enclosure with Indicator View**

**5 – 16x20 NEMA 4X SS Enclosure with Indicator View**

**\*6 – 24x20 NEMA 4, IP65 Steel Enclosure**

**\*7 – 24x20 NEMA 4X SS Enclosure**

**\*8 – 24x20 NEMA 4X SS Enclosure with Window**

**\*9 – 24x20 NEMA 4 Steel Enclosure with Indicator View**

**\*10 – 24x20 NEMA 4X SS Enclosure with Indicator View**

**11 – 16x20 NEMA 7/4X Explosion-Proof Enclosure**

**\*12 – 24x20 NEMA 7/4X Explosion-Proof Enclosure**

*\*Only for systems that require an expansion board*

*\*\*Systems with more than 12 channels come standard with an expansion board*

**B = 1 – Single Universal AC Power Supply**

**2 – Dual Universal AC Power Supply**

**3 – Single Universal AC Power Supply w/CE Kit**

**4 – Dual Universal AC Power Supply w/CE Kit**

**5 – Single DC Power Supply**

**6 – Dual DC Power Supply**

**C = \*0 – No Additional Modules**

**1 – One Additional 6 Channel Relay**

**2 – One 4-20mA Output**

**\*\*3 – Two Additional 6 Channel Relays**

**\*\*4 – Three Additional 6 Channel Relays**

**\*\*5 – One 4-20mA Output and One Additional 6 Channel Relay**

**\*\*6 – One 4-20mA Output and Two Additional 6 Channel Relays**

**\*\*7 – One 4-20mA Output and Three Additional 6 Channel Relays**

*\*All control units come standard with one 6 Channel Relay*

*\*\*Options 3 thru 7 require expansion board*

**D = (Not used at this time)**

**E = (Not used at this time)**

**F = (Not used at this time)**

- \*\*\*G = 0 – No Medium LED Indicator
  - 1 – One Medium LED Indicator
  - 2 – Two Medium LED Indicators
  - 3 – One Medium LED Indicator in NEMA 4 Enclosure
  - 4 – One Medium LED Indicator in NEMA 4X Enclosure
- \*\*\*H = 0 – No Small LED Indicator
  - 1 – One Small LED Indicator
  - 2 – Two Small LED Indicators
  - 3 – One Small LED Indicator in NEMA 4 Enclosure
  - 4 – One Small LED Indicator in NEMA 4X Enclosure
- J = 0 – None
- S – Special - Defined On Order

\*\*\* NEMA, IP and Explosionproof enclosures not tested by FM Approvals for these ratings

## 2 DESCRIPTION

The 4-20mA transmitter module is an isolated 4-20mA transmitter that is available on the 5 position terminal block and a water over steam error detector is available on an isolated form C relay output. The transmitter section also includes an internal selectable isolated 24VDC loop excitation supply, allowing the transmitter to source current from an external loop supply.

## 3 EXAMINATIONS AND TESTS

### 3.1 Examination

Samples were submitted for examination and testing. The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

All testing and analysis considered appropriate was conducted and verified to be in compliance with the Standards defined in Section 1.3.

## 4 MARKING

- 4.1 Product shall be provided with caution and warning labels.

## 5 REMARKS

- 5.1 Extreme care should be taken with the installation of this equipment. The latest edition of the manufacturer's instruction manual must be followed completely, and any problems should be resolved by consultation with the factory or the authorized representative.
- 5.2 All installation wiring shall be in accordance with the appropriate national electrical code.
- 5.3 An Approval examination of equipment such as this can only evaluate typical configurations. Although those components identified in this report have been tested, it is beyond the scope of such an examination to test all possible configurations. It is therefore necessary, that those responsible for the setup and acceptance of specific

installations take special care to verify that the equipment, including programmable functions, is configured to operate properly for the required performance of that installation.

- 5.4 Tampering and replacement with non-factory components may adversely affect the safe use of the system.

## 6 SURVEILLANCE AUDIT

The design and manufacturing facilities at the following location(s) shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture product identical to that tested and Approved. A Form 797 shall be submitted to FM Approvals for requesting to manufacture product at any additional or alternate manufacturing facilities which are not listed below.

### **Design**

Clark-Reliance Corp (The)  
16633 Foltz Pkwy  
Strongsville OH 44149  
United States

### **Manufacturing**

Clark-Reliance Corp (The)  
16633 Foltz Pkwy  
Strongsville OH 44149  
United States

## 7 MANUFACTURER'S RESPONSIBILITIES

- 7.1 Documentation that is applicable to this approval is on file at FM Approvals and listed in the Documentation File, Section 8, of this report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The Approved Product - Revision Report, FM Approvals Form 797, shall be forwarded to FM Approvals as notice of proposed changes.

- 7.2 The Manufacturer is responsible for control of the product marking and installation instructions for the System.

- 7.3 The manufacturer shall provide installation, operating, and maintenance manual[s] with each system.

## 8 DOCUMENTATION

See attached blueprint report.

## 9 CONCLUSION

The apparatus described in section 1.4 meets FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, US and Canadian Approval is effective the date of this report.

**PROJECT DATA RECORD:** 0003050918

**ATTACHMENTS:** Blueprint Report 3048682

# Blueprint Report

**Clark-Reliance Corp (1000001983)**

**Class No 7710**

**Original Project I.D. 3048682**

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
E-PS-150W12VDC0		Power Supply, Switching	3048682	Yes (pdf)
ES-SLC24-B	3	Schematic, Small Indicator LED Assy	3050918	Yes (pdf)
ES-SLC26-B	3	Schematic, Probe Module PCB Assy	3050918	Yes (pdf)
ES-SLC28-B	5	Schematic, Universal AC Power Supply Assy	3050918	Yes (pdf)
ES-SLC30-B	2	Schematic, 12 Channel Motherboard PCB Assy	3050918	Yes (pdf)
ES-SLC32-B	2	Schematic, LED Display Controller PCB Assy	3050918	Yes (pdf)
ES-SLC38-B	2	Schematic, 4-20 PCB Assy	3050918	Yes (pdf)
ES-SLC41-B	1	Schematic, 6 Channel Relay PCB Assy 1	3050918	Yes (pdf)
ES-SLI11-B	2	Schematic, 24 Channel Expansion PCB 1	3050918	Yes (pdf)
ES-SLI6-B	2	Schematic, Medium LED Indicator Assy	3050918	Yes (pdf)
ES-SLI8-B	2	Schematic, Small Indicator Micro Assy	3050918	Yes (pdf)
ESC1-B	2	Control Unit Assy, Part Numbering	3050918	Yes (pdf)
PC-SLC24-B	3	PCB Fabrication & Assy Probe Module	3050918	Yes (pdf)
PC-SLC26-B	3	PCB Fabrication & Assy AC Power	3050918	Yes (pdf)
PC-SLC28-B	5	PCB Fabrication & Assy 12 Channel Motherboard	3050918	Yes (pdf)
PC-SLC30-B	2	PCB Fabrication & Assy LED Display Controller	3050918	Yes (pdf)
PC-SLC32-B	2	PCB Fabrication & Assy 6 Channel Relay	3050918	Yes (pdf)
PC-SLC38-B	2	Fabrication Assy, 4-20 transmitter	3050918	Yes (pdf)
PC-SLC41-B	1	PCB Fabrication & Assy 24 Channel Expansion	3050918	Yes (pdf)
PC-SLI11-B	2	PCB Fabrication & Assy Small Indicator LED	3050918	Yes (pdf)
PC-SLI6-B	2	PCB Fabrication & Assy Large LED Indicator	3050918	Yes (pdf)
PC-SLI8-B	2	PCB Fabrication & Assy Small Indicator Micro	3050918	Yes (pdf)
R500.E249	9/13/2013	Eye-Hye Smartlevel Installation, Operation & Instruction Manual	3050918	Yes (pdf)
SLC23-A	2	Probe Module Assy	3050918	Yes (pdf)
SLC25-A	3	Power Supply Assy	3050918	Yes (pdf)
SLC29-A	1	LED Display Controller Assy	3050918	Yes (pdf)
SLC31-A	1	6 Channel Relay Assy	3050918	Yes (pdf)
SLC37-A	1	4-20mA output Assy	3050918	Yes (pdf)
SLC46-A	2	Label, Rating	3050918	Yes (pdf)
SLI5-A	2	Medium Indicator Assy	3050918	Yes (pdf)
SLI7-A	2	12 Channel Small Indicator Assy	3050918	Yes (pdf)