

**PRESSURE** 

ExplosionProof
Differential
Pressure
Transmitter

# Tek-Bar 3110A





### **FEATURES**

- Operator can calibrate device using zero/span button, no handheld calibrator required
- High accuracy up to ±0.075%
- Various Output: 4-20 mA, digital signals
- EEPROM write protection
- Fail-safe mode process function for detecting any abnormal condition occurring
- The mounting bracket can be rotated up to 360° and LCD display up to 270°
- Automatic ambient temperature compensation improve performance of device



## **APPLICATIONS**

- Distilleries
- Water and waste water industries
- Oil and Gas
- Pharmaceutical
- Dairy industries

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## SPECIFICATION

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| Rangeability  Rangeability  Maximum working pressure limit  Process temperature limits  40 °F to +248 °F  Stability  5 Years  Ambient temperature effect  40 °F to +185 °F  Humidity limits  5% to 100% RH  Power supply effects  Display (optional)  Damping time  Fail High: Current ≥21.1 mA  Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  Output signal  Isolation  Frocess connection size  Electrical connections  2" Pipe stanchion type bracket  Approvals  Bolts and bolting flange  Pouring  Isolation  Activate  Angle or flat type  Angle or flat type  Paint  Epoxy-Polyester or Polyuret  Fill fluid  Oring  Viton, PTFE  Isolating diaphragm  316SST   |                                 | .0.0750/_6                                   |
|---|---------------------------------|--|
| Maximum working pressure limit       2000 PSI         Process temperature limits       -40 °F to +248 °F         Stability       5 Years         Ambient temperature effect       ±[0.019%URL+0.125% Span] / 82.4 °F         Ambient temperature       -40 °F to +185 °F         Humidity limits       59% to 100% RH         Power supply effects       ±0.005% of Span per Volt         Mounting position effects       Zero Shift up to 350Pa no span effect         Display (optional)       5 digit LCD display         Damping time       0.25 to 60 sec         Fail High: Current ≥21.1 mA       Fail Low: Current ≤3.78 mA         Power supply       12 to 45 VDC         Weight (excluding option items)       8.589 lb (Standard), 11.882 lb (SST Housing)         Output signal       4 mA to 20 mA or HART*         Isolation       500 Vrms (707 VDC)         HART loop resistance       250 to 550 ohm         Process connection size       ½" NPT female         Electrical connections       ½" NPT female         2" Pipe stanchion type bracket       Angle or flat type         Approvals       FM (Class I Div I)         Bolts and bolting flange       304SST         Electronic housing       Aluminum (Option:316LSST)         Mounting bracket       30   | Accuracy                        | ±0.075% of span                              |
| Process temperature limits  -40 °F to +248 °F  Stability  5 Years  Ambient temperature effect  ±[0.019%URL+0.125% Span] / 82.4 °F  Ambient temperature  -40 °F to +185 °F  Humidity limits  5% to 100% RH  Power supply effects  ±0.005% of Span per Volt  Mounting position effects  Display (optional)  Damping time  -40 °F to +185 °F  #0.005% of Span per Volt  #0.005% of Span per Volt |                                 | 100:1 turn down                              |
| Stability  Ambient temperature effect  Ambient temperature  -40 °F to +185 °F  Humidity limits  5% to 100% RH  Power supply effects  ±0.005% of Span per Volt  Mounting position effects  Display (optional)  Damping time  -40 °F to +185 °F  Earl Humidity limits  5 % to 100% RH  Power supply effects  Earl Shift up to 350Pa no span effect  Display (optional)  Damping time  0.25 to 60 sec  Fail High: Current ≥21.1 mA Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  Substance  Food of Span per Volt  Am Hart is a span effect  Fail High: Current ≥21.1 mA Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  Substance  4 mA to 20 mA or HART®  Isolation  500 Vrms (707 VDC)  HART loop resistance  250 to 550 ohm  Process connection size  4" NPT female  Electrical connections  2" NPT female  2" Pipe stanchion type bracket  Angle or flat type  Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  Silicone oil or inert fill  O-ring  Viton, PTFE   | Maximum working pressure limit  | 2000 PSI                                     |
| Ambient temperature effect  Ambient temperature  -40 °F to +185 °F  Humidity limits  5% to 100% RH  Power supply effects  ±0.005% of Span per Volt  Mounting position effects  Display (optional)  Damping time  -25 to 60 sec  Fail High: Current ≥21.1 mA Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  Output signal  Isolation  HART loop resistance  Process connection size  Electrical connections  2" Pipe stanchion type bracket  Approvals  Bolts and bolting flange  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE  | Process temperature limits      | -40 °F to +248 °F                            |
| Ambient temperature       -40 °F to +185 °F         Humidity limits       5% to 100% RH         Power supply effects       ±0.005% of Span per Volt         Mounting position effects       Zero Shift up to 350Pa no span effect         Display (optional)       5 digit LCD display         Damping time       0.25 to 60 sec         Faillure mode       Fail High: Current ≥21.1 mA         Fail Low: Current ≤3.78 mA       Fail Low: Current ≤3.78 mA         Power supply       12 to 45 VDC         Weight (excluding option items)       8.589 lb (Standard), 11.882 lb (SST Housing)         Output signal       4 mA to 20 mA or HART®         Isolation       500 Vrms (707 VDC)         HART loop resistance       250 to 550 ohm         Process connection size       ¼" NPT female         Electrical connections       ½" NPT female         2" Pipe stanchion type bracket       Angle or flat type         Approvals       FM (Class I Div I)         Bolts and bolting flange       304SST         Electronic housing       Aluminum (Option:316LSST)         Mounting bracket       304SST with U-bolt (304SST) for 2" pipe         Paint       Epoxy-Polyester or Polyuret         Fill fluid       Silicone oil or inert fill         O-ring       Viton, P   | Stability                       | 5 Years                                      |
| Humidity limits  Power supply effects  ±0.005% of Span per Volt  Mounting position effects  Display (optional)  Damping time  0.25 to 60 sec  Fail High: Current ≥21.1 mA Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  Output signal  Isolation  HART loop resistance  Process connection size  Electrical connections  2" Pipe stanchion type bracket  Approvals  Bolts and bolting flange  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE  | Ambient temperature effect      | ±[0.019%URL+0.125% Span] / 82.4 °F           |
| Power supply effects       ±0.005% of Span per Volt         Mounting position effects       Zero Shift up to 350Pa no span effect         Display (optional)       5 digit LCD display         Damping time       0.25 to 60 sec         Fail High: Current ≥21.1 mA       Fail High: Current ≤3.78 mA         Power supply       12 to 45 VDC         Weight (excluding option items)       8.589 lb (Standard), 11.882 lb (SST Housing)         Output signal       4 mA to 20 mA or HART®         Isolation       500 Vrms (707 VDC)         HART loop resistance       250 to 550 ohm         Process connection size       ½" NPT female         Electrical connections       ½" NPT female         2" Pipe stanchion type bracket       Angle or flat type         Approvals       FM (Class I Div I)         Bolts and bolting flange       304SST         Electronic housing       Aluminum (Option:316LSST)         Mounting bracket       304SST with U-bolt (304SST) for 2" pipe         Paint       Epoxy-Polyester or Polyuret         Fill fluid       Silicone oil or inert fill         O-ring       Viton, PTFE  | Ambient temperature             | -40 °F to +185 °F                            |
| Mounting position effects       Zero Shift up to 350Pa no span effect         Display (optional)       5 digit LCD display         Damping time       0.25 to 60 sec         Fail High: Current ≥21.1 mA         Fail Low: Current ≤3.78 mA         Power supply       12 to 45 VDC         Weight (excluding option items)       8.589 lb (Standard), 11.882 lb (SST Housing)         Output signal       4 mA to 20 mA or HART®         Isolation       500 Vrms (707 VDC)         HART loop resistance       250 to 550 ohm         Process connection size       ½" NPT female         Electrical connections       ½" NPT female         2" Pipe stanchion type bracket       Angle or flat type         Approvals       FM (Class I Div I)         Bolts and bolting flange       304SST         Electronic housing       Aluminum (Option:316LSST)         Mounting bracket       304SST with U-bolt (304SST) for 2" pipe         Paint       Epoxy-Polyester or Polyuret         Fill fluid       Silicone oil or inert fill         O-ring       Viton, PTFE   | Humidity limits                 | 5% to 100% RH                                |
| Display (optional)       5 digit LCD display         Damping time       0.25 to 60 sec         Fail High: Current ≥21.1 mA         Fail Low: Current ≤3.78 mA         Power supply       12 to 45 VDC         Weight (excluding option items)       8.589 lb (Standard), 11.882 lb (SST Housing)         Output signal       4 mA to 20 mA or HART®         Isolation       500 Vrms (707 VDC)         HART loop resistance       250 to 550 ohm         Process connection size       ½" NPT female         Electrical connections       ½" NPT female         2" Pipe stanchion type bracket       Angle or flat type         Approvals       FM (Class I Div I)         Bolts and bolting flange       304SST         Electronic housing       Aluminum (Option:316LSST)         Mounting bracket       304SST with U-bolt (304SST) for 2" pipe         Paint       Epoxy-Polyester or Polyuret         Fill fluid       Silicone oil or inert fill         O-ring       Viton, PTFE   | Power supply effects            | ±0.005% of Span per Volt                     |
| Damping time0.25 to 60 secFailure modeFail High: Current ≥21.1 mA<br>Fail Low: Current ≤3.78 mAPower supply12 to 45 VDCWeight (excluding option items)8.589 lb (Standard), 11.882 lb (SST Housing)Output signal4 mA to 20 mA or HART®Isolation500 Vrms (707 VDC)HART loop resistance250 to 550 ohmProcess connection size¼" NPT femaleElectrical connections½" NPT female2" Pipe stanchion type bracketAngle or flat typeApprovalsFM (Class I Div I)Bolts and bolting flange304SSTElectronic housingAluminum (Option:316LSST)Mounting bracket304SST with U-bolt (304SST) for 2" pipePaintEpoxy-Polyester or PolyuretFill fluidSilicone oil or inert fillO-ringViton, PTFE   | Mounting position effects       | Zero Shift up to 350Pa no span effect        |
| Fail High: Current ≥21.1 mA Fail Low: Current ≤3.78 mA  Power supply 12 to 45 VDC  Weight (excluding option items) 8.589 lb (Standard), 11.882 lb (SST Housing)  Output signal 4 mA to 20 mA or HART®  Isolation 500 Vrms (707 VDC) HART loop resistance 250 to 550 ohm Process connection size ½" NPT female  Electrical connections 2" Pipe stanchion type bracket Approvals FM (Class I Div I)  Bolts and bolting flange 304SST Electronic housing Aluminum (Option:316LSST)  Mounting bracket Fill fluid Silicone oil or inert fill O-ring Viton, PTFE  | Display (optional)              | 5 digit LCD display                          |
| Fail Low: Current ≤3.78 mA  Power supply  12 to 45 VDC  Weight (excluding option items)  8.589 lb (Standard), 11.882 lb (SST Housing)  Output signal  4 mA to 20 mA or HART®  Isolation  500 Vrms (707 VDC)  HART loop resistance  250 to 550 ohm  Process connection size  1/4" NPT female  Electrical connections  2" NPT female  2" Pipe stanchion type bracket  Angle or flat type  Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE  | Damping time                    | 0.25 to 60 sec                               |
| Power supply  12 to 45 VDC  Weight (excluding option items)  8.589 lb (Standard), 11.882 lb (SST Housing)  Output signal  4 mA to 20 mA or HART®  Isolation  500 Vrms (707 VDC)  HART loop resistance  250 to 550 ohm  Process connection size  ½" NPT female  Electrical connections  2" Pipe stanchion type bracket  Angle or flat type  Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE   | Failure mode                    | Fail High: Current ≥21.1 mA                  |
| Weight (excluding option items)  8.589 lb (Standard), 11.882 lb (SST Housing)  Output signal  4 mA to 20 mA or HART®  Isolation  500 Vrms (707 VDC)  HART loop resistance  250 to 550 ohm  Process connection size  1/4" NPT female  Electrical connections  2" Pipe stanchion type bracket  Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE   |                                 | Fail Low: Current ≤3.78 mA                   |
| Output signal  Isolation  Soo Vrms (707 VDC)  HART loop resistance  Process connection size  I'4" NPT female  Electrical connections  I'2" NPT female  Provals  FM (Class I Div I)  Bolts and bolting flange  Electronic housing  Mounting bracket  Aluminum (Option:316LSST)  Mounting bracket  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE   | Power supply                    | 12 to 45 VDC                                 |
| Isolation   500 Vrms (707 VDC)     HART loop resistance   250 to 550 ohm     Process connection size   ¼" NPT female     Electrical connections   ½" NPT female     2" Pipe stanchion type bracket   Angle or flat type     Approvals   FM (Class I Div I)     Bolts and bolting flange   304SST     Electronic housing   Aluminum (Option:316LSST)     Mounting bracket   304SST with U-bolt (304SST) for 2" pipe     Paint   Epoxy-Polyester or Polyuret     Fill fluid   Silicone oil or inert fill     O-ring   Viton, PTFE   | Weight (excluding option items) | 8.589 lb (Standard), 11.882 lb (SST Housing) |
| HART loop resistance Process connection size  Electrical connections 2" NPT female 2" Pipe stanchion type bracket Approvals FM (Class I Div I)  Bolts and bolting flange Electronic housing Aluminum (Option:316LSST)  Mounting bracket 304SST with U-bolt (304SST) for 2" pipe Paint Epoxy-Polyester or Polyuret  Fill fluid O-ring Viton, PTFE  | Output signal                   | 4 mA to 20 mA or HART®                       |
| Process connection size  #" NPT female  Electrical connections  2" Pipe stanchion type bracket  Approvals  FM (Class I Div I)  Bolts and bolting flange  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE   | Isolation                       | 500 Vrms (707 VDC)                           |
| Electrical connections  2" Pipe stanchion type bracket  Approvals  FM (Class I Div I)  Bolts and bolting flange  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  Paint  Epoxy-Polyester or Polyuret  Fill fluid  O-ring  Viton, PTFE   | HART loop resistance            | 250 to 550 ohm                               |
| 2" Pipe stanchion type bracket  Angle or flat type  Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  Silicone oil or inert fill  O-ring  Viton, PTFE  | Process connection size         | 1/4" NPT female                              |
| Approvals  FM (Class I Div I)  Bolts and bolting flange  304SST  Electronic housing  Aluminum (Option:316LSST)  Mounting bracket  304SST with U-bolt (304SST) for 2" pipe  Paint  Epoxy-Polyester or Polyuret  Fill fluid  Silicone oil or inert fill  O-ring  Viton, PTFE  | Electrical connections          | ½" NPT female                                |
| Bolts and bolting flange 304SST  Electronic housing Aluminum (Option:316LSST)  Mounting bracket 304SST with U-bolt (304SST) for 2" pipe  Paint Epoxy-Polyester or Polyuret  Fill fluid Silicone oil or inert fill  O-ring Viton, PTFE   | 2" Pipe stanchion type bracket  | Angle or flat type                           |
| Electronic housing Aluminum (Option:316LSST) Mounting bracket 304SST with U-bolt (304SST) for 2" pipe Paint Epoxy-Polyester or Polyuret Fill fluid Silicone oil or inert fill O-ring Viton, PTFE  | Approvals                       | FM (Class I Div I)                           |
| Mounting bracket  304SST with U-bolt (304SST) for 2" pipe Paint  Epoxy-Polyester or Polyuret  Fill fluid  Silicone oil or inert fill  O-ring  Viton, PTFE   | Bolts and bolting flange        | 304SST                                       |
| Paint Epoxy-Polyester or Polyuret  Fill fluid Silicone oil or inert fill  O-ring Viton, PTFE  | Electronic housing              | Aluminum (Option:316LSST)                    |
| Fill fluid Silicone oil or inert fill O-ring Viton, PTFE  | Mounting bracket                | 304SST with U-bolt (304SST) for 2" pipe      |
| O-ring Viton, PTFE  | Paint                           | Epoxy-Polyester or Polyuret                  |
| 3   | Fill fluid                      | Silicone oil or inert fill                   |
| Isolating diaphragm 316SST  | O-ring                          | Viton, PTFE                                  |
|   | Isolating diaphragm             | 316SST                                       |