

# hmi

high-accuracy  
measurement  
instruments

FICHA TÉCNICA DE PRODUTO

PRODUCT DATASHEET

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**HMI – Automação e Instrumentação, Lda.**

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Travessa da Indústria, nº 111  
4780-573 Santo Tirso  
PORTUGAL

Tel. +351 252 850 501  
Fax. +351 300 013 487

Web: [www.hmi.pt](http://www.hmi.pt)

Email: [hmi@hmi.pt](mailto:hmi@hmi.pt)

# KCAP400

## RF Capacitance Level Switch

With dual set point and pump control

K-TEK Level products



### Features

- Liquids and Bulk Solids
- Integral and Remote Electronics Available
- Easy Set Up Via External Magnet or Pushbuttons
- Housing with Glass Viewing Cover
- Wide Variety of 2-Element Sensing Probes Available (450°F / 3000 psig)
- Field Selectable Modes of Operation:
  - Single Set Point (Horizontal or Vertical Installations)
  - Dual Set Point (Vertical Installations Only)
  - Pump Control (Vertical Installations Only)
- Element Sensitivity Down to 1.5 pF

### Options

- 316L SS enclosure
- External "Alarm" Indicating Lamp
- Custom Insertion Lengths to 1800 in / 45720 mm
- Industry Standard Bulk Solids Mounting Plate
- Process Connections: 3/4"NPT, 1 1/4"NPT, 1 1/2"NPT and Custom Flanges

### Applications


#### Bulk Solids Applications

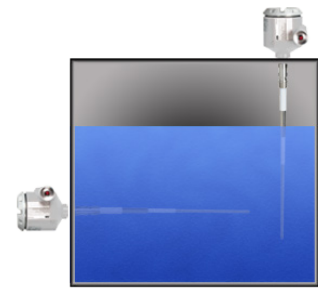
- High or Low Level Alarm
- Plugged Chute Detection
- Fly Ash Hopper Level
- Pellets, Granules, Powders
- Chips & Flakes

#### Liquid Applications

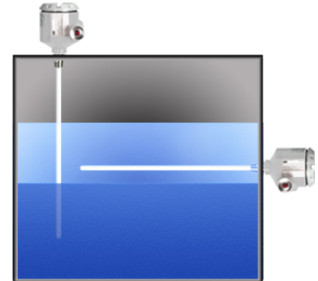
- High or Low Level Alarm
- Interface
- Slurries
- Flow / No Flow
- Conductive Products
- Non-Conductive Products
- Organic
- Inorganic

# SPECIFICATIONS

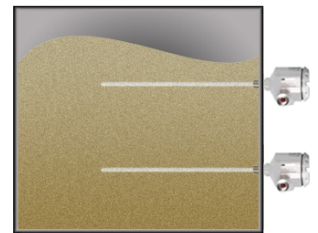
Environmental	
Housing Type	Explosion Proof, Powder Coated Cast Aluminum Standard
Electronics Temperature	-40° to 158°F / -40° to 70°C
Process Temperature	450°F (232°C) Maximum
Process Pressure	3000 psig (207 bar) Maximum
Remote Mounting	Max. length of 200 ft. from sensing probe to the remote electronics
Approvals	 Factory Mutual Research Corp. Explosion Proof with Intrinsically Safe Sensor
Electrical	
Input Power	95-130 VAC, 50-60Hz, 2 Watts; 180-260 VAC, 50-60Hz; 24 VDC +/- 5%
Relay Contact Rating	2x SPDT Resistive: 8 Amp, 250 VAC; 8 Amp, 30VDC. Inductive: 1/5 HP 125, 250 VAC.
Sensitivity	With an initial load of 30 pF, an increase of 1.5 pF can be detected
Static Protection	Peak Surge Current: 800 Amps; Clamp Voltage: 75 Volts
Cable Entry	2x 3/4" NPT (Single Compartment Housing) 1x 3/4" NPT (Dual Compartment Housing)



Liquid and Slurries



Interface Detection

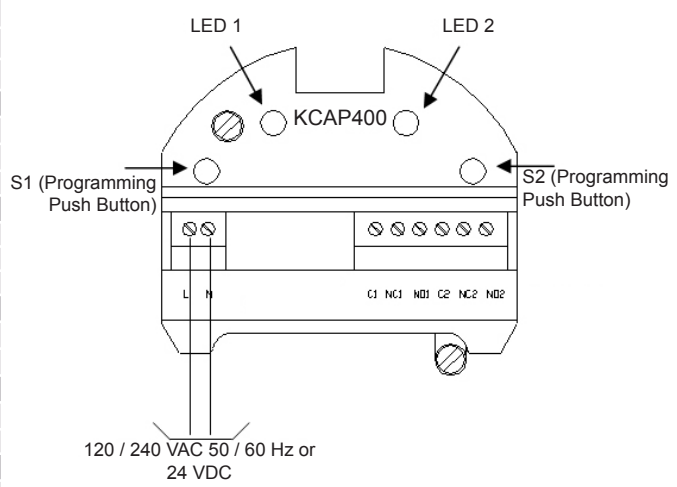


Powders and Granulars

# ORDERING INFORMATION

KCAP400.a.b.c.d.e.f.g.h.i.j.k	
a	Operating Power
1	24 VDC
2	120 VAC
3	240 VAC
b	Housing
A1W	Single Compartment Aluminum Housing with Glass Cover
A2W	Dual Compartment Aluminum Housing with Glass Cover
S2W	Dual Compartment SS Housing with Glass Cover
c	Process Connection
0750	3/4" NPT (standard)
FL	Flange Shipped Loose
WP	Welded Process Connection
d	Process Connection Material
S6	316L Stainless Steel
CST	Carbon Steel (only available with FL)
e	Process Connection Size / Rating / Type
X	None
XXXX	Specify from Flange Chart SLG-0001-1
f	Probe Type (Reference SLG-0006-1 Table 1B)
2	Standard - Bare 316SS Probe / 316SS Nipple
XXXX	Probe Type Code (1 to 5 digits) <sup>1</sup>
g	Approvals
X	None
N2	FM Explosion Proof with Intrinsically Safe Sensor
h	Remote / Mounting
X	None
R	Remote Mount. Specify Length in Feet or Meters (Max. 200 Feet / 70 Meters)
HT6	6" 316SS High Temperature Extension (>250°F / 121°C) (general purpose only - NOT approved by FM)
i	Pipe Extension
X	None
PE	316SS High Temperature Extension (>250°F / 121°C) (general purpose only - NOT approved by FM)

# ELECTRICAL CONNECTION DIAGRAM



**KCAP400.a.b.c.d.e.f.g.h.i.j.k**

j	Indicating Lamp
X	<b>None</b>
L2	120 VAC - External "Alarm Only" Indicating Lamp (general purpose only - NOT approved by FM)
L3	240 VAC - External "Alarm Only" Indicating Lamp (general purpose only - NOT approved by FM)

k	Inactive Bushing
X	<b>None</b>
IL	Inactive Bushing for Probe (Specify custom length in mm / in.) (NOT approved by FM)

Insertion Length (in. / mm)

**Available Accessories:**

MP	304SS "bulk solids" mounting plate with 3/4" NPT half coupling (for paddle switch replacement)
M20	M20 Connection
M20-SS	M20 316SS Female Electrical Connection

**Services will follow the model code with // and will not be included on the device tag**

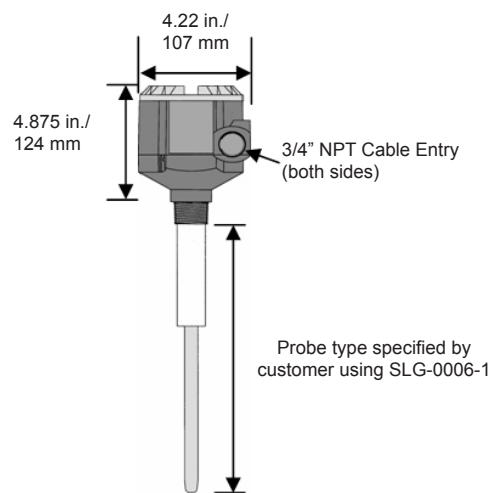
**Services**

GD1	Drawings for Approval - NOTE: Lead time will start after receipt of customer approved drawings
GD2	Drawings for Record
GD3	Certified as Built Drawings - NOTE: Lead time will start after receipt of Purchase Order
CHC	Positive Material Identification with Carbon Content
CHD	Positive Material Identification without Carbon Content
C2	Material Monitoring with Inspection Certificate 3.1 acc. EN 10204
GS1	Certificate of Origin
GS2	Certificate of Origin Notarized by Local Chamber of Commerce
GS3	Certificate of Origin Legalized by Specific Country Chamber of Commerce - Lead Time may be Extended depending on Country
GS4	Korean Foreign Trade certificate
GS5	NAFTA Certificate
GS6	EX-IM BANK Certificate (One per Tag)
GS7	Approved Material List (Requires C2 under Material Monitoring)
CU3	Certificate of Functionality
CN1	NACE (MR 0103) Hardness Certificate (Requires C2 in Material Monitoring)
CN3	NACE (MR 00175 / ISO 15156) Hardness Certificate (Requires C2 in Material Monitoring)

**Notes:**

- 1. Probe Type Codes
  - 6Bare 316SS Cable Probe / 316SS Nipple
  - 8CPVC covered Cable Probe / 316SS Nipple
  - N PTFE covered Cable Probe / 316SS Nipple
  - R PTFE Sheathed Probe / 316SS Nipple
  - RD PTFE Sheathed Probe with welded ground reference rod
  - X P2 Process Connection Type (Consult Factory)

**GENERAL DIMENSIONS**



# Contact us

## **ABB Inc.**

Industrial Automation  
125 E. County Line Road  
Warminster, PA 18974  
USA  
Tel: +1 215 674 6000  
Fax: +1 215 674 7183

## **ABB Inc.**

Industrial Automation  
17100 Manchac Park Lane - Suite B  
Baton Rouge, LA 70817  
USA  
Tel: +1 225 408 0800  
Service: +1 225 408 0898  
Service e-mail: [ktek-service@us.abb.com](mailto:ktek-service@us.abb.com)

**[www.abb.com/level](http://www.abb.com/level)**

## Note











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	Force Measurement		Level Measurement
	Natural Gas Measurement		Pressure Measurement
	Recorders and Controllers		Temperature Measurement

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