

DIGITAL pH/ORP/CONDUCTIVITY INDICATOR/CONTROLLER



DTI-12



DTC-300



DSP-12



ISM-10

DESCRIPTION:

These are low cost field proven models used for general-purpose indication, control and high or low alarms. These are suitable for indicating and controlling the various process parameters such as PH, ORP, and Conductivity etc. The sensor input can be directly connected to the high input impedance signal isolator/converter model ISM-10 through BNC connector, which in turn gives optically isolated (4-20)mA signal equivalent to the process value. This (4-20)mA can be fed to the above instruments for the indication in the desired calibrated range. These are easy to install and operate. The above models also directly accept input of (4-20)mA from the external transmitters. Retransmission output proportional to the input can also be provided from these indicator/controllers.

MODEL WISE DESCRIPTION:

DTI-12 is a simple process indicator.

DTC-300 is a single input and single output suitable for general-purpose control of dosing or metering pump or for high or low alarm.

DSP-12 is a dual input and dual output suitable for controlling dual pumps or for high and low alarm.

ISM-10 accepts input from pH/ORP/Conductivity sensors and converts to optically isolated (4-20)mA signal.

TECHNICAL SPECIFICATIONS:

Sensor Input	mV or (4-20)mA from ISM-10 or from transmitter
Range	Full range of the specified input 0.00 to 14.00 for pH / -1999 to +1999 mV for ORP / 0.0 to 199.9 for conductivity
Display	3 and ½ digit 0.5" red 7 segment LED
Resolution	0.01/0.1/1 throughout the range
Accuracy	Better than ± 0.5% of the range (absolute to the input)
Set Point Adjustment over full range	Single or dual using front panel potentiometer with LED indication. (Model DTC-300 and DSP-12)
Control Action	On / Off (with fixed hysteresis)
Control Output	Relay or SSR driver 10VDC pulse for HIGH /LOW alarms with RED and GREEN LED indication
Loop Supply	24VDC for external two wire loop transmitter
Retransmission output	4-20mA proportional to process input RLmax = 400 Ohms
Supply Voltage	110 / 230VAC, 50 / 60 Hz, 24VDC
Size	96 x 96 x 120mm.
Enclosure	Metal with ABS bezel and polycarbonate front.

ORDERING INFORMATION:

Model (A)	Input (B)	Range (C)	Output 1 (D)	Output 2 (E)	Output 3 (Retrans.) (F)	Supply (G)
DTI-12	mV (B1)	0.00 to 14.00 pH (C1)	High (D1)	High (E1)	4-20mA (F1)	230VAC(G1)
DTC-300	mA (B2)	-1999 to +1999mV (C2)	Low (D2)	Low (E2)	None (F2)	110VAC(G2)
DSP-12		0.0 to 100.0 mho (C3)	None (D3)	None (E3)		24VDC (G3)
		0.0 to 100.0 uS/Cm (C4)	Not for DTI-12	Not for DTI-12 & DTC-300		
		Other (C5)				

EXAMPLE:

A	B	C	D	E	F	G
DTC-300	B 2	C 1	D 1	E 3	F 1	G 1

This means Single set point controller Model DTC-300 with (4-20)mA for 0.00 to 14.00 pH input with High alarm and retransmission of 4-20mA, operating on 230VAC.

MICROPROCESSOR BASED ON LINE pH / ORP / CONDUCTIVITY PID CONTROLLER MODEL: PID 300



PID-300



ISM-10

DESCRIPTION:

Libratherm offers PID controller for ON LINE monitoring and controlling of pH or ORP or Conductivity value in the continuous process. The controller can be interfaced with the pH / ORP / Conductivity sensor to display the process value in the corresponding range.

The controller gives direct / reverse dc pulse PID output with settable dead band for the metering or dosing pump to control quantity of both acid and base levels in the chemical process, water purification or effluent treatment plants. The normal pulse rate is 100 pulses per minute. The dual direct / reverse (4–20)mA is also available for actuator accepting direct analog signals. High and Low alarm relay contacts are additionally provided for alarms or interlocking. The controller is available in both standard and weatherproof enclosure.

For interfacing low level signals from ORP/pH/Conductivity sensors, Libratherm offers signal convertor/isolator module with BNC connector for generating equivalent (4-20)mA signal for long distance transmission of measured value up to the control room.

TECHNICAL SPECIFICATIONS:

Sensor Input	(4-20)mA from ISM-10 or from the transmitter
Range	Full range of the specified input 0.00 to 14.00 for pH / -1999 to +1999 mV for ORP / 0.0 to 199.9 for conductivity
Display	4 digit 0.5" Red 7-segment LED for process variable and 4 digit 0.5" Red 7-segment LED for set value & other parameters
Resolution	0.01/0.1/1.0 Subject to the specified range
Accuracy	Better than $\pm 0.1\%$ of the range
Set Point Adjustment	Soft touch membrane key board
Control Action	PID – analog and pulse
Control Output	SSR driver 10VDC pulse with LED indications, and/or (4-20)mA (for both Reverse and Direct Action)
Event Output	High or Low Alarms Relay (5A @ 230VAC) with LED
Retransmission Output	(4-20)mA proportional to Input (8 bit resolution)
Supply Voltage	110 / 230VAC, 50 / 60 Hz,
Size	96 x 96 x 160 mm.
Enclosure	Metal with ABS bezel and polycarbonate front.

ORDERING INFORMATION FOR MODEL PID-300

Range (A)	Output 1 (Direct) (B)	Output 2 (Reverse) (C)	Output 3 (Direct) (D)	Output 4 (Reverse) (E)
0.00 to 14.00 pH (A1)	(4-20)mA (B1)	(4-200mA (C1)	DC pulse control (D1)	DC pulse control (E1)
-1999 to +1999mV (A2)	None (B2)	None (C2)	High Alarm Relay (D2)	Low Alarm Relay (E2)
0.0 to 100.0 mho (A3)			None (D3)	None (E3)
0.0 to 100.0 uS/Cm (A4)				
Other (A5)				

Output 5 (Retrans) (F)	Supply (G)
(4-20)mA (F1)	230VAC (G1)
None (F2)	110VAC (G2)

EXAMPLE:

A	B	C	D	E	F	G
A 1	B 1	C 1	D 1	E 1	F 1	G 1

This means PID controller for pH input having display range of 0.00 to 14.00 pH accepting 4-20mA input with direct and reverse (4-20)mA output and direct and reverse DC pulse output with (4-20)mA retransmission output operating on 230VAC supply.

MICRO-CONTROLLER BASED pH / ORP / CONDUCTIVITY INDICATOR / CONTROLLER MODEL: PID-723



PID-723



ISM-10

INTRODUCTION:

Libratherm offers new model of PID controller (**Model PID-723**), which is indigenously designed and developed using the latest micro-controller. The specification incorporated serves the every simple and critical pH and process control applications of the industry. It accepts (4-20)mA from pH / ORP / Conductivity from convertor (ISM-10) or from the external transmitter.

The control action is PID for both direct and reverse action. Control outputs are in the form of (4-20)mA (with 12 bit resolution). Retransmission output of (4-20)mA proportional to the input of (4-20)mA is also available. High and Low alarm relay contacts are additionally provided for alarms or interlocking.

TECHNICAL SPECIFICATIONS:

Sensor Input	(4-20)mA from ISM-10 or from the transmitter
Range	Full range of the specified input 0.00 to 14.00 for pH / -1999 to +1999 mV for ORP / 0.0 to 199.9 for conductivity
Display	4 digit 0.3" Red 7-segment LED for process variable and 4 digit 0.3" Red 7-segment LED for set value & other parameters
Resolution	0.01/0.1/1.0 Subject to the specified range
Accuracy	Better than $\pm 0.1\%$ of the range
Set Point Adjustment	Soft touch membrane key board
Control Action	PID – analog
Control Output (4 outputs)	Single or dual (4-20)mA (for both Reverse and/or Direct Action) OR DC pulse @ 100 pulses/minute (PW=200mS)
Event Output	High or Low Alarms Relay (5A @ 230VAC) with LED
Retransmission Output	(4-20)mA proportional to Input (12 bit resolution)
Supply Voltage	110 / 230VAC, 50 / 60 Hz,
Size	72 x 72 x 120 mm.
Enclosure	Metal with ABS bezel and polycarbonate front.

ORDERING INFORMATION FOR MODEL PID-723

Range (A)	Output 1 (Direct) (B)	Output 2 (Reverse) (C)	Output 3 Relay (D)	Output 4 Relay (E)
0.00 to 14.00 pH (A1)	(4-20)mA (B1)	(4-20)mA (C1)	High Alarm (D1)	Low Alarm (E1)
-1999 to +1999mV (A2)	None (B2)	None (C2)	None (D2)	None (E2)
0.0 to 100.0 mho (A3)				
0.0 to 100.0 uS/Cm (A4)				
Other (A5)				

Output 5 (Retrans) (F)	Supply (G)
(4-20)mA (F1)	230VAC (G1)
None (F2)	110VAC (G2)
Available only if	
any One of B1 or	
C1 is Required	

EXAMPLE:

A	B	C	D	E	F	G
A 1	B 1	C 2	D 1	E 1	F 1	G 1

This means PID controller for pH input having display range of 0.00 to 14.00 pH accepting 4-20mA input with only direct (4-20)mA output with High and Low Alarm relay and (4-20)mA retransmission output operating on 230VAC supply.

NOTE:

For your requirement for sensor and transmitters kindly forward your application details to enable us to submit our offer. User can procure their own sensor and transmitter as per the requirement.

Please contact for further information:

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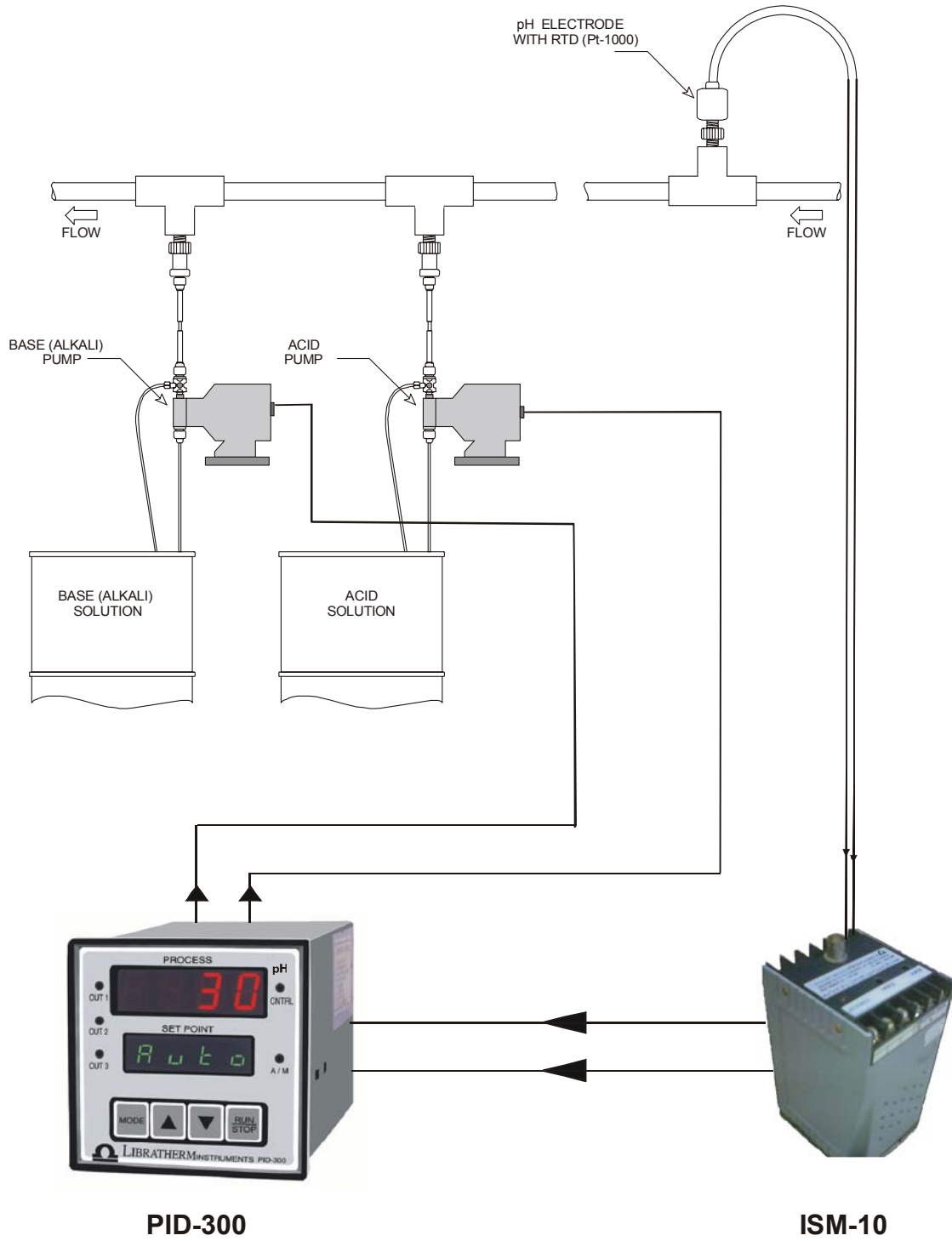
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TYPICAL CLOSED LOOP pH CONTROL SYSTEM



PID-300

ISM-10