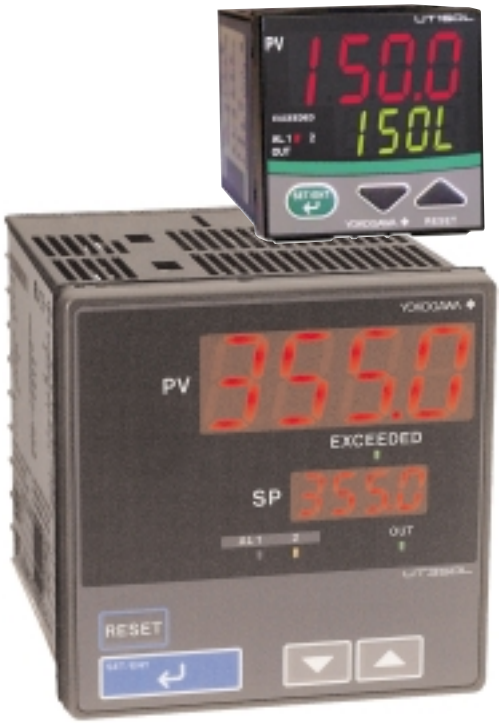
UT150L & UT350L

CONFIGURABLE AS EITHER A HIGH OR LOW LIMIT CONTROLLER

It could happen one day. Your process equipment might lose its cool. That's why the UT150L and UT350L were developed — to be there when your process loses control. The UT150L and UT350L was designed to accept input from virtually any process control system.

The UT150L Limit Controller (1/16 DIN size) is an FM-approved instrument that can be configured either as a high limit or a low limit controller by a user. The UT150L features universal input, a timer to count the duration time the setpoint is exceeded, and a register to retain the maximum temperature reached. The two alarm outputs, retransmission output, and communication function are available as optional features.

The FM-approved UT350L 1/4 DIN limit controller is configurable as either a high or low limit. Features include universal input, retransmission output, two alarm outputs, and an optional RS-485 communications package. To further safeguard your system, its timer will track the total time the setpoint has been exceeded, and a register will retain the maximum temperature reached. An LED display with 20mm high characters makes the process variable easy to read.



UT150L FEATURES

- **Small, Space-Saving 1/16 DIN Package**
- **Sharp and Large 4-digit LED Display**
- **IP65 Splash-Proof and Dust-Proof Front Panel**
- **Universal Input**
  For Thermocouple, RTD and DC mV & V signals
- **Limit Control Function Specifications**
  1 setpoint, high- or low-limit control type, and latching limit action
- **Retransmission Output (Optional)**
- **Two-Alarm Relay Outputs (Optional)**
- **RS485 Communication Function (Optional)**
  MODBUS, PC-Link & Ladder protocols are supported

UT350L FEATURES

- **1/4 DIN Limit Controller**
  High or low limit latching action
- **Universal Inputs**
  Thermocouples, RTDs, DC current, and voltage
- **Alarm Function**
  Two programmable alarm outputs
- **Comprehensive Display**
  Four-digit display of variable and setpoint; alarms, limit, and output status indication LEDs
- **Retransmission Output**
  PV or setpoint output as 4 to 20mA
- **RS-485 Communications (Optional)**
  Connect up to 31 controllers to a PC, PLC, or network
- **Safety**
  Drip-proof front panel (IP55 compatible)
- **Security Feature**
  Password protection

UT150L SPECIFICATIONS

MEASURED VALUE (PV) INPUT

INPUT	1 point
INPUT TYPE	Universal; can be selected by software
SAMPLING PERIOD	500ms

CONTROL OUTPUT

OUTPUT	1 point
OUTPUT TYPE	Relay contact output. Contact capacity: 3A at 240V AC or 3A at 30V DC (with resistance load)

ALARM FUNCTIONS (OPTION CODE /AL)

ALARM TYPES	22 types (waiting action can be set by software): PV high limit, PV low limit, Deviation high limit, Deviation low limit, Deenergized on deviation high limit, De-energized on deviation low limit, Deviation high and low limits, High and low limits within deviation, De-energized on PV high limit, De-energized on PV low limit, Fault diagnosis output, FAIL output
ALARM OUTPUT	2 relay contacts. Relay contact capacity: 1A at 240V AC or 1A at 30V DC (with resistance load)

RETRANSMISSION OUTPUT OPTION

OPTION	The retransmission output is provided only when the /RET option is specified
OUTPUT SIGNAL	4-20mA DC
MAXIMUM LOAD RESISTANCE	600Ω or less
OUTPUT ACCURACY	±0.3% of span (at 23±2°C ambient temperature)

CONTACT INPUTS

OPTION	The contact inputs are provided only when the /EX option is specified.
FUNCTION	Resetting “exceeded status”
INPUT	2 points (with the shared common terminal)
INPUT TYPE	Non-voltage contact or transistor contact input
CONTACT CAPACITY	At least 12V/10mA

COMMUNICATION FUNCTION OPTION

OPTION	The communication function is provided only when the /RS option is specified
COMMUNICATION PROTOCOL	Ladder communication: Used for communication with PLC. MODBUS communication: Used for communication with equipment featuring the MODBUS protocol
COMMUNICATION INTERFACE	Applicable standards: Complies with EIA RS-485 Number of controllers that can be connected: 31 Maximum communication distance: 1,200m Communication method: Two-wire half-duplex, start-stop synchronization, non-procedural Baud rate: 2400, 4800, or 9600 bps

SAFETY AND EMC STANDARDS

SAFETY	Confirms to IEC1010-1: 1990 & EN61010-1: 1992 Approved by CSA1010 for installation category CAT II (IEC1010-1). Certified for UL508. Certified for FM-3810 and FM-3545
EMC STANDARDS	Complies with EN61326

POWER SUPPLY AND ISOLATION

POWER SUPPLY	Voltage: Rated at 100-240VAC (±10%) Frequency: 50 or 60Hz
MAXIMUM POWER CONSUMPTION	8VA max. (4W max.)

CONSTRUCTION, MOUNTING, AND WIRING

CONSTRUCTION	Splash-proof IP65 for front panel when not mounted side-by-side. Casing: ABS resin and polycarbonate. Case color: Black
MOUNTING	Flush panel mounting
TERMINALS	Screw terminals

ENVIRONMENTAL CONDITIONS

AMBIENT TEMPERATURE/ HUMIDITY	0-50°C (0-40°C when mounted side-by-side) 20-90% RH (no condensation allowed)

UT350L SPECIFICATIONS

GENERAL SPECIFICATIONS

DISPLAY SPECIFICATIONS	PV Display: 4-digit, 7-segment red LED, 20mm character height Setpoint Display: 4-digit, 7-segment red LED, 9.3mm character height Status Indicating La: LEDs
POWER SUPPLY SPECIFICATIONS AND ISOLATION	Power Supply: Rated at 100 to 240 VAC (±10%), 50/60Hz Power Consumption: Max. 20VA (Max. 8.0 W) Memory Back-Up: Non-volatile memory
LIMIT CONTROL FUNCTION	Setpoint: 1 Control Type: High limit or low limit Limit Action: Latching

INPUT

NUMBER OF INPUT POINTS	1
UNIVERSAL INPUT	Thermocouple: J, K, T, B, S, R, N, E, L, U, W, Platinel 2, PR 20-40, W97Re3-W75Re25 RTD: Pt100, JPt100 DC voltage: 0 to 2V, 1 to 5V, 0 to 10V, -10 to 20mV, 0 to 100mV
CONTACT INPUT	Usage: Confirmation of limit output Number of Input Points: 1 Input Type: Voltage-free contact input type or transistor contact input Input Contact Rating: 12 VDC, 10mA or more

OUTPUT

RETRANSMISSION OUTPUT	Either PV or target setpoint is output Number of Output Points: 1 Output Signal: 4 to 20mA DC Load Resistance: 600Ω (or less) Output Accuracy: ±0.3% of span
CONTROL OUTPUT	Relay Contact Output: 1 SPDT 250 VAC 3A, or 30 VDC 3A (resistance load) Number of Output Points: 1
CONTACT OUTPUT	Usage: Alarm output and FAIL output Number of Relay Contact Output Points: 2 Relay Contact Rating: 240 VAC, 1A or 30 VDC, 1A

UT350L SPECIFICATIONS, CONTINUED

ALARM FUNCTION

INDICATION	The alarm status is indicated by the alarm lamp on the front panel
ALARM TYPES	PV high limit, PV low limit, Deviation high limit, Deviation low limit. De-energized on deviation high limit, De-energized on low limit. Deviation high and low limits, High and low limits within deviation, De-energized on PV high limit, De-energized on low limit.
ALARM OUTPUTS	2 points

COMMUNICATION INTERFACE (OPTIONAL)

COMMUNICATION PROTOCOL	Computer link or ladder communication
STANDARD	EIA RS-485
MAXIMUM NUMBER OF CONNECTABLE CONTROLLERS	31
MAXIMUM COMMUNICATION DISTANCE	1200m
COMMUNICATION METHOD	2-wire half duplex or 4-wire half duplex, start-stop synchronization, non-procedural.
COMMUNICATION RATE	600, 1200, 2400, 4800, 9600 bps

STRUCTURE

CONSTRUCTION	Front panel drip-proof (IP55 compatible)
EXTERNAL DIMENSIONS	96 x 96 x 100mm (WxHxD)

UT150L ORDERING INFORMATION

U	T	1	5	0	L	–	A	N	–	B

To create a part number fill in the boxes above with the appropriate number and/or letter from the corresponding box below.

Box A: Control Output

R	= Relay output	$ 195

Box B: Optional Functions *(Up To 2 Selectable)*

0	= None	N/A
/AL	= Two-alarm contact outputs	$ 20
/RET	= Retransmission of input signal	40
/EX	= Contact inputs for SP selection*	20
/RS	= RS485 Communication*	95

** /RS is not available with /EX*

UT350L ORDERING INFORMATION

U	T	3	5	0	L	–	0	–	A

To create a part number fill in the boxes above with the appropriate number and/or letter from the corresponding box below.

Box B: Optional Functions

0	= None	$ 355
1	= With communication	530