

ISE, Inc.

West 5010 Industrial Controller



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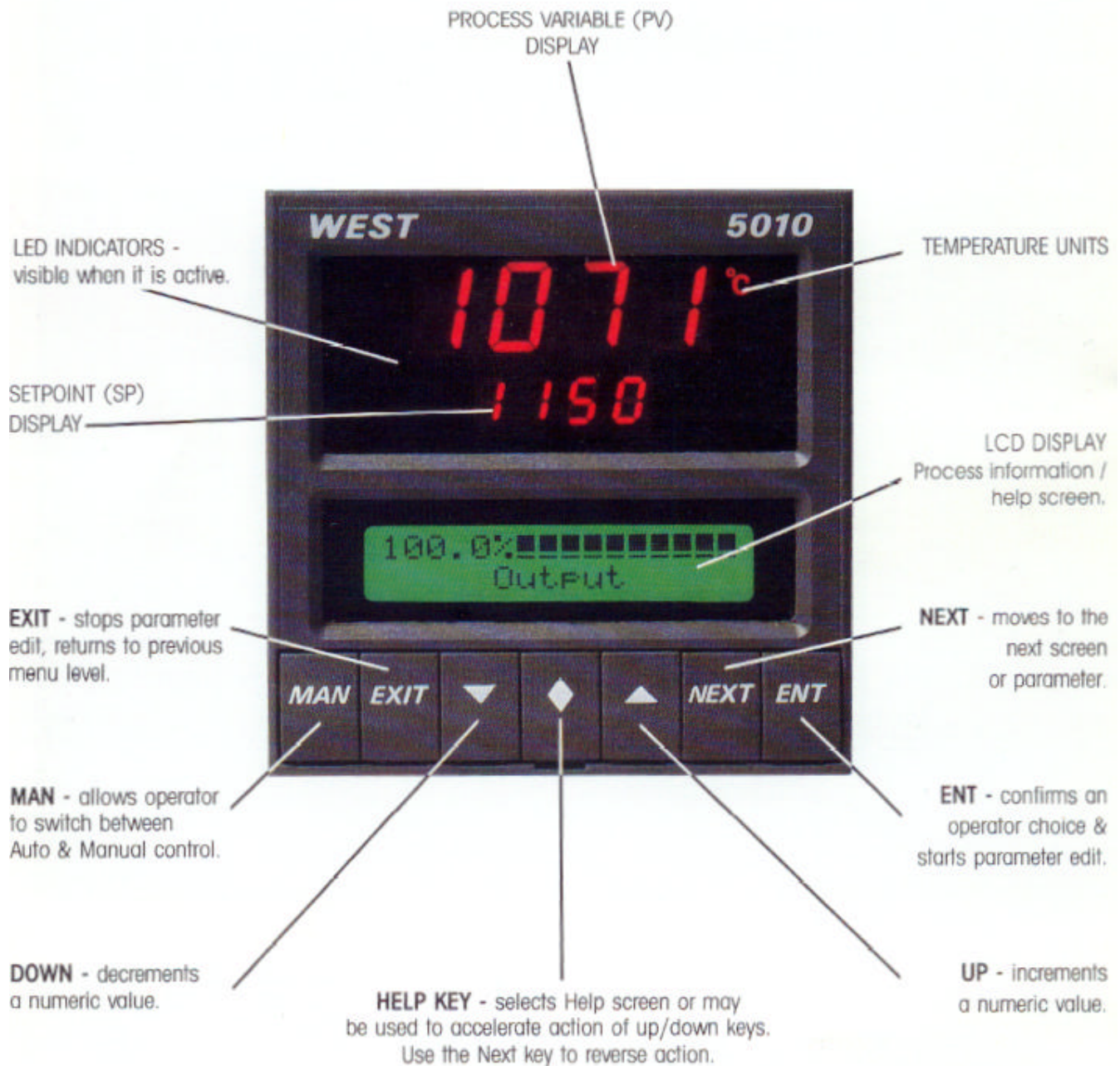
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The World's Most Advanced 1/4 DIN Controller

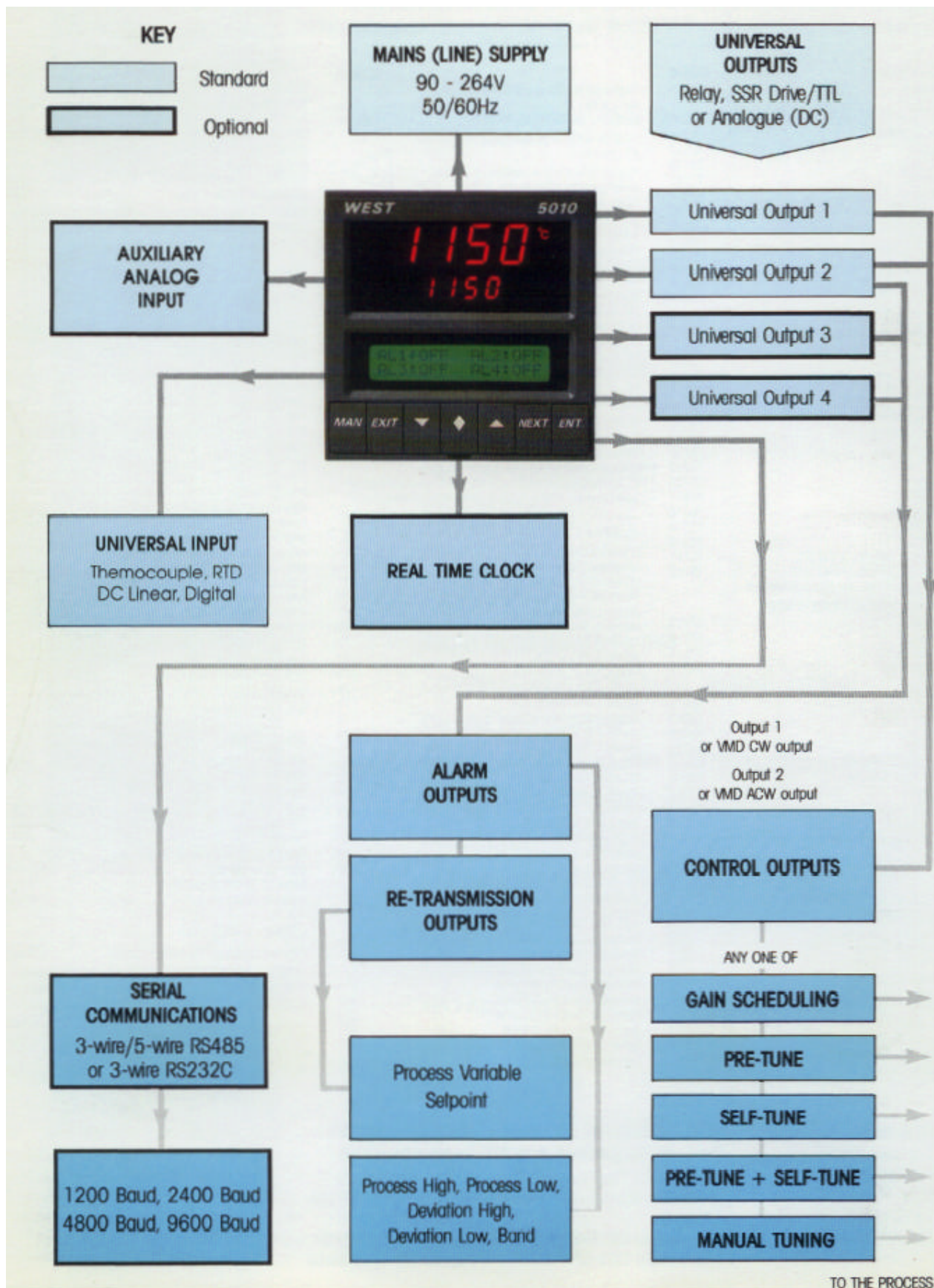
The WEST 5010 is an advanced universal micro-processor based instrument that can measure, indicate and control a wide variety of processes. A selectable input sample rate of 6 per second or 20 per second makes the 5010 particularly suitable for temperature, flow or pressure applications.



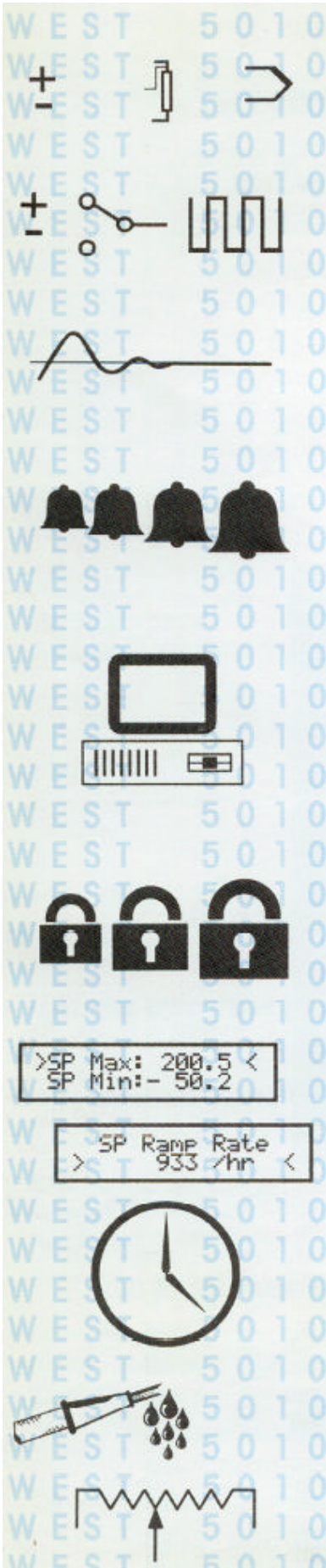
With Flexible Input / Output Structure

Menus, plain english prompts and on line help screens make configuration of the 5010 a simple task,
The block diagram below illustrates the full flexibility.

Once configured a user defined password can be enabled to prevent unauthorized access.
The 5010 may also be fully configured, off line, by using West configuration software and a PC.



WEST 5010 details of Features



Universal input

The universal input is capable of handling thermocouple, RTD or DC linear analog signals. The sample rate is selectable and the input has a programmable digital filter to reduce noise in the process input signal. Range trimming and scaling are also available.

Universal Output

This output is capable of providing relay, SSR or DC outputs. Universal Output 1 is used as Control Output 1. Universal Output 2 may be used as Control Output 2, an alarm output or a re-transmitted output (PV or SP). Outputs 1 & 2 may also be used for VMD applications. Universal Outputs 3 & 4 may each be used as an alarm output or a retransmitted output.

Automatic Tuning

Three automatic tuning facilities:

SELF TUNE: Uses the current P I and D parameters as a basis for optimizing the control algorithm during operation.

PRE-TUNE: A one-Shot tuning algorithm which may be evoked from the front panel or automatically on power-up.

Gain Scheduling

The PID terms are changed at user-defined values of Process Value, Setpoint or Power Output.

Alarm Features

The Controller is equipped with four "soft" alarms, which may be assigned to a hardware output circuit (configured for alarm operation). The alarm types available are Process Alarm (high or low), Deviation Alarm (high or low) and Bard Alarm.

Communications Capability

The Controller has a single communications port which may operate to RS232C, 3-wire RS485 or 5-wire RS485 protocol. When RS485 communications is employed, the Controller may be one of up to 32 in a network. The Controller's address is selectable from the front panel as is the Baud rate (4800, 9600 or 19200).

Accuracy

Accuracy is 0.1% of span.

Security System

Three modes of operation:

OPERATOR MODE: For day-to-day use. Free access to this mode.

SET UP MODE: Used to set up all the zone dependent parameters necessary to put the Controller into commission. Access to this mode via a "combination lock".

CONFIGURATION MODE: Defines hardware and setups of inputs and outputs The user can "flag" functions for display in operator mode.

Help Screens

On-line Help screens either prompt the operator to take action or warn of an error (e.g. "Input range changed").

Selectable Sample Rate

Process, inputs are sampled at 6 or 20 times per second. The faster rate is Ideal for fast processes (e.g. flow or pressure).

Real Time Clock

This feature may be used to control related processes. A built-in "Super Cap" back-up capacitor enables the clock information to be retained for up to seven days without power.

Dual Set point

Setpoint selection can be either local (via the front panel) or remote (via an optional digital input).

Remote Set point

An optional auxiliary analog input is used for the remote setpoint signal. Setpoint selection (local setpoint or remote setpoint) may be with local (via the front panel or remote (via digital input).

WEST 5010 Main Features

Standard

INPUT

Universal Input (Thermocouple, RID, DC Linear)
High Accuracy 0.1%
Input Sample Rate Selectable (20/sec or 6/sec)
Programmable Digital Input Filter

OUTPUT

Two Universal Outputs (Relay, SSR or DC)
Four Soft Alarms

Control

PROCESS TUNING CAPABILITIES

Operator Tune
Pre-tune
Self-tune
Pre-tune and Self-tune
Gain Scheduling

DUAL SET POINT

PROCESS VARIABLE OFFSET

RAMP FEATURE

General

FRONT PANEL SEALED TO IP65

COMPREHENSIVE FRONT PANEL SECURITY SYSTEM

ON LINE HELP SCREENS

90-264Vac AND 50 TO 60Hz UNIVERSAL INPUT POWER SUPPLY

CONFORMS TO EUROPEAN STANDARD FOR CE

FACILITY FOR "OFF LINE" CONFIGURATION (PC SOFTWARE)

HIGH QUALITY HUMAN INTERFACE

Options

TWO ADDITIONAL UNIVERSAL INPUTS (RELAY, SSR, OR DC)

CLOSED LOOP VMD

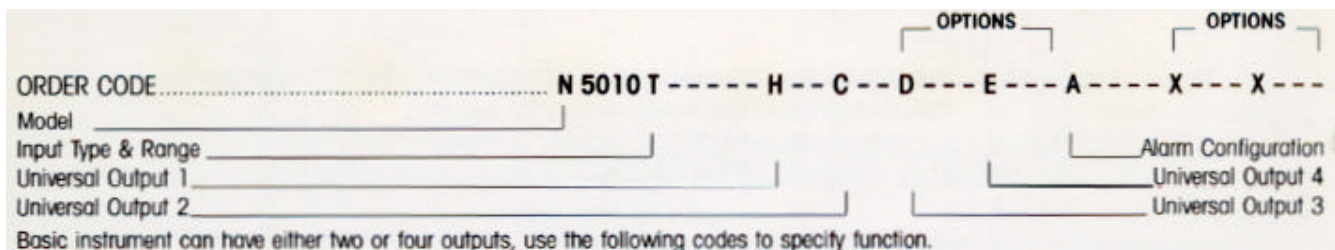
RELAY TIME CLOCK

RS 485 OR RS232C COMMUNICATIONS

Protocols: modbus ASCII, modbus® RTU,
West ASCII

SELECTABLE BAUD RATE UP TO 19.2K





Order Codes

BASIC Model

Model 5010

Process Input Type & Range

THERMOCOUPLE

R, 0-1650°C	T1127
R, 32-3002°F	T1128
S, 0-1650°C	T1227
S, 32-3002°F	T1228
B, 100-1820°C	T1983
B, 212-3308°F	T1984
J, -100-769°C	T6405
J, -150 - 1400°F	T6406
J, -100.0-450.0°C	T6407
J, -150.0-840.0°F	T6408
J, 0-450°C	T1417
J, 32-840°F	*T1418
L -100-760°C	T6805
L -150-1400°F	T6806
L -100.0-450.0°C	T6807
T, -200.0-400.0°C	T6513
T, -328.0-750.0°F	T6514
K, -200.0-1372°C	T6709
K, -328-2500°F	T6710
K, -200.0-450.0°C	T6711
K, -328.0-840.0°F	T6712
K, 0-1372°C	T1723
L, 32-2500°F	T1724
E, -100-800°C	T6617
E, -150-1472°F	T6618
N, 0-1300°C	T5373
N, 32-2373°F	T5349
W5 Tung 5% -26%Rh, 0-2316°C	T5111
W5 Tung 5% -26%Rh, 32-4201 °F	T5112

*Input range limited by trim adjustment

RESISTANCE THERMOMETER (3 WIRE)

-200.550°C	T7215
-328-1562°F	T7216
-200.0-+400.0°C	T7213
-328.0-750.0°F	T7214

LINEAR D.C.

0-10mV	T4011
0-50mV	T4043
0-5V	T4045
1-5V	T4034
0-10V	T4046
0-10mA	T3039
0-20mA	T3013
4-20mA	T3014

Process Input Option

Sample rate 20/sec	T----2
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Universal Output 1

Relay (5A-240V AC)	H10
SSR Drive (0/13V DC)	H50
DC Current 4-20mA	H21
DC Current 0-20mA	H24
DC Current 0-10mA	H25
DC Current 0-5mA	H26
DC Voltage 1-5V	H61
DC Voltage 0-5V	H64
DC Voltage 0-10V	H65
*Valve Motor Drive (s/w f/bk) (5A-120VAC)	H40

CODE

N5010

*Valve Motor Drive (open loop) (5A-120VAC)	H70
Output 1 Direct acting	H--3
* H40 - Slidewire input resistance 80 -450ohm	
* Code H70 If valve position indication required, specify code X392 In the 'X' field- X392	
Valve position indication, 80-380 ohms	X392

Universal Output 2

(See note)	
Not fitted	C00
Relay (5A-240V AC)	C10
SSR Drive (0/13V DC)	C50
DC Current 4- 20mA	C21
DC Current 0-20mA	C24
DC Current 0-10mA	C25
DC Current 0-5mA	C26
DC Volts 1-5V	C61
DC Volts 0-5V	C64
DC Volts 0-10V	C65

NOTES:
1 Universal Output 2 (UO2) Is not available if VMD option (H40 or H70) has been selected for Universal Output 1

2. Universal Output 2 may be used for Cool output (see above). Alarm output or Re-transmitted output.

Alarm Output U02, U03 & U04

Universal Output UO2	See note	C---
Universal Output UO3		D---
Universal Output UO4		E---
Alarm NOT Configured		-70
Alarm 1, Relay D.A.		-71
Alarm 2, Relay D.A.		-72
Alarm 3, Relay D.A.		-73
Alarm 4, Relay D.A.		-74
Alarm 1 & 2, Relay D.A.		-75
Alarm 1 & 3, Relay D.A.		-76
Alarm 1 & 4, Relay D.A.		-77
Alarm 2 & 3, Relay D.A.		-78
Alarm 3 & 4, Relay D.A.		-79
Alarm 1, Relay R.A.		-81
Alarm 2, Relay R.A.		-82
Alarm 3, Relay R.A.		-83
Alarm 4, Relay R.A.		-84
Alarm 1 & 2, Relay R.A.		-85
Alarm 1 & 3, Relay R.A.		-86
Alarm 1 & 4, Relay R.A.		-87
Alarm 2 & 3, Relay R.A.		-88
Alarm 3 & 4, Relay R.A.		-89

Retransmitted Output

U02, U03 & U04		
Universal Output UO2	See note	C---
Universal Output UO3		D---
Universal Output UO4		E---
Retransmitted PV 4-20mA		-211
Retransmitted PV 0-20mA		-241
Retransmitted PV 0-10mA		-251
Retransmitted PV 0-5mA		-261
Retransmitted PV 1-5V		-611
Retransmitted PV 0-5V		-641

CODE

Retransmitted PV 0-10V	-651
Retransmitted SV 4-20mA	-212
Retransmitted SV 0-20mA-	-242
Retransmitted SV 0-10mA	-252
Retransmitted SV 0-5mA	-262
Retransmitted SV 1-5V	-612
Retransmitted SV 0-5V	-642
Retransmitted SV 0-10V	-652
NOTE Universal Outputs UO2, UO3 and UO4 may be used for Alarm or Retransmitted Output - see above.	

Alarm Configuration

(Internal see note)	
Internal Alarm 1 - Not configured	A0---
Internal Alarm 1 - Process High	A1---
Internal Alarm 1 - Process Low	A2---
Internal Alarm 1 - Deviation High	A3---
Internal Alarm 1 - Deviation Law	A4---
Internal Alarm 1 - Band	A5---
Internal Alarm 2 - Not configured	A-0--
Internal Alarm 2 - Process High	A-1--
Internal Alarm 2 - Process Low	A-2--
Internal Alarm 2 - Deviation High	A-3--
Internal Alarm 2 - Deviation Low	A-4--
Internal Alarm 2 - Band	A-5--
Internal Alarm 3 - Not configured	A--0-
Internal Alarm 3 - Process High	A--1-
Internal Alarm 3 - Process Low	A--2-
Internal Alarm 3 - Deviation High	A--3-
Internal Alarm 3 - Deviation Law	A--4-
Internal Alarm 3 - Band	A--5-
Internal Alarm 4 - Not configured	A---0
Internal Alarm 4 - Process High	A---1
Internal Alarm 4 - Process Low	A---2
Internal Alarm 4 - Deviation High	A---3
Internal Alarm 4 - Deviation Low	A---4
Internal Alarm 4 - Band	A---5

NOTE: Four 'soft' alarms which may be connected to Universal Outputs. One or two alarms can be assigned to a single output,

Remote Set point Inputs

Input 4-20mA	X05-
Input 0-20mA	X37-
Input 0-10mA	X03-
Input 1-5V	X38-
Input 0-5V	X04-
Input 0-10V	X36-
Remote SP. input option - Internal Selection	X - - 0
Remote SR input option - External selection	X - - 1

Other Options

External selection for dual setpoint	X681
NOTE: The remote setpoint option is not available if VMD output (code H40 or H70) with valve position indication has been selected for output 1.	
Serial communications, 3 wire EIA 485	X06
Serial communications, 5 wire ELA 485	X07
Serial communications, EIA 232	X83
Real time clock	X84