RECORDERS AND DATA ACQUISITION

	Prices Start at	See Page
Circular Chart Recorders		
Honeywell DR4300 10" Circular Chart Recorders	$928.00	240
Honeywell DR4500 12" Classic Circular Chart Recorder	$1653.00	242
Honeywell DR4500 12" Truline Circular Chart Recorders	$1912.00	244
Paperless (Video Display) Recorders		
Honeywell eZtrend GR 5" Display Paperless Recorder	$1803.00	248
Honeywell Minitrend GR 5.5" Display Web-Ready Paperless Recorder	$2730.00	250
Honeywell Multitrend GR 12.1" Display High Performance Web-Enabled Paperless Recorder with Enhanced Data Storage	$4001.00	250
Stripchart Recorders		
Honeywell DPR180 7" Digital Process Reporter	$3985.00	Call
Honeywell DPR250 10" Multipoint Digital Process Reporter	$4899.00	Call
Accessories		
AMS2750-D Standards Compliance with Honeywell X-Series Recorders		255
		238
Honeywell TrendManager Pro Configuration and Analysis Software	$328.00	258
Honeywell TrendServer Pro Configuration, Analysis, and Monitoring Software for Paperless Recorders	$546.00	256
Honeywell TrendViewer Software for Paperless Recorders	FREE	256

Due to manufacturer agreements, not all products are available in all geographic areas and markets.
Prices in this catalog are current at the publication date, and are subject to change without notice.

Recorder Charts and Pens

Model Selection Guide

Description		Catalog Number	Price
Honeywell DR4300 10" Circular Chart Recorders	24-Hour, 0 to 100 (°C or Linear)	24001660-001	$32.34
	24-Hour, 0° to 300°F (Type J)	24001660-002	32.34
	24-Hour, 0° to 600°F (Type J)	24001660-003	32.34
	24-Hour, 0° to 2000°F (Type K)	24001660-005	32.34
	24-Hour, 50 to 250 (Linear)	24001660-008	32.34
	24-Hour, 0 to 200 (°C or Linear)	24001660-010	32.34
	24-Hour, 0° to 500°F (Type J)	24001660-013	32.34
	24-Hour, 0° to 800°F (Type J)	24001660-014	32.34
	24-Hour, -90° to 210°C (Type T)	24001660-034	32.34
	24-Hour, -85 to 190 (RTD)	24001660-047	32.34
	24-Hour, 0 to 600mV, 4-20 mA (Lin)	24001660-052	32.34
	24-Hour, 50° to 650°F (Type J)	24001660-056	32.34
	24-Hour, 0° to 200°F (Type J)	24001660-114	32.34
	7-Day, 0 to 100 (°C or Linear)	24001661-001	32.34
	7-Day, -5 to 50 (Linear)	24001661-022	32.34
	7-Day, -35 to 75 (Linear)	24001661-023	32.34
	7-Day, 0 to 50 (Linear)	24001661-051	32.34
	7-Day, 0 to 100, -30 to 70 (Linear)	24001661-601	32.34
	Starter Box (25), 24H/7D, 0-100 (Lin)	30755820-001	22.80
Honeywell 12" Circular Chart Recorders	Truline Thermal Chart	30755317-001	61.46
	Starter Box of 25, 24H/7D, 0-100	30755311-001	20.90
	7-Day, 0–100 Linear	30014479-000	35.00
	24-Hour, 0–100 Linear	30014012-000	35.00
	24-Hour, 0–200	30012518-000	35.00
	24-Hour, 50–250	30016378-000	35.00
	24-Hour, 50–0-150	30680015-051	35.00
Honeywell DPR100 C/D 4" Stripchart Recorders	6-Color Ink Wheel	46180501-001	65.52
	Pen #1 Ink Cartridge, Blue	46187001-001	15.07
	Pen #2 Ink Cartridge, Red	46187001-002	15.07
	4" Fanfold Chart, 50 Divisions	46187045-050	26.76
	4" Fanfold Chart, 100 Divisions	46187045-100	26.76
	4" Roll Chart, 50 Divisions	46187044-050	14.02

Description		Catalog Number	Price
8" Circular	7-Day, 0–100 (for Class 61)	3001571T-000	$32.50
Honeywell DPR180 7" and DPR250 10" Stripchart Recorders	6-Color Ink Cartridge	46182712-001	81.04
	7" Fanfold Chart, 100 Divisions	46190051-100	28.90
	7" Roll Chart, 100 Divisions	46190052-100	28.90
	10" Fanfold Chart, 100 Divisions	46182707-001	39.50
	10" Fanfold Chart, 300 Divisions	46182707-300	35.38
	10" Roll Chart, 100 Divisions	46182708-001	36.00
DR4200/4300/4500 Chart Drive Motor/Hub Kit		30756113-501	129.00
DR4200/4300/4500 Chart Hub Kit (Pack of 2)		30756150-001	45.00
DR4300 Printed Circuit Assembly, Record/Control		51404453-502	730.00
DR4500 Alarm Output Kit		30756140-501	193.00
DR4500 Display Board		30757571-501	242.00
DR4500 Input Upgrade Card		30756141-003	445.00
DR4500 Keypad Membrane Switch Kit		30754957-501	115.00
DR4500 Motherboard		30754919-501	187.00
DR4500 Printed Output Circuit Board		30754922-501	493.00
DR4500 Truline Replacement Pen Arm Assembly		30756304-501	181.00
DR4500 Truline Pen Motor Servo Plate Assembly		30754975-503	228.00
DR4500 Truline Processor Board		51309355-502	784.00
Fiber-Tip Pens for Honeywell Circular Chart Recorders	Honeywell Red Pen, 0.37" Nib	30735489-002	54.92
	Honeywell Purple Pen, 0.6" Nib	30735489-007	54.92
	Universal Red Pen, 0.37" Nib	82-39-0202-06	28.36
	Universal Red Pen, 0.6" Nib	82-39-0302-06	28.36
	Universal Purple Pen, 0.6" Nib	82-39-0306-06	28.36
	Universal Purple Pen, 0.37" Nib	82-39-0206-06	28.36
	Universal Green Pen, 0.14" Nib	82-32-0314-05	28.36
Amprobe	4" x 30-Ft Roll Strip Chart (1 Roll)	300SVA	28.24
Dickson Circ Charts	8" Dia., 7-Day, 0 to 100	C412	35.10
	8" Dia., 7-Day, -20 to 120, 0–100 rH	C417	35.10
Foxboro	12", 24-Hour, 0-100 Range	898413	26.84
UE Pressure-Sensitive Circular Charts	6" Dia., 7-Day, 50 to -115, (50/Box)	6282-169	36.10
	6" Dia., 24H, 160 to 280, (50/Box	6282-176	36.10
	6" Dia., 7-Day, 25 to -40 (50/Box)	6282-240	36.10
	6" Dia., 7-Day, 15 to -50 (50/Box)	6282-301	36.10

Choosing the Right Circular Chart Recorder

The Recorders of Honeywell's LeaderLine Family.

	DR4300	DR4500 Classic	DR4500 Truline
Chart	10" Circular Choose from 150 preprinted charts	12" Circular Your choice of 5,000 preprinted charts	12" Circular: Prints its chart as it records! With user-configurable data (date, time, process ID) directly on the chart!
Input Features	Up to 2 T/Cs: Type J, K, R, S, T; RTDs: Pt100Ω 0-200 mV; 0-1, 0-5, 1-5 or 0-10 VDC Optional Model: T/Cs: B, E, W_5W_{26}, NiNi Moly	Up to 2 T/Cs: J, K, R, S, T, B, E, W_5W_{26}; RTDs: Pt100Ω, Pt500Ω Linear: 4-20mA, 0-10 or 10-50 mV, 1-5 or 1-10 V	Up to 4 T/Cs: J, K, R, S, T, B, E, W_5W_{26}; RTDs: Pt100Ω, Pt500Ω Linear: 4-20mA, 0-10 or 10-50 mV, 1-5 or 1-10 V
Accuracy	±0.35% Span Standard ±0.1% Span, (Field-Calibrated)	±1°F for T/Cs ±1% or Better for Voltage Ranges	
Digital Input	2 with Control	2	
Alarms*	2 per Pen	2, 4 or 6	
Auxiliary Output*	1 per Pen	1-3	
Communications*	3rd Party Ethernet Bridge, Limited Modbus RTU, RS485	3rd Party Ethernet Bridge, Modbus RTU RS485	
Controllers*	1 per Pen	1 or 2	2 (4-20mA) Pulse Output
Autotune	AccuTune II	AccuTune II	AccuTune II
Control Features	On/Off, Duplex, PD with Manual Reset	Cascade, Duplex, Position Proportional, Universal Output	Cascade, Duplex, Position Proportional, Universal Output
Door	NEMA 3/IP66	NEMA 3, NEMA 4X Door Optional	
Programmers*	1 per Pen, 4 Profiles, 24 Segments	Standard with Control, 6 Profiles, 36 Segments	
Sample Rate	0.3 Seconds	0.3 to 0.7 Seconds	
Software Programs	SpecView	SpecView, Prosoft	
Added Functionality	Timers, One Totalizer per Pen, 24 VDC Power, Optional Two-Line Display for Viewing PV, Setpoint, Control Output, Deviation from Setpoint	Totalization of Both Channels, Timers Setpoint Programming with Real-Time Clock, Auxiliary 4-20 mA Output, Integral 24 VDC Power Supply Provides Loop Power for Up to Two Transmitters	Totalization on All Channels, Timers, Setpoint Programming, Auxiliary 4-20 mA Output, Math Functions (Mass Flow, BTU, Fo Sterilization), Message Printing, Integral 24 VDC Power Supply, Real-Time Clock, Up to 6 Relays, HTST, Dairy and Pasteurization Models Available
Prices Start at	**$928.00**	**$1653.00**	**$1912.00**
Approvals	UL, FM APPROVED, CSA	CE, FM APPROVED, UL, CSA	CE, FM APPROVED, UL, CSA

* Optional Functionality

Need a temperature input for your recorder?

See pages 98–105.

DR4300 10" Circular Chart Recorder

Honeywell

Standard

With Digital Display

AccuTune II and Fuzzy Logic Overshoot Suppression Standard in PID Control!

Features

- **One or Two-Pen Models**
- **Accuracy 0.35% Span**
- **Field Configurable**
  Fully configurable via DIP switches. Set chart range and speed to meet your needs.
- **Support for Thermocouple Types**
  J, K, R, S, T, 100Ω RTDs, plus 0-20 or 4-20 mA, 0-20 or 0-50 mV, 0-5 and 1-5 VDC
- **Built-In Self Test**
- **Thermocouple Burnout Protection**
  If a thermocouple fails, the pen is driven upscale, to safely shut down your process. Can be field adjusted as downscale failsafe.
- **FM-Approved Limit Control Models**
  Optional high or low manual reset PV limit alarm. Adjustable, will energize a relay to activate an alarm or shut down a process.

Display Models Also Include

- **Improved Accuracy to 0.10% span**
- **24 VDC Transmitter Power Supply**
- **Digital Display/Configuration Keypad**
  Recording parameters are easily setup using simple prompts a keyboard.
- **Two Alarms per Pen Optional**
- **Up to Two PV Totalizers Optional**
- **More Sophisticated Control Options**
  Up to two controllers with current relay outputs. On/Off, duplex time proportioning, plus alarm, PID or PD/MR algorithms.
- **HI/LO Pen with Decimal Capability**
- **Support For Additional Thermocouples**
  B, E, W5WW26, NiNiMo, plus 0-100 and 0-200 mV, and 0-10 VDC

Honeywell's DR4300 is ideally suited to applications handled by low-cost analog recorders, with accuracy requirements not exceeding 0.50%, and is appropriate for most high-performance applications requiring accuracy not exceeding 0.25%. Both recorders use 10" charts and are available with one pen or two.

Each DR4300 has built-in diagnostics that check critical recorder operations at startup and provide error detection or messages to alert you to potential faults. In addition, a built-in step pattern test can be run on demand to ensure proper pen and chart drive motor operation.

Configuring the basic model is easy — just select the pre-configured range, actuation, and chart speed.

An optional display provides additional flexibility to select other chart ranges, input actuation, control or alarm parameters, and chart speeds. Upper and lower displays let you view the process variable (PV), the control setpoint, control output, deviation from setpoint, or totalizer.

In the setup mode, digital displays are preempted by prompts and values for entering the configuration data. Indicators light to show which input channel PV is being displayed, which output relay is active, the selected temperature unit, and the controller's mode of operation.

The DR4300 recorder is available with an integral microprocessor-based single-loop PID controller for each pen. A variety of output types — current, time proportional simplex or duplex control, with electromechanical relays, solid-state relays, or open collector outputs are available. Depending on the output type, you can configure the control action as On/Off, PID-A, or PD with manual reset.

Options

- **Alarm Outputs:** Integral alarms activate external equipment.
- **Totalizer:** Totalizes a variable such as a flow signal, on one or both pens. Provides a 6-digit digital display indication of the totalized value with reset capability.
- **Transmitter Power:** 24 VDC output power up to two transmitters.
- **Digital Inputs:** Two digital inputs per pen.

Input Actuations

PV Input		°F	°C
Thermocouple	E	-454 to 1832	-270 to 1000
	T	-420 to 700	-251 to 371
	K	-320 to 2500	-196 to 1371
	E (low)	-200 to 1100	-129 to 593
	T (low)	-200 to 600	-129 to 316
	K (low)	-20 to 1000	-29 to 538
	J	0 to 1600	-18 to 871
	Nicrosil-Nisil	0 to 2372	-18 to 1200
	R, S	0 to 3100	-18 to 1704
	W_5W_{26}	0 to 4200	-18 to 2316
	J (low)	20 to 770	-7 to 410
	Ni-Ni- Moly	32 to 2500	0 to 1371
	B	105 to 3300	41 to 1815
RTD IEC α =0.00385	Pt100Ω	-300 to 900	-184 to 482
	Pt100Ω (low)	-130 to 392	-90 to 200
Linear	0-20, 4-20 mADC; 0-10, 0-100, and 0-200 mVDC; 0-1, 0-2, 0-5, 1-5, and 0-10 VDC		

Ordering Instructions

Make one selection from each table section at the right. Check the restriction letters to ensure availability. A finished catalog number looks like this:
DR4301 - _ _ _ _ - _ _ _ _ _ - _ _ _ _ - _ _ _ _ - _ _ - _ _ _ -E0

Specifications

Input Impedance: *mA DC:* 250Ω; *VDC:* 200KΩ; *RTD:* 13.3KΩ; *Others:* 10 MegΩ.

Span Step Response Time: 7 sec max.; *Reproducibility:* 0.1% of span.

Input Filter: *Without display:* Analog with time constant of 3 seconds and digital with time constant of 1 second; *With display:* Analog with time constant of 3 seconds and digital adjustable 0 to 120 seconds.

Optional Digital Display: Vacuum fluorescent, alphanumeric; Upper 4-digit display dedicated to the process variable or setpoint; 6-digit lower display shows key-selected operating parameters.

Controller Output

On-Off or Time Proportional: One SPDT electromechanical relay. Control action can be set for direct or reverse. *For limit controller:* SPDT electromechanical output. *Relay contact ratings:* Resistive load: 5A @ 120 VAC, 2.5A @ 240 VAC; Inductive load: 50 VA @ 120 VAC or 240 VAC; *Solid-state relay contact rating:* 0.8A @ 120 VAC; *Open collector output contact Rating*: 12 mA @ 24 VDC; *Resolution:* 3.33 mSec.; *Cycle time:* 1 - 120 seconds.

Current Proportional: 21 mA DC max. into a grounded or non-grounded load of ±0 to 600Ω. 4-20 mA output range can be direct or reverse acting. *Resolution:* 11 bits; *Accuracy:* 0.5% full scale.

Time Proportional Duplex: Variation of time proportional for heat/cool applications. Uses two relay contacts with adjustable deadband, split at 50% controller output.

Output Limits: 0 to 100% relay output; -5% to 105% current.

Deadband: -5% to 25% time relay; 0 to 25% on-off duplex.

Hysteresis: 0 to 100% of PV span.

Case: NEMA 3 molded, foamed-Noryl™ with gasketed door.

Pen: Disposable fiber-tip ink cartridge, line length per cartridge more than 1000 ft.; *One pen:* Purple; *Two pens:* Purple and red.

Chart: 10.24" diameter, 4" calibrated width, standard preprinted markings.

Approval Bodies: UL, CSA, FM approved limit controller model.

Options

Alarm Output: Two SPDT electromechanical relays, solid-state or open collector outputs for alarm. *Relay contact ratings:* 5A @ 120 VAC or 2.5A @ 240 VAC resistive; 50 VA @ 120 VAC or 240 VAC inductive.

Tuning: PID tuning parameters of Gain or PB, Rate, Reset.

Sensor Burnout: Selectable for none, upscale, or downscale.

Totalizer: 1 per pen, resettable with keypad or remote (digital) input.

Alarms: Based on PV or deviation, high/low state; *Hysteresis:* 0–100%span.

Digital Inputs: Two digital inputs, dry contact; Use for event recording, reset totalizer, timer, switch to setpoint 2, switch to manual mode.

Model Selection Guide

Description		Catalog Number	Availability				Price
One Pen Recorder	No Display	DR4301	↓				$928.00
	No Display, CE Mark	DR4321	↓				1590.00
	With VFD Display	DR4311			↓		1180.00
	VFD Display, CE Mark	DR4331			↓		1261.00
Two Pen Recorder	No Display	DR4302		↓			1315.00
	No Display, CE Mark	DR4322		↓			1400.00
	With VFD Display	DR4312				↓	1590.00
	VFD Display, CE Mark	DR4332				↓	1664.00
Pen One	None	0 _ _ _	•	•	•	•	0.00
	2 Outputs (Alarm/On-Off Control)	2 _ _ _			a	a	139.00
	1 PID Control	3 _ _ _			a,e	a,e	375.00
	1 PID Control/SP Program/Timer	4 _ _ _			a,e	a,e	578.00
	2 Outputs (Alarm1/Timer)	5 _ _ _			a	a	161.00
	4-20 mA Retransmission Output	A _ _ _			a,h	a,h	204.00
	FM Approved Limit Control	F _ _ _			a	a	161.00
	FM Appr. Limit Control/Timer Out.	G _ _ _			a	a	182.00
Pen Two	None	_ 0 _ _	•	•	•	•	0.00
	2 Outputs (Alarm/On-Off Control)	_ 2 _ _				c	139.00
	1 PID Control	_ 3 _ _				a,c	375.00
	1 PID Output/SP Program/Timer	_ 4 _ _				a,c	578.00
	2 Outputs (Alarm1/Timer)	_ 5 _ _			a	a	161.00
	4-20 mA Retransmission Output	_ A _ _				c,h	204.00
	FM Approved Limit Control	_ F _ _				c	161.00
	FM Appr. Limit Control/Timer Out.	_ G _ _				c	182.00
Output Type Pen 1	None	_ _ 0 _	•	•	•	•	0.00
	Electromechanical Relay	_ _ E _			j	j	0.00
	Solid-State Relay	_ _ S _			j	j	0.00
	Open Collector	_ _ T _			j	j	0.00
Output Type Pen 2	None	_ _ _ 0	•	•	•	•	0.00
	Electromechanical Relay	_ _ _ E				•	0.00
	Solid-State Relay	_ _ _ S				•	0.00
	Open Collector	_ _ _ T				•	0.00
Door Options	Gray Door	G _ _ _ _	•	•	•	•	0.00
	Blue Door	B _ _ _ _	•	•	•	•	0.00
	Gray Door with Keypad	H _ _ _ _			•	•	43.00
	Blue Door with Keypad	C _ _ _ _			•	•	43.00
	Stainless Steel Door	R _ _ _ _	•	•	•	•	396.00
	Standard Latch	_ 0 _ _ _	•	•	•	•	0.00
	Door Lock/Chart Plate Seal	_ K _ _ _	•	•	•	•	107.00
Universal Power, 120/240 VAC, 50/60 Hz		_ _ 1 _ _	•	•	•	•	0.00
Universal Power + 24 VDC Transmitter Power		_ _ 3 _ _	•	•	•	•	161.00
Communications	None	_ _ _ 00	•	•	•	•	0.00
	RS485 Modbus RTU	_ _ _ C0			•	•	295.00
Pen One	No Digital Inputs	00 _ _	•	•	•	•	0.00
	Digital Inputs	D0 _ _			c,g	d,g	80.00
	No Totalizer Function	_ _ 00	•	•	•	•	0.00
	Totalizer	_ _ T0			•	•	187.00
Pen Two	No Digital Inputs	00 _ _	•	•	•	•	0.00
	Digital Inputs	D0 _ _				d,g	80.00
	No Totalizer Function	_ _ 00	•	•	•	•	0.00
	Totalizer	_ _ T0			•	•	187.00
Approvals/ Certificates	No Approvals	0 _	•	•	•	•	0.00
	UL Listing	U _	•	•	•	•	27.00
	CSA Certification	C _	•	•	•	•	27.00
	UL and CSA Approval	B _	•	•	•	•	48.00
	No Certificates	_ 0	•	•	•	•	0.00
	Cert. of Conformance (F3391)	_ 1	•	•	•	•	32.00
	Cert. of Calibration (F3399)	_ 2	f	f	f	f	295.00
	Cert. Conformance/Calibration	_3	f	f	f	f	327.00
Manual	Printed User Manual (English)	-E0	•	•	•	•	32.00

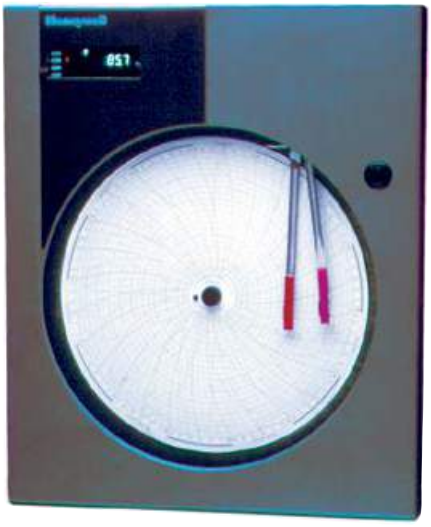
Restrictions

a Requires Pen 1 output
c Requires Pen 2 output (_ _ _ E, _ _ _ S, or _ _ _ T)
e PID control: Current Out + 2 Alarm Out. For On/Off or time proportional control, only one output can be an alarm. Time proportional duplex requires both outputs.
f Customer must supply input actuation and range for each input.
g Digital inputs only available with Pen 1 or Pen 2 outputs.
h 4-20 mA retransmission output includes 2 outputs per pen for alarms.
j Not available on FM-Approved units (Pen 1, Pen 2: F _ _ _, G _ _ _, _ F _ _, _ G _ _)

DR4500 Classic 12" Circular Chart Recorder

New Features

- Auxiliary Output
- Mass Flow and BTU Calculation
- 2 Loops of Control
- Improved Setpoint Programming
- Decimal Point Scaling on Charts
- Works with RS-485 to Ethernet bridge



DR4500 Classic: The Benchmark for 12" Circular Chart Recorders

An Instant Classic...

Honeywell's DR4500 Classic 12" circular chart recorder is ideal for applications in food, pharmaceuticals, environmental testing, and metal working — where measured variables must be documented on a single chart and retained to meet industry requirements.

With a Unique Lineup of Features . . .

Extreme accuracy: Typically less than ±1°F for the usable thermocouple ranges; meets the MIL requirement for type T and Pt100Ω RTD; ±0.1% or better for voltage ranges.

Universal inputs: Accepts all thermocouples (Types B, E, J, K, N, R, S, T, W_5W_{26}; RTDs (Pt100Ω or Pt500Ω); relative humidity (0–100%); voltage/current (0–10 or 10–50 mV, 0–5 or 0–10V, 4–20mA).

Easy setup: English prompts and menus walk you through configuration. Simplifies setup and reduces risk of configuration errors.

Field configurable: Chart ranges can be set and reset in the field simply by inputting on the keyboard.

Standard charts: Uses a standard 12" chart to record process variables; chart ranges and speeds are keyboard-selectable. Chart speeds vary from 1 to 733 hours per revolution. 5,000 different charts available.

Entire process at a glance: Digital displays are easy to read at a distance or in dim light. Selectable displays include PV indication, SP, deviation, alarms, control mode (auto/manual), temperature units (°F/°C), and setpoint program (run/hold).

It's Your Option

Expand the functionality of your DR4500 Classic with these options:

- **Control outputs:** Time, current or position proportioning, three-position step control, simplex or duplex with mixed output forms, fully field-selectable to provide the utmost versatility.
- **Control algorithms:** Configurable for On-Off, PID-A, PID-B, or PD with manual reset; 1 or 2 control loops available.
- **Alarms:** Ties soft alarms to up to 6 integral SPST relays.
- **Door lock, stainless steel door.**
- **Flow totalization:** Expands your recorder's operation to meet special application requirements.

Operator Interface

Two digital displays present the process variable (PV), controller setpoint, output, deviation from reference input, dry bulb temperature, totalization value, or engineering units as desired.

In configuration mode, digital displays show English prompts and values for entering data. Indicators light to show alarm condition, which channel PV is on display, remote setpoint, which output relay is on, selected temperature unit, and operating mode.

The deviation bargraph shows if the PV is at, above, or below your desired setpoint. The keypad also serves as an integral automatic/manual station to provide bumpless transfer for controllers. On two-pen models, the HOLD key allows continuous display of one-channel process variable while the recording action proceeds normally.

Microprocessor-Controlled Recording

Both the chart and pen are driven by microprocessor-controlled stepper motors, for precise, maintenance-free operation. Since chart speed is configurable, you can easily alter it through the keypad — no gear changing or additional motors required. The microprocessor uses the chart range data and input data to determine proper pen position.

Input Processing

Input can be one of many standard low-level electrical signals. For two-pen models, a relative humidity (wet/dry bulb) input is available using Pt100Ω bulbs. Each input is sampled three times per second.

Set the input type and range for hassle-free changes in the field. Easily expand or compress ranges within limits to meet your specific need. You can also select upscale or downscale sensor break protection.

A digital filter with configurable time constants lets you apply input signal smoothing. All nonlinear inputs are linearized using lookup tables. This allows mixed actuations for two-pen models to record on a linear chart. Bypass linearization to record on a nonlinear chart.

The integral 24 VDC power supply and 4-20 mA input configuration allows direct operation with up to two transmitters without the need for any additional/external transmitter power supply.

To totalize a variable, such as a flow signal, you select the input and preset the (8-digit) display scaling factor, eliminating the need for additional integration hardware. You can reset the totalizer with digital input from a remote site. And, set a low-flow cutoff in percent of range.

Digital Controller

The DR4500 includes an integral microprocessor-based, single-loop PID controller. Choose from a variety of output types, including duplex variations for heat-cool applications, as the output for your final control element. Depending on the type, you can set control action as on-off, PID-A, PID-B, PD with manual reset, or three-position step control.

All DR4500 series recorders include self-diagnostics that check critical operations and provide error messages to alert you to detected faults. At start-up, one diagnostic is run on selected circuitry. Key tests let you start diagnostics on demand to check the keypad and displays.

Honeywell

Specifications

Sampling Rate: 3 times per second.

Input Filter: Single pole low-pass section (software), selectable time constants (off to 120 sec.)

Digital Displays: Vacuum fluorescent, alphanumeric displays. 6-digit display dedicated to PV. Alternate information displayed at setup. 8-digit display shows key selected operating parameters and provides guidance during setup.

Indicators: Channel PV display (Ch 1, 2); Alarm status (Alm 1, 2); Control output (Out 1, 2); Remote setpoint (RSP) for Out 1; Temperature (°F/°C) or engineering unit; Control mode (Auto/Man).

Chart Speed: 8 hrs, 24 hrs, 7 days, or selectable 6–744 hrs/rev.

Case: NEMA 3, molded, foam Noryl™, gasketed door. NEMA4X SS door optional

Pen: Disposable fiber-tip ink cartridge. Line length: >1000 ft./cartridge. One pen: Purple, Two pens: Purple and red.

Chart: 12" diameter, standard markings, 4.62" calibrated width.

Approvals: UL approved depending on model. FM approved for Class I, Div. 2, Groups A-D areas, depending on model. See Model Selection Guide for restrictions.

Alarm Output: Two SPST electromechanical relays. Relay contact rating: 1A @ 120 VAC, 0.5A @ 240 VAC resistive.

Digital Input: 20 VDC source for external dry contact or isolated solid-state contacts. Selects one configured input.

Totalizers: One or two, depending on model. 8-digit totals with multiplier on digital display.

Auxiliary Linear Output (Option): Can be used as second current output for current duplex modes. 21 mA DC into ±0-1000Ω grounded or non-grounded load. Output range can be set between 0 and 21 mA, direct or reverse action. Can be configured for any one of 10 parameters. *Resolution:* 12 bits over 0-21 mA; *Accuracy:* 0.2% full scale; *Temperature stability:* 0.03% full scale per °C.

Controller Output Types

On/Off or Time Proportional: One SPST electromechanical relay, direct or reverse action, N/O or N/C contact selectable.

On/Off or Time Proportional Duplex, 3-Position Step Control: Two SPST electromechanical relays, direct or reverse action, N/O or N/C contact selectable.

Current Proportional: 20 mADC max. into ±0–1000Ω grounded or non-grounded load. Output range can be set between 4 and 20 mA, direct or reverse action. 10 bit resolution. 0.5% full scale accuracy.

Position Proportional: Two SPST electromechanical relays operate motor with 100Ω to 1000Ω slidewire.

Current/Time or Time/Current Duplex: Variation of time proportional duplex for heat/cool use. Time proportional output SPST electromechanical relay (4.4 mSec resolution, 1-120 sec. cycle time) Rated 5A@120 VAC or 2.5A @240 VAC resistive, 50VA @ 120/240 VAC inductive. Current proportional output is 4-20 mA signal fed into ±0–1000Ω grounded or non-grounded load, operational over 50% or 100% range. 10 bit resolution, 0.5% full-scale accuracy.

Protect your instrumentation!

Need electrical surge protection? Phoenix Contact offers a full line of electrical surge protection for AC- and DC-powered controllers, recorders, and loop power supplies. Call for pricing.

Ordering Instructions

Make one selection from each table section below. Check the restriction letters to be sure that the unit you have selected is available. A finished catalog number looks like this:

DR45A1 - _ _ _ _ - _ _ - _ 0 _ - _ - _ _ _ _ _ E - 0

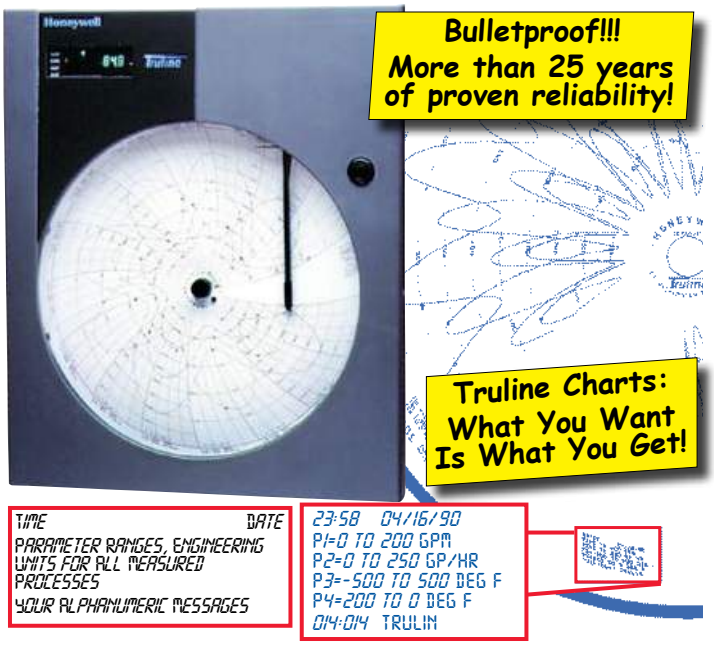
Model Selection Guide

Description		Catalog Number	Availability ↓	Availability ↓	Price
Single Pen DR4500 12" Classic Recorder		DR45A1-			$1653.00
Dual Pen DR4500 12" Classic Recorder		DR45A2-			2142.00
Channel 1 Input	T/C, RTD, mV, 0-5 VDC, 4-20 mA, Radiamatic	1 _ _ _ -	•	•	0.00
	0-10 VDC	3 _ _ _ -	•	•	40.00
Channel 2 Input	None	_ 000 -	•		0.00
	T/C, RTD, mV, 0-5 VDC, 4-20 mA, Radiamatic	_ 100 -		•	0.00
	0-10 VDC	_ 300 -		•	40.00
Channel 1 Out	None	0 _ -	•	•	0.00
	Control Output #1	1 _ -		•	493.00
Channel 2 Out	None	_ 0 -	•	•	0.00
	Control Output #2	_ 1 -		•	493.00
External Interface	None	0 _ _ -	•	•	0.00
	Auxiliary 4-20 mA Output	1 _ _ -	•	•	204.00
	RS485 Modbus RTU Communication	3 _ _ -	•	•	289.00
	RS485 Modbus RTU + 4-20 Aux. Output	4 _ _ -	•	•	428.00
Pen	Standard Fiber-Tip (Purple, Red)	_ 0 _ -	•	•	0.00
Alarms	None	_ _ 0-	•	•	0.00
	2 Alarms/2 Digital Inputs	_ _ 1-	•	•	193.00
	1 Alarm/1 Timer Output/2 Digital Input	_ _ 4-	•	•	209.00
Totalization	None	0-	•	•	0.00
	Totalization on Input 1	A-	•	•	268.00
	Totalization on Inputs 1 and 2	E-		•	471.00
Options	Gray Door with Glass Window	0 _ _ _ _ _	•	•	0.00
	Gray Door with Acrylic Window	1 _ _ _ _ _	•	•	48.00
	Blue Door with Glass Window	5 _ _ _ _ _	•	•	0.00
	Blue Door with Acrylic Window	6 _ _ _ _ _	•	•	48.00
	Stainless Steel Door, Glass Window	2 _ _ _ _ _	•	•	477.00
	Stainless Steel Door, Acrylic Window	3 _ _ _ _ _	•	•	477.00
	NEMA4X Door with Glass Window	P _ _ _ _ _	•	•	268.00
	NEMA4X Door with Acrylic Window	R _ _ _ _ _	•	•	268.00
	Standard Door Latch, No Lock	_0 _ _ _ _	d	d	0.00
	Door Lock	_K _ _ _ _	•	•	43.00
	Keyed Latch	_A _ _ _ _	•	•	43.00
	None	_ _ 0 _ _ _	•	•	0.00
	Chart Illumination	_ _ N _ _ _	c	c	118.00
	None	_ _ _ 0 _ _	•	•	0.00
	CE Approved	_ _ _ K _ _	•	•	70.00
	CSA Certification, CE Approved	_ _ _ L _ _	•	•	86.00
	CE Mark, FM Approval	_ _ _ M _ _	•	•	86.00
	CE, UL, FM, and CSA Approved	_ _ _ N _ _	•	•	96.00
	UL Listing, CSA Approval	_ _ _ P _ _	•	•	32.00
	FM Approved	_ _ _ R _ _	•	•	32.00
	UL Listing, FM and CSA Approval	_ _ _ U _ _	•	•	64.00
	None	_ _ _ _ 0 _	•	•	0.00
	Customer ID Tag (30 Character Max.)	_ _ _ _ T _	•	•	43.00
	F3391 Certificate of Performance	_ _ _ _ B _	•	•	32.00
	F3399 Custom Calibration/Test Report	_ _ _ _ C _	•	•	375.00
	Certificate of Conformance and ID Tag	_ _ _ _ D _	•	•	75.00
	Customer Calibration and ID Tag	_ _ _ _ E _	•	•	418.00
	Printed User's Manual (English)	_ _ _ _ _ E	•	•	32.00
Pen Refills	Purple, Position #1 (Pack of 6)	82-39-0306-06	•	•	28.36
	Red, Position #2 (Pack of 6)	82-39-0202-06	•	•	28.36

c Not available with CE approval

d Not available with NEMA4X Door

DR4500 Truline 12" Circular Chart Recorder



Standard Features

- **Extreme Accuracy** — Typically less than ±1°F for usable thermocouple ranges; meets MIL spec requirement for Type T and Pt100Ω RTD; ±0.1% or better for voltage ranges.
- **Universal Inputs** — Standard low-level electrical input signals are configurable for hassle-free changes in the field. Easily expand or compress ranges within their limits to meet your specific need. Mixed input actuations can be displayed on the same linear chart. Accepts all thermocouples; RTDs (Pt100 or Pt500Ω), relative humidity (0-100%); and voltage/current.
- **Transmitter Friendly** — An integral 24 VDC power supply and a 4-20 mA input allow operation of up to two transmitters.
- **Easy Setup** — English prompts and menus walk you through configuration, to simplify setup and reduce risk of improper programming. *All configuration data are stored in nonvolatile memory for safekeeping in the event of a power failure.*
- **Operator Interface** — Chart ranges can be set and reset in the field simply by keyboard input. The keyboard serves as an integral automatic/manual station to provide bumpless transfer for controllers.
- **Data Displayed Brilliantly** — Digital displays are read easily at a distance or in dim light and display all critical information.
- **At-a-Glance Processes** — Select displays for process variable, setpoint, deviation, alarms, automatic or manual control, temperature units (°F, °C, or engineering), and setpoint program (run/hold).
- **Time/Date** — Integral real-time clock provides accurate timing for the recorder's time and date printing. A 10-year-life battery backup assures correct timing even when power fails.
- **Flow Totalizer** — An optional totalizer eliminates the need for additional integration hardware, including a mechanical counter. Pre-programmed software calculates flow totalization.
- **Self-Diagnostics** — Self-diagnostics check critical operations and provide error messages that alert you to detected faults. Tests are performed on power-up or can be run on demand.

Enhanced Features

Options

- **Control Outputs** — Up to 2 single-loop PID digital controllers are available, so you can program the exact control actuation for your process. Field-selectable algorithms include on/off, time, current, and position-proportioning, and duplex variations for heat-cool. Optional Autotune selects optimum tuning parameters.
- **Digital Input** — Switch from automatic to manual control mode, from direct to reverse controller action, reset the limit controller, or mark an event from remote location through two dry contact closures.
- **Alarm Output** — Ties soft alarms to two internal SPST relays to activate external equipment.
- **Chart Illumination** — Improves readability in low-light areas.
- **Setpoint Ramp/Soak Programming** — Lets you program and store 6 ramp and 6 soak segments. Run or hold of program is keyboard or remote switch selectable.

FDA Milk Safety Branch Reports...
Truline AH/AS/AP models comply with 3A sanitary standards for use as pasteurization flow recorder/controllers, and meet the Grade "A" Pasteurized Milk Ordinance!

HTST Pasteurization Enhancements

Honeywell Truline can handle pasteurization processes based on flow and temperature. DR45AH High Temperature Short Time (HTST) recorders monitor, control, and divert product based on temperature. DR45AP pasteurization flow recorders monitor, control, and divert product based on flow rates.

The digital reference temperature measurement feature prints the actual Divert Temperature and Forward Flow Temperature beside the Divert Pen trace, eliminating user error. Since this feature is built into the DR4500, it saves on panel space and installation costs.

The DR45AP pasteurization flow recorder can also perform the functions of a differential pressure switch, controlling the system back pressure to ensure that proper pressures are maintained in the pasteurizer. No other single recorder/controller provides the functions and features included in Honeywell's DR45AH HTST and DR45AP pasteurization recorders.

To order the HTST dairy recorder, choose model DR45AH-__. For the pasteurization flow recorder, choose model DR45AP__.

Honeywell

The industry's most popular circular chart recorder... prints its own chart reliably for 25 years!

Specifications

Chart: 12" diameter chart. Thermal sensitive paper.

Stylus Life: Capable of printing one chart per day for ten years.

Minimum Input Span: Fully configurable within limits of selected range.

Input Impedance: *RTD:* 100Ω per lead max.

Sampling Rate: *2 Inputs:* 3 times/sec; *3 or 4 Inputs:* Once every 2/3 sec.

Span Step Response Time: 6 seconds max. without filtering.

Input Filter: Single pole low-pass, selectable time constants off to 120 sec.

Indicators: Channel PV display (CH 1, 2, 3, or 4); Alarm status (ALM 1,2); Controller output (OUT 1 or 2); Remote setpoint (RSP); Temperature unit (°F or °C) or Engineering units; Controller mode (A or MAN).

Digital Indication Accuracy: 1 digit.

Digital Displays: Vacuum fluorescent, alphanumeric 6-digit display dedicated to process variable. Alternate information displayed at setup. 8-digit display shows key operating parameters. Also provides configuration guidance.

Deviation Bargraph: 21-segment, color-coded graph: (Green = On Control; Red = Deviation to ±10% PV).

Transmitter Supply Voltage: 22–26 VDC at input terminal (1.2 watts).

Case: NEMA 3 rated. Molded, foamed-Noryl™ with gasketed door. Stainless steel or NEMA4X available.

Approval Bodies: CSA and FM approved.

Temperature Range: *Ambient:* 58°–131°F; *Extreme:* 32°–131°F.

Recorder-Configurable Parameters

Recorder: *Time:* 0–23 Hrs, 1–59 Min.; *Date:* 1–12 Mo.; 1–31 Day; 4-Digit Year

Chart: *Speed:* 8 hours, 24 hours, 7 days, or selectable in (6–744) hours per revolution; *Continue:* Yes/No (Beyond 360° Rotation); *Chart Name:* Up to six characters; *Header:* Yes/No

Pen 1 (Same for Pens 2–4): *Pen:* Disable or enable; *Pen Input:* Input 1, PV, Output, or SP; *Chart 1 High/Low Range Values:* -999.0 to 9999; *Major/ Minor Chart Divisions:* 2 to 10; *Units:* Up to 5 characters.

Algorithm: *Input 2, 3 and 4:* Disable or Enable; *Relative Humidity:* Yes or No; *Atmospheric Pressure:* 590–800 mmHg (RH Comp.); *Deviation:* None, Setpoint, or Channel 1; *Deviation Setpoint:* -999.0 to 9999.

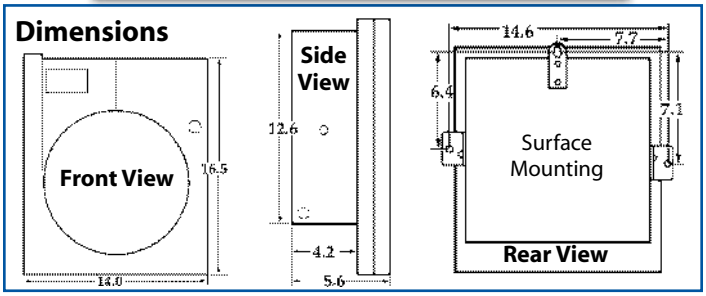
Input 1 (Same for Pens 2–4, Except for RF): *Decimal Place:* None, 1, 2, 3; One decimal place for nonlinear inputs; *Unit Type:* °F, °C, or engineering units; *Transmitter Characterization:* All nonlinear input types; *High/Low Range, Input Compensation:* -999.0 to 9999; *Filter 1:* 0 to 120 seconds; *Sensor Break Protection:* None, Upscale or Downscale; *Emissivity:* 0.01 to 1.00.

Input Actuations

PV Input		°F	°C
Thermocouples	B*	105 to 3300	41 to 1815
	E*	-454 to 1832	-270 to 1000
	E (low)	-200 to 1100	-133 to 593
	J	0 to 1600	-18 to 871
	J (low)	20 to 770	-7 to 410
	K	-320 to 2500	-196 to 1371
	K (low)	-20 to 1000	-29 to 538
	NiNiMoly (N)	32 to 2500	0 to 1371
	NiNiMoly (N) (low)	32 to 1260	0 to 682
	R, S	0 to 3100	-18 to 1704
	T	-300 to 700	-184 to 371
	T (low)	-200 to 600	-133 to 316
	W_5W_{26}	0 to 4200	-18 to 2316
	W_5W_{26} (low)	0 to 2240	-18 to 1227
RTD *(IEC α=0.00385)*	100Ω, 500Ω	-300 to 900	-184 to 482
Linear	4 to 20mA; 0-10 mV, 10-50 mV; 1-5V, 0-10V		

* Can require field calibration to achieve rated accuracy below 1,000°F for Type B thermocouple and below -200°F for Type E thermocouple.

Dimensions



Alarms (Indication): *Setpoint Value:* Engineering Units; *Setpoint Type:* None, Inputs 1-4, PV, Deviation, Output, Rate of Change, or Shed; *Setpoint State:* High or Low; *Hysteresis:* 0.0 to 5.0% of span.

Total 1 (Same for 2, 3, and 4): *Total:* Read only; *Reset Total:* Yes or No; *Total 1:* Disable or Enable; *Rate:* Minute, hour, or day; *Scaling Factor:* 1, 10, 100, 1000, 10,000, 100,000, or 1,000,000.

Options

Alarm Output: 2, 4, or 6 relays available. First two are SPST electromechanical relays rated 1A for 120 VAC and 0.5A for 240 VAC resistive. Relays 3-6 rated 5A for 240 VAC resistive.

Digital Input: 20 VDC source for external dry contact or isolated solid-state contacts. Selects one configured input.

Communications: 300, 600, 1200, 2400, 4800 baud; *Parity:* Odd or even; *Characteristics:* 4000' max. length; Two wire, multidrop.

Controller-Configurable Parameters

Controller Operation: Manual; Automatic with local or remote setpoint.

Tuning: *Gain or Proportional Band:* 0.1 to 999.9; *Rate:* 0.08 to 10 min.; *Reset:* 0.02 to 50 min./ repeat or repeats/ min.; *Manual Reset:* ±100% output; *Cycle Time:* 1–120 sec.; *Lockout:* None to maximum.

Autotune: *Step Size:* -105% to 105% of output.

Algorithm: *Control:* On-Off, PID, Proportional Band + Manual Reset, 3-Position Step; *Output:* Current-Proportional Simplex or Duplex, Position-Proportional, Time-Proportional, Current Relay Duplex (Heat/Cool).

Control: *PID Tuning Sets:* 1 or 2; *Setpoint Source:* Local, Remote, or Local 2; *Ratio (IN2):* -20.00 to 20.00; *Bias:* -999 to 9999; *Setpoint Tracking:* Yes/No; *Power-up Mode Recall:* Manual, Auto using local or remote setpoint; *High/Low Setpoint Limits:* 0–100% span; *Action:* Direct or Reverse; *High/Low Output Limits, Dropoff Value:* -5% to 105% output; *Deadband:* -5% to 25.0%; *Output Hysteresis:* 0–5% span; *Failsafe Output:* Within limits; *Proportional Band Units:* Proportional Band (%) or Gain; *Reset Units:* Repeats/ Min. or Mins./Repeat.

Universal Controller Output Option

On/Off or Time Proportional: SPST electromechanical relay. Normally open (N/O) or normally closed (N/C) contacts selectable.

On/Off Duplex, 3 Position Step, or Time Proportional Duplex: 2 SPST electromechanical relays. N/O or N/C contacts selectable.

Current Proportional: 21mADC max. into a grounded or non-grounded load of ±0-1000Ω. 4–20 mA output range, 0.5% full-scale accuracy.

Position Proportional: 2 SPST relays run motor with 100–1000Ω slidewire.

Current/Time Proportional: For heat/cool applications. 4-20 mA signal fed into a grounded load of ±0-1000Ω, operating over 50%–100% range, 0.5% full-scale accuracy; SPST electromechanical relay for time; 5A @ 120 VAC, 2.5A @ 240 VAC resistive, and 50 VA @ 120/240 VAC inductive contact ratings.

Limit Control: FM-approved. Latching relay is de-energized when PV goes above or below a preset setpoint. Alarm indicator lights when relay is latched. Resets through a key on the front of the recorder or an external switch.

See next page for Model Selection Guide.

DR4500 Truline 12" Circular Chart Recorder

Honeywell

Ordering Instructions

Make one selection from each table section. Check the availability column to be sure that the unit you need is available. A finished catalog number looks like this: **DR45AT - _ _ _ _ - _ _ - _ 0 _ - _ - _ _ _ _ _ E - _ 0**

Model Selection Guide (Part 1)

			Catalog Number	Availability					Price
Truline — Standard Model			DR45AT	↓					$1912.00
Truline — With 6 Relays			DR45AR		↓				1944.00
Truline — Flow Recorder			DR45AW			↓			1944.00
Truline — HTST Dairy Recorder*			DR45AH				↓		3937.00
Truline — Pasteurization Flow Recorder			DR45AP					↓	3542.00
Input Type	Ch. 1	T/C, RTD, mV, 0-5VDC, 4-20 mADC, Radiamatic	1 _ _ _	•	c	•	•	•	0.00
		0-10 VDC	3 _ _ _	•	c	•			40.00
	Ch. 2	None	_ 0 _ _	•	•	•		•	0.00
		T/C, RTD, mV, 0-5VDC, 4-20 mADC, Radiamatic	_ 1 _ _	•	c	•	f	•	386.00
		0-10 VDC	_ 3 _ _	•	c	•			420.00
	Ch. 3	None	_ _ 0 _	•	•	•	•	•	0.00
		T/C, RTD, mV, 0-5VDC, 4-20 mADC, Radiamatic	_ _ 1 _	a	c	a	a	a	386.00
		0-10 VDC	_ _ 3 _	a	c	a			420.00
	Ch. 4	None	_ _ _ 0	•	•	•	•	•	0.00
		T/C, RTD, mV, 0-5VDC, 4-20 mADC, Radiamatic	_ _ _ 1	b	c	b	b	b	386.00
		0-10 VDC	_ _ _ 3	b	c	b			420.00
General Control Outputs*	None		0 _	•	•	•			0.00
	Control Output 1		1 _				f	f	493.00
	Control Output 1, SP Program		4 _	•	d				493.00
	Pulse Output — Non-Control		5 _			•			493.00
	None		_ 0	•	•	•	•	•	0.00
	Control Output 2		_ 1					g	493.00
	Control Output 2, SP Program		_ 4	h	u				493.00

**HTST Model: All options under restrictions must be selected except Channel 3, which is optional. These selections are all included in base price except for Channel 3.*

Model Selection Guide (Part 2)

Description	Selection	Catalog Number	Availability AT	AR	AW	AH	AP	Price
DR45 Truline Model								
External Interface	None	0 _ _	•	•	•	•	•	$0.00
	Auxiliary 4-20 mA Output	1 _ _	•	•	•	•	•	204.00
	RS485 Modbus Communication	3 _ _	•	•	•			289.00
	RS485 Modbus Communication and 4-20 mA Auxiliary Output	4 _ _	•	•	•			428.00
	Truline High-Speed Pen	_ 0 _	•	•	•	•	•	0.00
	Abrasion-Resistant Pen	_ 1 _	e	e	e	e	e	51.00
Software Options	None	_ _ 0	•	•	•	•	•	0.00
	2 Alarm Outputs/2 Digital Inputs	_ _ 1	•	•	•			193.00
	4 Alarm Outputs/2 Digital Inputs	_ _ 2		v				193.00
	6 Alarm Outputs/2 Digital Inputs	_ _ 3		w				0.00
	1 Alarm/Timer Out/2 Digital Inputs	_ _ 4	•	•	•			209.00
	None	0	•	•	•	•	•	0.00
	Totalization (Input 1)	A	•	•	•			268.00
	Totalization (Inputs 1, 2)	E	•	•	•			471.00
	Totalization (Inputs 1-4)	H			•			589.00
	F_O Sterilization Calculation	F		•				171.00
	Math	B	•	•	•			171.00
	Totalization (Input 1), Math	K	•					402.00
	Totalization (Inputs 1,2), Math	L	•					600.00
	Totalization (Inputs 1-4), Math	M			•			718.00
Enclosure and Design Options								
Gray Door with Glass Window		0 _ _ _ _ _	•	•	•			0.00
Gray Door with Acrylic Window		1 _ _ _ _ _	•	•	•			48.00
Blue Door with Glass Window		5 _ _ _ _ _	•	•	•			0.00
Blue Door with Acrylic Window		6 _ _ _ _ _	•	•	•			48.00
Stainless Steel Door w/ Acrylic Window		3 _ _ _ _ _	•	•	•			477.00
NEMA4X Door with Glass Window		P _ _ _ _ _	•	•	•			268.00
NEMA4X Door with Acrylic Window		R _ _ _ _ _	•	•	•			268.00
NEMA4X Door HTST with Divert Lights		S _ _ _ _ _				•	•	0.00
None		_ 0 _ _ _	•	•	•	•	•	0.00
Keyed latch		_ A _ _ _	•	•	•	•	•	43.00
Door lock		_ K _ _ _	•	•	•			43.00
None		_ _ 0 _ _	•	•	•	•	•	0.00
Configuration lockout/chart plate seal		_ _ L _ _	•					118.00
Lockout/chart plate seal/Illumination		_ _ M _ _	•					236.00
Chart illumination		_ _ N _ _	•	•	•			118.00
No approvals		_ _ _ 0 _ _	•	•	•	•		0.00
CE mark		_ _ _ K _ _	•	•	•			70.00
CE mark, UL listing, CSA approval		_ _ _ L _ _	•	•	•			86.00
CE mark, FM approval		_ _ _ M _ _	•	•	•			86.00
CE, UL, FM, CSA approval		_ _ _ N _ _	•	•	•			96.00
UL listing		_ _ _ P _ _	•	•	•	•	•	32.00
FM approval *(Cl 1, Div 2, Gr A-D)*		_ _ _ R _ _	•	•	•			32.00
UL, FM, CSA approval		_ _ _ U _ _	•	•	•			64.00
None		_ _ _ _ 0 _	•	•	•	•	•	0.00
Customer ID Tags (30 Character Max)		_ _ _ _ T _	•	•	•	•	•	43.00
Certificate of Conformance		_ _ _ _ B _	•	•	•	•	•	32.00
Customer Calibration/Test Report		_ _ _ _ C _	z	z	z	z	z	375.00
Certificate of Conformance, ID Tag		_ _ _ _ D _	•	•	•	•	•	75.00
Customer Calibration and ID Tag		_ _ _ _ E _	z	z	z	z	z	418.00
Product Configuration		_ _ _ _ _ 1	x	x	x	x	x	214.00
Printed User's Manual (English)		_ _ _ _ _ E	•	•	•	•	•	32.00

Replacement Pen Arm (Standard)
Replacement Abrasion-Resistant Pen
Replacement Charts

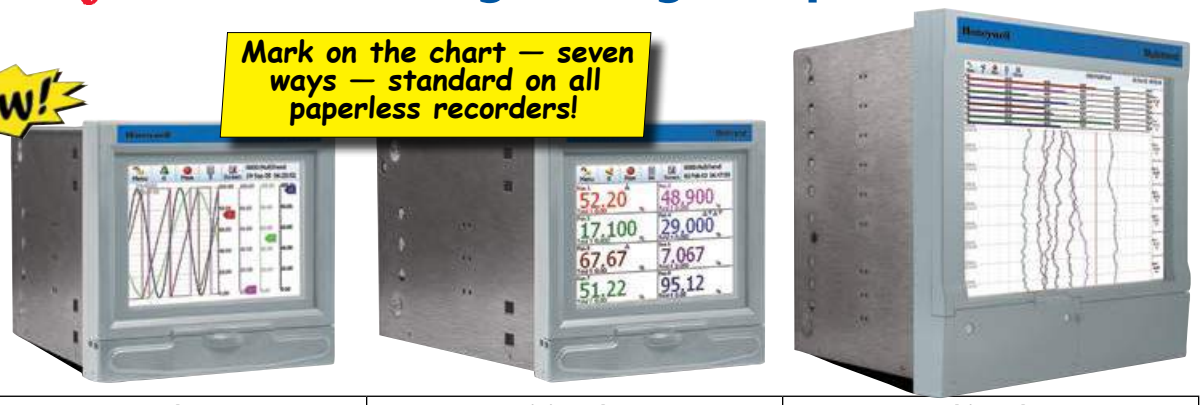
Restrictions

a Not available without ordering channel 2.
b Not available without ordering channel 3.
c Not for T/C Types B, N, R, or W. Includes calibration for 200Ω Burns Bulb.
d Controller can be set only for 4–20 mA output.
e Available only when chart rotation is between 24 and 744 hours.
f Option price already included in base price.
g Available only with 2 inputs, Control output #1, Option 6_. 4-20 mA output.
h Available only with 2 inputs, Control output #1, Option 4_.
u Available only with Modbus communications/4-20 mA auxiliary output, 4-20 mA control output and channel 1 and 2 inputs.
v Available only with Control output #1.
w Available only with Control outputs #1 and 2.
x Customer must supply configuration worksheet.
z Customer must supply Input Actuation Type and Range for each input.

Honeywell Choosing the Right Paperless Recorder

New!

Mark on the chart — seven ways — standard on all paperless recorders!



	eZtrend GR	Minitrend GR	Multitrend GR
Display	5.7″ Color LCD	5.7″ Color LCD	12.1″ Color LCD
Inputs	Up to 12 Input Channels	Up to 16 Input Channels	Up to 48 Input Channels
Scan Time	100 to 500 mSec	100 mSec Standard, 20 mSec Linear Input Optional	
Discrete I/O	Up to 8	Up to 16	Up to 48
Auxiliary Output	None	Up to 4	Up to 8
Data Storage	1–4 GB Internal, 8GB External SD Card		
Communications	Ethernet Standard, OPC Server Optional	Ethernet, RS485 Standard, OPC Server Optional	
Displays	Standard Screens Only	Customizable	Customizable
Data Security	21 CFR Part 11 Password Protection, Extended Security System		
Networking	Ethernet, Web Ready		
Analysis Software	TrendManager Pro (See page 256)		
Event Recording	Event Markers		
Instrument Depth	7.87″	7.87″	9.72″
Approvals	CE UL SP	CE UL SP FM APPROVED	CE UL SP FM APPROVED
Pricing Starts At	$1803.00	$2730.00	$4001.00
See Page	248–249	250–255	250–255

What makes Trendview different?

Fast Input Sampling Rates!

Universal input card's 20 mS scan rate per pen lets you direct what's happening in your process. Enable fuzzy logging data storage and you'll have data compression surpassing any other available method.

What is Fuzzy Logging?

A secure storage algorithm delivers a 10:1 compression ratio, for 10 times more stored data, 10 times longer disk duration, and increased resolution on fast-changing process signals. It includes a self-teaching function to store data at a variable rate that matches the monitored process.

How Secure is the Data?

Process data and configuration files are encrypted, encoded, and set up with checksums to prevent undetected changes. And, because configuration files are stored with the process data, you'll know exactly how the recorder was configured and when data was recorded.

Batch Recording

- Automatically graphs batch data
- Batch number data identification
- Purpose-designed screens for easy use
- 32 event recipes

Continuous Recording

- Data sampling — up to 50 readings/second
- Detailed event reports
- Networkable via RS485 or Ethernet
- Fuzzy Logging™ data compression technique

Regulatory Recording

- Redundant data storage
- Validates to regulatory requirements
- Meets FDA guidelines for electronic data submittals
- Event configuration audit trail
- Secure data encryption

eZtrend GR 5.7" Display Video Recorder

Honeywell

Features

- 5.7" digital color active TFT LCD with 320 x 240 pixel QVGA resolution
- Industrial rugged touchscreen with rapid navigation, clear intuitive operation
- Up to 12 analog inputs; up to 8 DI/DO; 4 pulse inputs optional via digital I/O
- 10/100 Ethernet DHCP, OPC, FTP, TCP/IP, web and E-mail; RS485 Modbus option
- Front USB port standard for keyboard, mouse, or storage drive
- On-board solid state flash memory, 256 MB or 740 MB; Removable USB storage
- 21CFR Part 11 compliant password protection, ESS extended security system
- Remote access advanced software data analysis at your PC, plus remote viewing via web browser
- Independent chart and logging speeds
- Rapid review and replay of data at recorder
- CS, CSA, UL approvals
- NEMA 4X/IP66 enclosure option

Honeywell eZtrend GR is a cost-effective general service DIN-size electronic data recorder that easily replaces 100mm paper strip chart recorder, providing the ability to capture continuous and batch data electronically. The data is recorded in secure digital format, eliminating interpolation errors that can arise from transposing the data from a chart to a spreadsheet for necessary analysis. The paperless solution also provides a graphical display, unlike paper recorders, which generally use either scales or digital formats for displaying process variables.

eZtrend GR reliably records electronic data from directly-connected sensors or transmitters, and displays it in a format that can be used for documentation of process conditions and process improvement. The GR's touchscreen interface makes configuration and operation actions fast and simple. Graphical icons and menu structure help the user easily understand how to view the various screens and review the data and other process information.

The Ethernet feature, and compatible TrendServer Pro software provides plant-wide connectivity of recorders, so those who need to see the recorder's data can get easy access to it. And the ability to have data in electronic format saves significant time and expense. It's fast and easy to analyze the electronic data using the compatible software tools to create custom reports.

Above all, paperless recorders eliminate the cost of consumables, like pens and paper, and the associated problems with tearing, smudging, running out of ink or paper mid-batch, paper jams, and the costs associated with storing and retrieving the paper data when it's needed.

Honeywell X-Series recorders help users with unique data acquisition problems. Features like AMS2750 Process Recording provide documentation to show compliance to process specifications when being audited by NADCAP. An Installation Qualification/Operational Qualification (IQ/OQ) protocol function helps pharmaceutical users with their 21 CFR Part 11 process validation needs.

The GR's 5" color active matrix TFT display with intuitive bar charts, digital values, and trend displays, makes it easy to interpret process data and take action. The heavy duty durable touchscreen provides easy data entry and quick navigation through the menus. A complete contextual help system can be accessed on the recorder screen.

The Ethernet connection, with support for a variety of protocols, provides unlimited connectivity to your local area network. DHCP automatically acquires an IP address for network communications. SNTP synchronizes the recorder's clock over the network. The built-in web server makes all process variables, alarms, and messages viewable through a standard web browser.

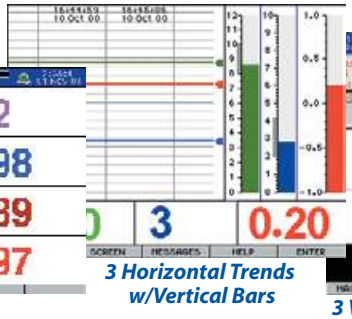
The eZtrend GR has a front USB port for attaching external devices, like a keyboard, mouse, or USB data storage key.

Firmware credits provide a flexible way of adding features to the recorder without having to upgrade firmware or add hardware. Credits can be applied as needed to turn on functionality. See sidebar on page 100 for a detailed description of available credit options.

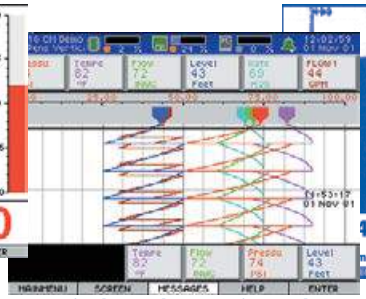
Data is stored in secure encrypted files, so it's easy to retrieve data dependent on process information without having to remember file names. Up to four levels of password protection are available for up to 50 users. Multiple levels of password protection and an audit trail of actions enhance data security.

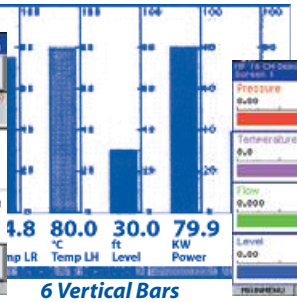
An Extended Security System (ESS) option extends these features to include time-out of password entry, password expiration, and traceability of user actions. ESS is compatible with the requirements of FDA regulation 21CFR part 11 for pharmaceutical use.

Panel Meter



3 Horizontal Trends w/Vertical Bars


3 Vertical Trends w/Horizontal Bars



6 Vertical Bars

6 Horizontal Bars

Specifications

Accuracy: ±0.1% or ±0.2% full scale, depending on input type. For a complete input actuation table, see the X-Series advanced recorders on page 104.

Inputs: 3, 6, or 12 analog input channels; *Types:* mv, V, mA with external shunt (provided standard), thermocouple, RTD, and Ohms; *Resolution:* 0.0015% 16-bit ADC

Display: 5.7" color LCD with touchscreen; QVGA (320 x 240 pixels) resolution; *Touchscreen life:* One million touches

Data Storage: *Local mass storage options:* USB memory key up to 2GB, USB hard drive up to 120 GB; *Internal data buffer:* Non-volatile 256MB or 740MB; *Setup and screens:* Stored internally on non-volatile memory; *Manual saving:* Data saved on USB memory stick, saving period related to log rate, number of pens, totals, and alarms. Each pen is capable of its own storage rate; *Recycling mode:* Internal memory has FIFO (first in, first out) capability, where newest data overwrites the oldest.

Communication: Ethernet 10 base-T connector (standard) supports Modbus TCP, FTP, internet, DHCP or fixed IP addressing.

Events: User-defined events are recorded and can be set to cause actions, recording start/stop, digital inputs, alarms, totalizing actions, timers, barcodes. Once an event has been caused, it can produce a set of actions: mark on chart, relay outputs, recording control, acknowledge alarm, trigger an event, set/clear relay, screen change, e-mail a message, or reset min/max. Each event marker can be recorded for analysis.

Alarm Setpoints: Six per pen integral "soft" alarm setpoints announce selected out-of-limit conditions. User can choose if alarm triggers a change in chart background color. Can be set for High, Low, Deviation. Latched alarms require operator acknowledgement. *Alarm damping:* 1 sec to 24 hours; *Hysteresis:* ±100% pen scale. Alarm can change the log rate on an affected pen.

Alarm Outputs: Programmable alarm setpoints (six per pen) can be configured to activate up to eight outputs. 200 mS update rate. 4 or 8 relay contacts SPDT, 3A 240 VAC, 3A 24 VAC/DC, 0.2A 240 VDC; 8 I/O SPNO 1A 24 VDC. *Activation:* Fully programmable internal alarm levels. Assignable to any relay output.

Digital Input: Two DI using dry (volt-free) contacts on the 8-relay card

Math: Basic math standard on all X-Series recorders include Add, Subtract, Multiply, Divide, Modulo, and power. Full maths option supports up to 100 characters freeform math expression for each pen. Includes Sine, Soc, Tan, Log, Parentheses, comms variables, free memory, and access to any data item variable.

Totalizers: One totalizer per input. Totalizer value assigned to a pen for display and storage. Totalization values are 10 digits plus exponent.

Approvals: CSA optional CSA22.2-No.1010.1-2004 Cert #L211230. UL ANSI/UL61010-1-2004 File #201698, CE mark

Enclosure Rating: Front panel designed to NEMA 3/IP54. Available with NEMA 4X, IP66.

Ordering Instructions

Make one selection from each table section below. Follow the availability column down, and check any notes to be sure the unit you need is available. A finished catalog number looks like this:
TVEZGR-_ _-_ _ _ - _ _ - _ - _ _ _ - _ _ _ _ _ _ - 000

Model Selection Guide

Description		Catalog Number	Availability	Price
eZtrend QXe Advanced Paperless Recorder		TVEZGR-	↓	$1803.00
Analog Inputs	3 Analog Inputs (IN1-IN3)	3 _-	(1)	0.00
	6 Analog Inputs (IN1-IN6)	6 _-	(1)	309.00
Expansion Card	None	_ 0-	•	0.00
	Board for Option Cards	_ 1-	(2)	82.00
Analog Input Card	None	0 _ _-	•	0.00
	6 Analog Inputs (IN9-IN14)	6 _ _-	(3, c)	618.00
Discrete Inputs/ Outputs Card	None	_ 00-	•	0.00
	4 Relay Outputs	_ 10-	(c)	232.00
	8 Relay/2 Digital IN, 6 Fixed Out, +2 Configurable DI/DO	_ 20-	(4, c)	283.00
	8 Configurable DI/24V Out	_ 30-	(5, c)	283.00
Power	90-240 VAC US Power Cord	2 _-	•	0.00
	24 VDC Instrument Power	5 _-	•	221.00
Input Freq. Filter Value	50 Hz	_ 1-	(7)	0.00
	60 Hz	_ 2-	(7)	0.00
Data Memory	1GB Internal, 8GB Front SD Card	3-	•	63.00
	2GB Internal, 8GB Front SD Card	4-	•	184.00
	4GB Internal, 8GB Front SD Card	5-	•	378.00
Security Options	None	0 _ _-	•	0.00
	ESS Extended System Security	S _ _-	•	210.00
Firmware Credits	10 Credits	_ 10-	•	331.00
	20 Credits	_ 20-	•	601.00
	30 Credits	_ 30-	•	756.00
	50 Credits	_ 50-	•	1103.00
	60 Credits	_ 60-	•	1239.00
	75 Credits	_ 70-	•	1313.00
	99 Credits	_ 90-	•	1444.00
Case/ Mount	Panel Mount	0 _ _ _ _ _	•	0.00
	Panel Mount with Rear Cover	R _ _ _ _ _	(12)	79.00
User Documents	Product CD and Trendviewer	_ 0 _ _ _ _	•	0.00
	Print Manual, Trendviewer CD	_ U _ _ _ _	•	21.00
Tagging	None	_ _ 0 _ _ _	•	0.00
	Stainless Steel Tag	_ _ S _ _ _	(10)	37.00
Standards	CE Mark, IP54, NEMA 3	_ _ _ 0 _ _	•	0.00
	CE Mark, IP66, NEMA 4X	_ _ _ 1 _ _	•	53.00
	CE, UL, CSA, IP66, NEMA 4X	_ _ _ 3 _ _	•	77.00
Certificates	None	_ _ _ _ 0 _	•	0.00
	F3391 Cert of Conformance	_ _ _ _ B _	•	33.00
	F3399 Custom Calibration Test	_ _ _ _ C _	(11)	282.00
	F3391 and F3399 Certificates	_ _ _ _ E _	(11)	305.00
Software	None	_ _ _ _ _ 0	•	0.00
	TrendManager Pro	_ _ _ _ _ P	(13)	331.00
	TrendServer Pro	_ _ _ _ _ S	(13)	546.00
	TrendServer Pro with OPC	_ _ _ _ _ T	(13)	814.00

Notes and Restrictions

c. Requires Expansion Board.

1. Standard inputs include T/C, mV, V, mA, ohms, and RTD actuations.
2. Required when ordering analog input, discrete input/output, or communications/transmitter power card options.
3. Analog input card supports T/C, mV, V, mA, ohms, and RTD actuations, with enhanced input isolation.
4. Relay outputs are high level: 3 Amp, 240 VAC non-inductive load
5. Discrete outputs are low level: 1 Amp, 24 VDC non-inductive loads. Any channel on the 8 discrete I/O card can be used as a digital input if NOT used as alarm output. Up to 4 channels can be used as pulse input up to 1 KHz
7. Factory set to this frequency, but can be changed in the setup menu.

13. Software packages can be ordered separately. See page 256.

X-Series GR Advanced Graphic Recorders

Honeywell

Features

- ***Crystal Clear Display***
  - *Minitrend GR:* 5.7" High Resolution Digital Color LCD
  - *Multitrend GR:* 12.1" High Resolution Digital Color LCD
  - Industrial rugged touchscreen with pushbutton navigation
  - Clear and intuitive menu operation
  - Custom screens
- ***Flexible Universal Input Options***
  - *Minitrend GR:* Up to 16 Analog Inputs
  - *Multitrend GR:* Up to 48 Analog Inputs
- ***Comprehensive Connectivity***
  - TCP/IP and RS-485 Modbus Protocol
  - 10/100 Ethernet (DHCP), web, FTP, OPC
  - USB ports for keyboard and mouse and memory

- ***Data Storage***
  - On-board non-volatile memory — up to 3.7GB
  - Removable SD Flash and USB storage
  - No moving parts — all solid state data storage
- ***Stringent Security for Total Data integrity***
  - Password Protection — 21CFR Part 11 Compliant
  - Extended Security System (ESS)
  - Wire seal provision

Plus...

- Date export in Comma Separated Variable (CSV) format
- NEMA 4X/IP66 option
- Health Watch for preventative maintenance
- Remote Access — Advanced data analysis at your PC
- Independent chart and logging speeds
- Rapid review and replay of data at recorder
- Approvals — CE, CSA, UL, FM
- Up to 50Hz (20 msec) Logging

Inputs and Outputs

Soft Alarms: Six software alarms per pen are easily set up to display and record selected out-of-limit conditions. These can be tied to the relay or digital outputs to activate the user's external equipment.

Single Relay Output: A separate relay alarm output at the rear of the unit can be set up as an alarm output.

Alarm Card: Four or eight SPDT relay contacts 240V, 8 I/O or 16 I/O, 24 VDC. Programmable alarm setpoints can be configured to activate up to 16 outputs.

Analog Output: Two or four 0-20 or 4-20 mA outputs per card.

Digital Input: Up to 12 digital inputs let you initiate, through a dry contact closure, selected recorder functions.

Pulse Counting: Up to four frequency inputs per board, are available to count signals up to 25 kHz (max. 2 cards).

Display

Display: 5.7" or 12.1" Color Active TFT with more than 256,000 colors makes it easy to interpret process data and take action. Features intuitive bar charts, digital values, trends or customized displays. A screen saver can be set to extend the life of the backlight.

Touch Screen: Heavy-duty durable touch screen provides easy data entry and rapid navigation though the menus.

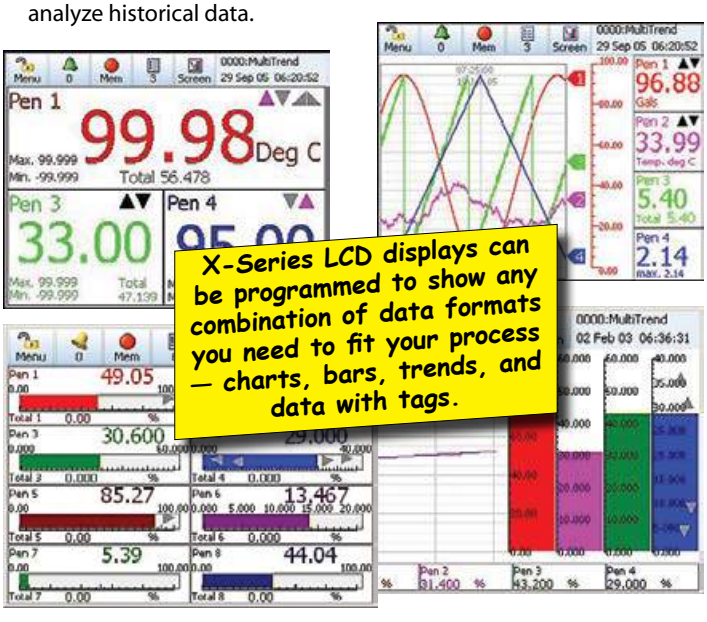
Help Files: Complete contextual help system can be accessed and visualized on the screen of the recorder.

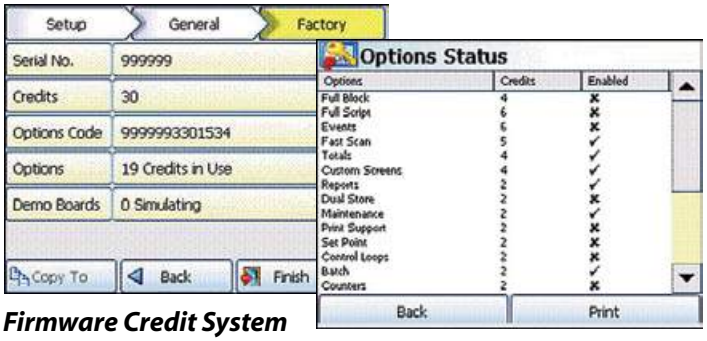
Standard Screens

Digital screens display combinations of charts, bars and digital data can be configured. Minitrend GR supports up to 20 screens, Multitrend GR supports up to 32. A small sample of standard screens are shown below.

Logarithmic Scales: Displayed scales can be set linear or logarithmic.

Replay with Zoom: Select replay mode and zoom-in on a specific area on the screen. The touch screen makes it fast to review and analyze historical data.





Firmware Credit System

Honeywell's credits system is a flexible way of adding to the recorder features without a firmware upgrade. Credits can be used to add functions until the total number of credits purchased has been depleted. Additional credits can be purchased later and added to a recorder after installation.

Firmware Options

Note: Extra Pens can be used to display and store the results of calculations, totalizers, counting, variables imported via communications, or to store values.

Free Form Math (4 credits): Handles math expressions that can consist of expressions up to 100 characters in length. *(See Note)*

Free Form Math with Scripting (6 credits): Powerful multi-line scripting ability solves complex state based applications. *(See Note)*

Fast Scanning Mode (5 credits): Sample rate of 50 samples/second for up to eight pens (20 mSec/sample)

Totalizer/Sterilization Calculation (4 credits): Each pen can be associated with a totalizer. Totalized values can be displayed and recorded; multiple totals can be calculated from the same variable. The totalizer function can handle Fo and Po Sterilization calculation. *(See Note)*

Extra Pens (2 credits): 4 extra pens to store and display totalized values, results of calculations, etc. Minitrend supports up to 16 extra pens, Multitrend supports up to 48 extra pens.

Custom Screens (4 credits): Import custom built screens that have been created in X Series Screen Designer.

Events (6 credits): Into/out of alarm, Ack, start, stop, reset totals, digital input On/Off/state change, T/C burnout, mark chart, start/stop logging, digital output On/Off.

Password Net Sync (5 credits): Password change on one recorder replicates to other records on the same subnet

Batch/Groups (5 credits): Ability to run batches with Start, Stop, Pause, and Abort. Up to 6 concurrent, asynchronous batches.

Printer Capability (2 credits): Provides ability to print recorder status text screens to USB PCL 1 printer.

Remote View (3 credits): Extends the recorder's user interface to a PC. Provides full remote control of the unit via a web browser.

OPC Server (10 credits): OPC-compliant software for real-time data exchange between servers and clients (recorders, controllers, PLCs, etc.)

HealthWatch/ Maintenance (2 credits): Keeps track of critical recorder "life actions" for diagnostics and preventative maintenance. Includes birth date, power cycles, Time On/Off, Hi/Lo CJC values, hardware/software version, relay operations, calibration date and backlight operation

Modbus Master (10 credits): Fetches data from modbus slaves.

Password Net Synch (5 credits): Password change on one recorder is replicated on other recorders on the same subnet.

Hardware Lock (2 credits): Locks out hardware configuration.

E-mail (3 credits): Send e-mail on alarm or event.

Reports (3 credits): Generates min/max totals, averages, current pen value reports as .RTF files. Print, e-mail, or export to flash drive.

Secure Communications (3 credits): Conforms to DPWS (Device Profile for Web Services).

Data Storage

Internal Data Storage: At least 256MB expandable internal non-volatile flash memory is available for data storage and chart history.

Internal memory capacity (days) / Logging rate = 1 sec

Pens	256MB	740MB	1850MB	3.7GB
4	172 days	1000 days	1222 days	4960 days
8	86 days	500 days	611 days	2480 days
16	43 days	250 days	311 days	1240 days
32	21 days	62 days	155 days	310 days
48	14 days	40 days	103 days	206 days

Data Export: Removable SD flash and USB flash storage device provides multiple data storage alternatives. Data is stored in a secure binary encrypted format, with the recorder's configurations, providing added security of the data files.

External USB Devices: The recorder has two USB host ports, one front and one rear, for attaching external devices (keyboard, mouse or a data storage key). The keyboard and mouse can be used to navigate the recorder's screen along with text entry.

Remote Control: Extends the recorder's user interface onto a desktop PC. Providing full remote control of the unit through a web browser.

Independent Chart Speeds and Logging Rates: Logging rates can be programmed completely separate from the chart speed, so data can be displayed and stored at rates that best suit the applications.

Fuzzy Logging: Increases storage capacity, with data compression up to 100:1 or more. Data is monitored to determine changes in process data. If no changes are observed, data is logged periodically. If data changes rapidly, it is recorded normally at the programmed rate.

Communications

Ethernet: Ethernet (DHCP standard) connection provides unlimited connectivity to local area networks (LANs).

RS-485 Modbus: Lets process data be transferred to other devices or to record data received in MODBUS RTU slave mode.

Simple Network Time Protocol (SNTP): Recorder time can be synchronized over the Ethernet network via a SNTP client.

Web Server: With the recorder connected to a LAN, all process variables, alarm and messages can be viewed from an Internet browser.

Security

Total Data Integrity: Data is stored in secure encrypted files making it easy to retrieve the data dependent on process information. Data is automatically recognized without having to remember file names.

Password Protection: Up to 4 levels of password protection with up to 50 different users are available. Multiple levels of password protection and audit trail of actions enhance the security of the data.

Extended Security System: ESS provides extended features including entry of unique User IDs and associated passwords, time-out of password entry, password expiration, and traceability of user actions. ESS is compatible with the requirements of 21CFR part 11.

Security Tag: "Wire seal provision" that provides added security to seal the front door and rear wiring when using optional rear cover to prevent undetected entry to these areas of the recorder.

Other Features

24VAC/DC or 48VDC Power Supply: 20 to 50 VDC, 20 to 30VAC

24VDC Transmitter Loop Power: Minitrend supplies up to 200mA (not DC version). Multitrend supplies up to 1 Amp

Enclosure Rating: Standard NEMA 3/IP55 type front face protection. NEMA 4X/IP66 available as an option.

Approvals: CSA, UL and FM CL1 Div 2 approvals. CE conformity.

X-Series GR Advanced Graphic Recorders

Specifications

Design Attributes

Display: *Minitrend GR:* 5.7" digital color touchscreen LCD (TFT), QVGA (640 x 480 pixels) resolution, backlight lifetime to 55,000 hours; *Multitrend GR:* 12.1" digital color touchscreen LCD (TFT), SVGA (1024 x 768 pixels) resolution, backlight lifetime to 43,000 hours

Screen Presets: *Screen Saver:* Set in minutes from 1 to 180, can dim the screen or switch off; *Brightness:* Adjustable 10–100%, default at 80%; *Maximum luminosity:* 400 cd/m2.

Display Update Rate: Display values updated every second

Status Display: A status bar, at the top of the recorder's screen, displays the real-time icons of the recorder status, (time left and alarm active).

Communications: Ethernet 10/100Base-T with RJ45 connector supporting Modbus/TCP, FTP, Internet, DHCP or fixed IP address. RS485 Modbus RTU (up to 115200 baud rate).

Mathematics: Add, Subtract, Multiply and Divide. Free form/scripting math option, up to 100 characters free form math expression for each pen.

USB Ports: USB host ports front and rear for data and setup transfers. Keyboard or mouse, barcode reader, or external mass storage device.

Standard and Custom Screens: Fully programmable display values in engineering units. Time/date stamp on every division. Standard screens display data, digital reading, bargraphs or combinations. Custom screens created in Screen Designer software can be imported. *(Custom Screen firmware option is required.)* Digital values displayed include alarms on bars, engineering units, pen name, tag, time and date, 20 character description and totalized values.

Data Storage: *Removable Media:* SD Flash card, supports up to 8.0Gb. *Local Mass Storage:* USB memory key up to 120Gb, USB hard drive up to 120Gb; *Internal Data Buffer:* Non-volatile. 256MB to 3.7 Gb (50 million to 1.2 billion points); *Setup and Screens:* Stored internally on non-volatile memory; *Data Saving Period:* Related to log rate, number of pens, totals and alarms. *Data Format:* Honeywell binary encoded format; *Recycling Mode:* First In First Out

Power Requirements: *Voltage (VRMS):* 90VAC to 250 VAC (auto select). *Frequency:* 50/60Hz; Optional Instrument Power: 20 to 50 VDC/20 to 30 VAC

Common Relay Output (SPNC): NC common alarm relay: Two contacts, normally closed when the recorder is powered. Rating 24 V, 1 Amp.

Battery: Battery backup for clock, Lithium battery. 10 years life (Recorder powered), 4 years life, typical (Recorder unpowered).

Clock: *Tolerance:* ±20ppm to a resolution of 1 second at 25° C. Format selectable for MM/DD/YYYY or DD/MM/YYYY Summer/Winter manual time adjustment or via communications. SNTP Client or Server included for synchronizing over Ethernet.

Alarm Setpoints: 6 per pen integral soft alarm setpoints announce selected out-of-limit conditions; Alarm triggers can be set for Hi, Lo, Deviation (latched or unlatched) for alarm acknowledgement. *Alarm Damping:* 1 sec to 24 Hours; *Hysteresis:* ±100% of pen scale; *Common relay output:* 1A 24 V, can be activated on any alarm.

Display Chart Speeds: Independent of logging rate. 3 chart rate categories: Slow = 1, 5, or 10 mm/hour. Medium = 20, 30, 60, or 120 mm/hour. Fast = 300, 600, 1200, or 6000 mm/hour. Combinations of rates can be mixed, and chart speeds can be set independently for each chart.

Data Replay Mode: Data replay facility on chart displays at normal, fast or slow speeds with zoom and cursor.

Recorder Identification: Recorder name, Screen name, Time and Date.

Messages Screen: Message screen displays system information, and records any setup activity that has been changed. It also provides warning and error message updates, lists alarm activity and will display user-defined marks on a chart.

Password Protection: Multiple Administrator control of password setup and management with four levels of password protection. Up to 50 different users available. Password protection restricts user entry to recorder setup and specific screens. *Engineer:* Highest access to all levels. *Supervisor:* Next highest level, including access to levels below. *Technician:* Third level, including operator access. *Operator:* Lowest level of access.

CE Conformity (CE Mark): Conforms with the protection requirements of the following European Council Directives: 73/23/EEC, the Low Voltage Directive, and 89/336/EEC, the EMC Directive.

Immunity Product Classification: Complies with EN61326 Class I: Cord Connected, Panel Mounted Industrial Control Equipment with protective earthing (grounding). (EN 61010-1)

Enclosure Rating: Front panel NEMA3/IP55 (Optional NEMA 4 / IP66)

Installation Requirements: Category II Overvoltage (EN 61010-1) Pollution Degree 2

EMC Standards Safety: *Emissions:* EN61326 Class B; *Immunity:* EN61326 Industrial Levels Complies with EN61010-1:2001. Panel Mounted Equipment, Terminals must be enclosed within the panel.

manually adjust values, External Input for compensation, External CJC value specified

Input Resolution: 0.0015% (16 Bit ADC)

Input Impedance: *Current loop resistance:* DC: 10Ω, use ±0.1% external resistor; All others: >1 MΩ (Volts >10MΩ)

Source Impedance: *T/C and RTD:* 100Ω per lead maximum (CU10 = 15Ω)

Square Root Extraction: Standard on every input type

Sensor Compensation: Single and Dual point

Input Sampling Rate: Available slots support up to 8 analog inputs each (Minitrend QX has 2 slots, Multitrend SX has 6); the input sampling rate is dependent on actuation type. *All Inputs:* 100mS (10Hz), 200 mS (5Hz), 500 mS (2Hz); *Fast Sampling:* 20 mS (50Hz) for mA, mV and volts only

Input Sampling Method: Sample, Average, Min/Max, can be set independently per pen

Scales, Linear, Logarithmic: *Linear:* -999999 to 999999; *Decimal:* Automatic or programmable; Engineering units, user definable First channel in Screen Layout determines display chart scale *Logarithmic:* 1 to 99 decades

Input Isolation: 300VAC channel-to-channel, channel-to-ground

Noise Rejection (at 50/60Hz) ±2%: *Common Mode:* 2, 5, and 10Hz = -120dB; *Normal Mode:* 2Hz = -85dB, 5Hz = -80dB, 10Hz = -48dB

Honeywell

Logging

Method: Sample, Average, Min/Max. Can be set independently per pen

Logging Types: Continuous, Fuzzy

Logging Rate: 20 msec. to 4 days per pen

Fuzzy Logging: Secure data storage technique that delivers data compression ratio of 100:1 or more; Self teaching, storing the data at a variable rate to match the process

Options

Pulse Input: 4 isolated inputs per board, frequency 1Hz to 25kHz, updated once per sec. Input: Low <1V, High >4V to <50V or Volt free input: Low = short circuit, High = open circuit.

Alarm Outputs: Programmable alarm setpoints (6 per pen) can be configured to activate up to 16 outputs. *Update rate:* 200 ms for all alarms. *4 or 8 relay contacts:* SPDT, 3A 240VAC, 3A 24VAC/DC, 0.2A 240VDC (non-inductive, internally suppressed); *8 I/O or 16 I/O:* 1A 24VDC (non-inductive, internally suppressed); *Activation:* Fully programmable internal alarm levels. Assignable to any relay or discrete output.

Digital Input/Output: *8 I/O or 16 I/O:* All channels may be selected freely as either digital inputs or outputs. *4 relay outputs:* all four channels are relay outputs only. *8 relays/ 2 DI card:* Two outputs can be configured for use as digital inputs. If the 2 Digital inputs are used only 6 relay outputs are available.

Analog Outputs (Retransmission): 2 or 4 retransmission outputs available; a pen drives each output. Analog inputs, totalized values or any mathematical result can be retransmitted. *Update Rate:* 250 msec all channels; *Accuracy:* ±0.1% 0-500Ω load, ±0.25% 500Ω 1K load; *Type:* 0–20 / 4–20 mA; *Maximum Load Resistance:* 1000Ω; *Resolution:* 0.002%; *Isolation:* 300VAC

Transmitter Power: *Mini:* 200 mA @ 24 VDC ± 3 VDC. *Multi:* 1A @ 24 VDC.

Extended Security System (ESS): Compliant with 21 CFR Part 11. Includes features for entry of unique user IDs and passwords, timeout on inactivity (1 to 10 min.), password expiration (1 to 365 days), up to 50 users, password re-entry lock out for incorrect entry of password more than 3 times, no reuse of passwords (programmable 4 to 12 times), traceability by user name.

Totalizer/Sterilization: One totalizer per input. Totalizer value must be assigned to a pen for display and storage. Multiple totalizations (Math option) are possible by using extra pens. Reset may be manual or programmed. Totalization values are ten digits plus exponent. Each pen can be totalized according to Fo or Po Sterilization function at 250 °F. Standard reference temperature and thermal resistance (Z Value) are fully adjustable values of X, Y, W and V. Start temp, Reference temp and Z factor are all user defined, allowing support for many different types of Sterilization applications.

Identification: Optional customer ID Tagging (3 lines, 22 characters each)

Math Algorithms: All analog input channels have a math expression block. Fully programmable 100-character free form math expression per pen. Math calculations available, one per input plus 16 extra pens. Scripting maths includes conditions and multiline scripting in pen maths expressions. Allow functions, permanent variables and constants.

HealthWatch/Maintenance: Recorder keeps track of Birth Date, Power cycles, Time-On/Time-Off, Hi/Lo CJC value, Hardware/ Firmware updates, Calibration Dates and Backlight operation.

Custom Screens: Provides recorder the capability to accept custom screen designs from the Screen Designer software. Depending on the size of the screen designs, up to 10 screens can be loaded into the recorder memory.

OPC Server: OPC UA compliant. Totalizers and up to 96 pens can be transmitted via OPC server, max poll rate 1/s (Available 2014).

Approvals: *CSA:* CSA22.2-No.1010.1-2004 Certificate Number L211230. *UL:* ANSI/UL61010-1-2004 File # 201698. *FM:* Class 1 Division 2

Physical Parameters

Enclosure/Bezel: Zinc plated steel case with high impact resistant polycarbonate bezel; scratch resistant lens. NEMA 3/IP55 protection rating standard, Optional NEMA 4 / IP66 (Front face only)

Mounting Panel: Unlimited mounting angle. For best display view, the angle should not exceed 65° from left or right, 65° looking down and 40° looking up. Mounting adjustable for panel thickness of 2mm to 100mm. Adapter kits available for covering existing panel cutouts.

Dimensions (WHD): *Minitrend:* 5.67" x 5.67" x 7.87"; 5.43" (Full DIN) square cutout; *Multitrend:* 11.34" x 11.34" x 9.72"; 11.06" square panel cutout. *Both Models:* Additional 3.15" clearance recommended for a straight-type power cable and signal connectors.

Wiring Connections: IEC Power Plug. Removable terminal strip for input and alarm connections

Environmental and Operating Conditions

Ambient Temperature: 32° to 122°F (0° to 50°C)

Relative Humidity (%RH): 10 to 90%

Vibration: *Frequency:* 0 to 70 Hz; *Acceleration:* 0.1g

Mechanical Shock: *Acceleration:* 1g; *Duration:* 30 ms

Mounting Position from Vertical: *Tilted Forward:* ±40°; *Tilted Backward:* ±65°; *Tilted to Side:* ±65°

Warm Up: 30 minutes minimum

Seismic Qualification: Complies with IEEE 323-1974 and/or 1983 and IEEE 344-1975 and/or 1987 (optional)

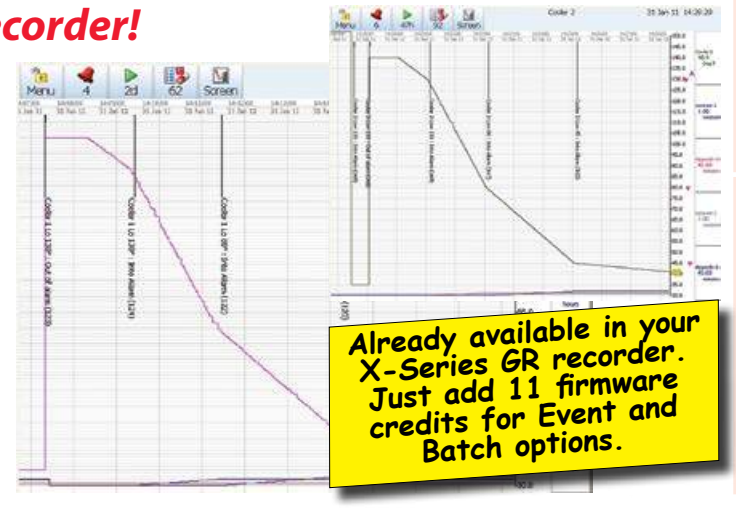
Batch Monitoring with a Paperless Recorder!

Creating Batch Markers

Users start, stop, pause, or resume from touchscreen push buttons.

Batch capabilities

- ***Batch actions:*** Start or end of batch, batch pause, resume, or abort.
- ***Batch identifiers:*** Four batch tag fields can be used to include batch name, batch description, lot number, user ID, and comments, fields can be custom named.
- ***View batches:*** At database (on PC) or recorder using Batch icon.
- ***Filter events/batches:*** By batch name, date/time, or event type.
- ***Export batch data:*** Export from TrendManager Pro to Excel on your choice of single or multiple spreadsheets. This makes analysis and graphing of data in Excel quicker and easier, reducing the time to manually organize data into a single spreadsheet.



Ordering Instructions

Choose one option from each table section. Follow the availability column down to view any restrictions. A finished catalog number looks like this:
TVMIGR-_ _ - _ - _ _ - _ - _ _ _ - _ _ _ _ _ _ -000 or
TVMUGR- _ _ _ _ _ _ - _ _ _ - _ _ - _ - _ _ _ - _ _ _ _ _ _ -000

Each X-Series GR unit comes with an SD flash card, mounting clamps, CD-ROM with user manual and TrendViewer software, printed Quick-Start guide, precision 10Ω resistors (one per analog input), two touchscreen stylii, power cord or connector, and I/O connectors.

Model Selection Guide

Description		Catalog Number	Availability		Price
Minitrend GR 5.7" Graphics Recorder		TVMIGR-	↓		$2730.00
Slot A	None	0 _	•		0.00
	Four Analog Inputs	4 _	•		420.00
	Six Analog Inputs	6 _	•		578.00
	Eight Analog Inputs	8 _	•		735.00
	Four Pulse Inputs	P _	•		578.00
Slot B	None	_ 0	•		0.00
	Four Additional Analog Inputs	_ 4	a		420.00
	Six Analog Inputs	_ 6	f		578.00
	Eight Analog Inputs	_ 8	f		735.00
	Four Pulse Inputs	_ P	f		578.00
	Two Analog Outputs	_ A	•		437.00
	Four Analog Outputs	_ B	•		655.00
Slot G Discrete I/O	None (1 Discrete Output Std)	0	•		0.00
	Four Relay Outputs	1	•		315.00
	8 Relays, 2 Digital Inputs	2	•		368.00
	8 Configurable DI/Discrete 24V Out	3	•		368.00
	16 Configurable DI/Discrete 24V Out	4	•		525.00
For the rest of the Minitrend GR model options, go to the table at the right)					
Multitrend GR 12.1" Graphics Recorder		TVMUGR-		↓	4001.00
Slot A	None	0 _ _ _ _ _		•	0.00
	Four Analog Inputs	4 _ _ _ _ _		•	525.00
	Six Analog Inputs	6 _ _ _ _ _		•	630.00
	Eight Analog Inputs	8 _ _ _ _ _		•	735.00
	Four Pulse Inputs	P _ _ _ _ _		•	578.00
Slot B	None	_ 0 _ _ _ _		•	0.00
	Four Analog Inputs	_ 4 _ _ _ _		g	525.00
	Eight Analog Inputs	_ 8 _ _ _ _		g	735.00
	Four Pulse Inputs	_ P _ _ _ _		g	578.00
Slot C	None	_ _ 0 _ _ _		•	0.00
	Eight Analog Inputs	_ _ 8 _ _ _		g	735.00
	Four Pulse Inputs	_ _ P _ _ _		g	578.00
Slot D	None	_ _ _ 0 _ _		•	0.00
	Eight Analog Inputs	_ _ _ 8 _ _		g	735.00
	Four Pulse Inputs	_ _ _ P _ _		g	578.00
Slot E	None	_ _ _ _ 0 _		•	0.00
	Eight Analog Inputs	_ _ _ _ 8 _		g	735.00
	Four Pulse Inputs	_ _ _ _ P _		g	578.00
	Two Analog Outputs	_ _ _ _ A _		•	437.00
	Four Analog Outputs	_ _ _ _ B _		•	655.00
Slot F	None	_ _ _ _ _ 0		•	0.00
	Eight Analog Inputs	_ _ _ _ _ 8		g	735.00
	Four Pulse Inputs	_ _ _ _ _ P		g	578.00
	Two Analog Outputs	_ _ _ _ _ A		•	437.00
	Four Analog Outputs	_ _ _ _ _ B		•	655.00
Slot G Discrete I/O	None (1 Discrete Output Std)	0 _ _		•	0.00
	Four Relay Outputs	1 _ _		•	315.00
	8 Relays, 2 Digital Inputs	2 _ _		•	368.00
	8 Configurable DI/Discrete 24V Out	3 _ _		•	368.00
	16 Configurable DI/Discrete 24V Out	4 _ _		•	525.00
Slot H Discrete I/O	None	_ 0 _		•	0.00
	Four Relay Outputs	_ 1 _		•	315.00
	8 Relays, 2 Digital Inputs	_ 2 _		•	368.00
	8 Configurable DI/Discrete 24V Out	_ 3 _		•	368.00
	16 Configurable DI/Discrete 24V Out	_ 4 _		•	525.00
Slot I Discrete I/O	None	_ _ 0		•	0.00
	Four Relay Outputs	_ _ 1		•	315.00
	8 Relays, 2 Digital Inputs	_ _ 2		•	368.00
	8 Configurable DI/Discrete 24V Out	_ _ 3		•	368.00
	16 Configurable DI/Discrete 24V Out	_ _ 4		•	525.00
(For the rest of the Multitrend GR model options, continue to the next table.)					

Multitrend GR is a direct replacement for the retired Multitrend SX.
Minitrend GR is direct replacement for the retired Minitrend QX.

Model Selection Guide (Continued)

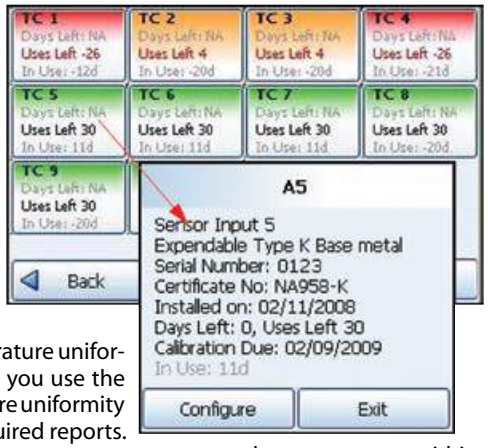
Description		Catalog Number	Availability		Price
Options for Advanced Graphic Recorder		Model	MI	MU	
Power	90-240 VAC, US Plug	2 _	•	•	0.00
	90-240 VAC, US, Transmitter Power	4 _	•	•	221.00
	24 VDC Instrument Power	5 _	•	•	221.00
	50 Hz Input Frequency Filter Value	_ 1	•	•	0.00
	60 Hz Input Frequency Filter Value	_ 2	•	•	0.00
Memory Card Storage	1GB Internal, 8GB Front SD Card	3	•	•	63.00
	2GB Internal, 8GB Front SD Card	4	•	•	184.00
	4GB Internal, 8GB Front SD Card	5	•	•	378.00
Security	None	0 _ _	•	•	0.00
	Extended Security System	S _ _	•	•	210.00
Firmware Credits	Ten Credits	_ 10	•	•	331.00
	Twenty Credits	_ 20	•	•	601.00
	Thirty Credits	_ 30	•	•	756.00
	Forty Credits	_ 40	•	•	840.00
	Fifty Credits	_ 50	•	•	1103.00
	Sixty Credits	_ 60	•	•	1239.00
	Seventy Five Credits	_ 70	•	•	1313.00
	Ninety Nine Credits	_ 90	•	•	1444.00
Case/ Mount	Standard Panel Mount	0 _ _ _ _ _	•	•	0.00
	Standard Panel Mount, Rear Cover	R _ _ _ _ _	•	•	79.00
Manual	TrendViewer, Manual on CD	_ 0 _ _ _ _	•	•	0.00
	TrendViewer on CD, Printed Manual	_ U _ _ _ _	•	•	21.00
Tags	None	_ _ 0 _ _ _	•	•	0.00
	Stainless Steel Tag (3 Line x 22 Char)	_ _ S _ _ _	•	•	37.00
Approvals	CE Mark, IP55, NEMA 3	_ _ _ 0 _ _	•	•	0.00
	CE Mark, IP66, NEMA 4X	_ _ _ 1 _ _	•	•	53.00
	CE, UL, CSA Approvals, IP55, NEMA 3	_ _ _ 2 _ _	c	•	53.00
	CE, UL, CSA Approvals, IP66, NEMA 4X	_ _ _ 3 _ _	c	•	105.00
	CE, FM Class 1 Div 2, IP66, NEMA 4X	_ _ _ 5 _ _	c	•	105.00
	CE, UL, CSA/FM Cl1 Dv2, IP66, NEMA 4X	_ _ _ 7 _ _	c	•	131.00
Certificates	None	_ _ _ _ 0 _	•	•	0.00
	F3391 Certificate of Conformance	_ _ _ _ B _	•	•	33.00
	F3399 Calibration Test Report	_ _ _ _ C _	•	•	300.00
	F3391 and F3399 Reports	_ _ _ _ E _	•	•	333.00
Software	None	_ _ _ _ _ 0	•	•	0.00
	TrendManager Pro Single License	_ _ _ _ _ P	•	•	331.00
	TrendServer Pro Single License	_ _ _ _ _ S	•	•	546.00
	TrendServer Pro with OPC Single Lic	_ _ _ _ _ T	•	•	814.00
	Screen Designer, TrendViewer	_ _ _ _ _ E	•	•	546.00
	Screen Designer, TrendManager Pro	_ _ _ _ _ F	•	•	761.00
	Screen Designer, TrendServer Pro	_ _ _ _ _ G	•	•	919.00
AMS2750-D Report Generation Tool Software		50037651-501			328.00
Screen Protector 5-Pack for Minitrend GR		50017290-501			71.30
Screen Protector 5-Pack for Multitrend GR		50017290-502			141.45

Restrictions
a Requires a minimum of six inputs in Slot A.
c Not available with Case/Mount V _ _ _ _ _.
f Requires minimum of four inputs in Slot A.
g Requires inputs in all preceding slots.

AMS2750D Standards Compliance with X-Series Recorders

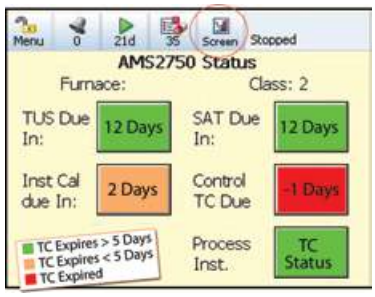
Honeywell X-Series paperless recorders make it easier for you to comply with AMS2750D standards. If your process is subject to NADCAP audits, these recorders can collect the data and produce survey reports to show that your temperature instrumentation is in compliance.

Two modes in the recorder address the AMD2750D specification. Process mode can be used to track calibration due dates and thermocouple usage conditions for the process equipment and alert the data.



Typically, this would be used on a recorder mounted on the process furnace. AMS2750 temperature uniformity mode (available only on the Multitrend) lets you use the recorder as a field test instrument to do a temperature uniformity survey, and create a data file used to generate required reports.

AMS2750D Process Mode



Process mode lets you track thermocouple usages based on thermocouple type, the number of times they are used, and the temperatures they see, to determine if they are still within the AMS2750D specified allowable uses. It will also track due dates for System Accuracy Tests (SAT), when the next temperature uniformity survey is due, and when the recorder is due for calibration.

Each item provides a five-day warning, through color-coded screen icons, before indicating an out-of-tolerance condition. AMS2750 Process Mode requires five credits to function, and is available on all three X-Series recorders.

AMS2750 process is used when the recorder is attached to the process in the role of a recording device. All SX, QX and QXe recorders can operate in the Process mode and can be used as a process recorder to monitor process timers for calibration due dates and thermocouple usage set by the user.

Process mode adds some new status screens and timers to the recorder to help with AMS2750D compliance of the process, giving a countdown to SAT and TUS intervals as well as control thermocouple and instrument calibration.

AMS2750 process mode is available on all X-Series recorders, and requires five credits in the X-Series firmware credit system and the rear cover (Option R in the model selection guide or a retrofit rear cover.)

Countdown Timers

AMS2750 tools include individual countdown timers for System Accuracy Test (SAT), temperature uniformity survey (TUS), Control TC and Instrument calibration.

TUS and SAT countdown timers track the next date for survey/test. A timer reset screen shows a suggested date for SAT or TUS, depending on Furnace Class, material, and instrumentation types.

A separate timer provides a countdown to the next instrument or control thermocouple calibration.

Thermocouple Usage Tracking

Thermocouple Usage Tracking is available with both TUS and Process options. It tracks thermocouple use within a recorder that's being used as a process instrument, and displays the results as a status screen. This give an indication to when thermocouples need replacing, dependent on load cycles and other factors specified in AMS2750D.

AMS2750D Temperature Uniformity Survey Mode

A Temperature Uniformity Survey (TUS) is a key requirement for a NADCAP audit. It determines how well a furnace performs relative to its design — in particular, the uniformity of the temperature within the volume of the working area of the furnace compared to the programmed setpoint.

X-Series TUS mode allows a recorder to be set up as a testing device rather than an in-process recorder, to monitor and record the temperature uniformity of thermal processing equipment per AMS2750D. Plus, it monitors thermocouple usage and reports their status.

Another key factor in the heat treatment process is monitoring the number of times thermocouples have been used and the temperatures to which they've been exposed, to ensure they are accurate and reliable.

Unlike in Process mode, TUS mode lets you set up a survey with up to six survey setpoints, and can support up to 40 inputs. Survey data points are recorded every two minutes into a separated data file that is used by the TUS report generator to create a temperature survey report. Currently, the TUS capability works only on single zone thermal processing equipment.

What do I need to get AMD TUS reports on my PC?

Here's what you need to run AMS themocouple uniformity surveys on a GR series recorder and generate TUS reports from a PC:

* *Data for a TUS report is logged to the TUS export memory, not the recorder's log memory. To export TUS data to a TrendManager or TrendServer Pro database, you'll need additional pens for each temperature pen.*

AMS2750D Report Generation Software

The AMS2750D Report Generation Tool is PC software that produces reports from your recorder's data results.

Report tool uses a special data file generated by the recorder, plus user-entered data related to the survey, furnace instrumentation and calibration information, to generate the survey report in Adobe PDF format.

This document can then be printed and signed by the appropriate person.

Honeywell Trendview Family Video Recorder Software

Features	*TrendViewer*	*TrendManager Pro*	*TrendServer Pro*
Import data from CF card or USB flash drive	✓	✓	✓
Graph data and print charts	✓	✓	✓
Export data using CSV format files*		✓	✓
Read archived data on PC's integral source database		✓	✓
Full configuration of all V5 recorders on PC (Required for Events options)		✓	✓
Ethernet networking: E-mail alarm messages, import data and setups via FTP			✓
Real-time data acquisition to PC			✓
OPC Server			✓
Remote access to database (password-protected)			✓
Audit trail manager with full user traceability			✓
Password administration, control, permissions			✓
Price per User License *(See Software Compatibility below.)*	Included w/ unit	$328.00	$546.00

* Export to flash memory in CSV format is standard GR feature.

Features Available Only in TrendServer Pro

Modbus RS-485, Modbus TCP • FTP Protocols • Distribute all recorder data over LAN plant-wide • Local and remote server and database access via Server/Client DCOM (optional) • Comms server manages recorder communication status • Send setup to record • Audit trail manager • Realtime data retrieval used for graphing and logging • Replay of historical and realtime data using a split screen format • Web browse a recorder • OPC DA 2.0 compliant

- Import data from any TrendView or X-Series recorder
- Communicate real time via Ethernet
- Archive data on a single integral database; schedule downloads of recorder data
- Graph, plot, and export data across any recorder, pen
- Remotely configure recorders

TrendViewer: View, graph, print data from a flash memory stick.

TrendManager Pro (TMP): Using a database avoids issues of imported data being a collection of oddly-named files. Instead, imported data is saved in an archival database for easy retrieval.

A search tool identifies archived data by batch field ID or date and time, fetches and displays it in either graphical or tabular (numerical) format. Chart graph tools zoom in or out; a cursor displays digital values. There are navigation buttons for major functions like import, print, search and custom labeling.

Data from different recorders can reside on the same chart. Chart templates make it easy to retrieve recurring data, like last hour's, last shift's, yesterday's or last week's data. Exports data in .csv spreadsheet format.

TrendServer Pro (TSP): TSP does everything TMP does but is fully Ethernet LAN network aware. Data is transferred via a manual FTP or a scheduled FTP (block data transfer). Process data is archived in the database automatically. Real-Time function streams data from one or more recorders for a current window into the process. OPC-DA server is optional. Configuration setups can be transferred via the network.

System requirements: Windows XP (32 bit) or Windows 7

Software Compatibility

Honeywell Trendview software for the GR series is backwards-compatible to older X-series recorders. The update from older TrendServer Pro and TrendManager Pro is free to licensed users, and can be downloaded from Honeywell's website.

Model Selection Guide

Description	Catalog No	Price
TrendManager Pro Software	50016133-501	$328.00
TrendServer Pro Software- Single User Version	50016134-501	546.00
TrendServer Pro Software- 5 User Pack	50016135-501	1420.00
TrendServer Pro with OPC Server Single User	50016136-501	819.00
TrendServer Pro with OPC Server- 5 User Pack	50016137-501	1638.00