

## **505 / 505E Features and Functions**

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Features			
	Original 505/505E (1985–1994)	Enhanced 505/505E (1994–May, 1996)	New Style 505/505E (May, 1996–present)
<b>Monitor Mode</b>	No Program Monitor Mode	Program Monitor Mode while Running	Program Monitor Mode while Running
<b>Hand Valve Control</b>	Hand Valve Actuation on Actuator Position	Hand Valve Actuation on Actuator Position	Hand Valve Actuation on Act Position or First Stage Press
<b>Function Keys</b>	No Programmable Function Keys	No Programmable Function Keys	2 Programmable Function Keys
<b>Tunables</b>	11 On-Line Program Tunables	18 On-Line Program Tunables	100+ On-Line Program Tunables
<b>Start Permissives</b>	No Start Permissive	Start Permissive Function	Start Permissive Function
<b>External Shutdown</b>	1 External Shutdown Input	1 External Shutdown Input	5 External Shutdown Inputs with First Out Indication
<b>Extr/Adm Priority Select</b>	Auto Extraction Priority Select (505E)	Bumpless Auto Extraction Priority Select (505E)	Bumpless Auto Extraction Priority Select (505E)
<b>Local/Remote</b>	N/A	N/A	Selectable Local/Remote Control
<b>Discrete I/O Monitoring</b>	N/A	N/A	Contact Input and Relay Output Monitoring
<b>Relay Testing</b>	N/A	N/A	Relay Output Forcing (Test)
<b>Analog Monitoring</b>	N/A	N/A	Analog Input and Output Monitoring
<b>Analog Calibration</b>	N/A	N/A	Analog Input and Output Calibration
<b>Graphics</b>	N/A	N/A	Optional Graphic Display Panel
<b>PC Interface</b>	N/A	N/A	Optional PC/Windows Programming Interface

Operational Modes			
<b>Operational Modes</b>	Run & Program	Run & Program	Run, Program, Service
<b>Extr/Adm Ctrl (505E)</b>	Extraction Control	Extr & Admission Control	Extr & Admission Control
<b>Ratio/Limiter (505E)</b>	Coupled HP & LP	Coupled HP & LP	Coupled HP & LP Decoupled–Inlet Decoupled–Exhaust Decoupled HP & LP
<b>Synch/Load Sharing</b>	No Synch or Load Sharing	Isochronous Load Sharing With DSLC	Synch or Isochronous Load Sharing with DSLC
<b>Dynamics</b>	Single Set of Dynamics (Speed PID)	Dual Dynamics (Speed PID)	Dual Dynamics (Speed PID)
<b>Start Sequence</b>	Manual, Idle/Rated Start Sequence	Manual, Idle/Rated Start Sequence	Manual, Idle/Rated, Auto Start Sequence with Hot or Cold Start
<b>Cascade</b>	Cascade–Deadband Control	Cascade–Deadband Control	Cascade–PID Control
<b>Auxiliary Loop</b>	Auxiliary PID as a Limiter (505)	Auxiliary PID as a Limiter (505)	Auxiliary PID as a Limiter or Controller (505/505E)
<b>4–20 mA Remote Setpoint</b>	Speed Setpoint	Speed Setpoint	Speed Setpoint Extr/Adm Setpoint (505E) Auxiliary Setpoint Cascade Set point

<b>Operational Modes (continued)</b>			
<b>Communication</b>	1 Communication Port RS-232 Fixed Program 300–9600 Baud	1 Communication Port RS-232 Fixed Program Modbus RTU or ASCII 300–9600 Baud	2 Communication Ports RS-232 / RS-422 / RS-485 Modbus RTU Or ASCII 300–57 600 Baud

<b>Hardware</b>			
	<b>Original 505/505E (1985–1994)</b>	<b>Enhanced 505/505E (1994–May, 1996)</b>	<b>New Style 505/505E (May, 1996–present)</b>
<b>Microprocessor</b>	16 Bit Zilog (Z-8000)	16 Bit Zilog (Z-8000)	32 Bit Motorola (68332)
<b>Display</b>	LCD 2 Line Display (22 characters per line)	LCD 2 Line Display (22 characters per line)	LED 2 Line Display (24 characters per line)
<b>Termination</b>	Attached Terminal Blocks	Attached Terminal Blocks	Removable Terminal Blocks
<b>Dimensions</b>	22.5"H x 18.5"W x 9.0"D (572 x 470 x 229 mm) Enclosure	22.5"H x 18.5"W x 9.0"D (572 x 470 x 229 mm) Enclosure	11.0"H x 14.0"W x 4.0"D (279 x 356 x 102 mm) Enclosure
<b>Keypad</b>	27 Key Front Service Panel	27 Key Front Service Panel	30 Key Front Service Panel
<b>Retrofit Mounting Kit to replace older 505/505E with new style 505/505E</b>	N/A	N/A	Flush Mount Kit (8923-134) Bulkhead Mount Kit (8923-135)

<b>I/O</b>			
<b>Speed Sensing</b>	(2) MPUs–Passive Only (350 Hz to 12 kHz)	(2) MPUs–Passive Only (350 Hz to 12 kHz)	(2) MPUs, Proximity Probes or one of each (0.5 Hz to 15 kHz)
<b>Analog Inputs</b>	(4) Analog Inputs–Fixed	(4) Analog Inputs–Fixed	(6) Analog Inputs– Programmable (10+ choices)
<b>Discrete Inputs</b>	16 Contact Inputs (6 fixed, 10 programmable) (13 choices)	16 Contact Inputs (6 fixed, 10 programmable) (15 choices)	(16) Contact Inputs (4 fixed, 12 programmable) (26+ choices)
<b>Actuator Outputs</b>	Selectable 2 Actuator Outputs (4–20 mA Or 20–160 mA)	Selectable 2 Actuator Outputs (4–20 mA Or 20–160 mA)	Selectable 2 Actuator Outputs (4–20 mA and/or 20–160 mA)
<b>Analog Outputs</b>	4 Analog Outputs (4–20 mA) (11 choices)	4 Analog Outputs (4–20 mA) (11 choices)	6 Analog Outputs (4–20 mA) Act#2 as Analog Output #7 (17+ choices)
<b>Discrete Outputs</b>	8 Contact Outputs (3 fixed, 5 programmable)	8 Contact Outputs (3 fixed, 5 programmable) (11 choices)	8 Contact Outputs (2 fixed, 6 programmable) (30+ choices)

<b>Protection</b>			
<b>Security</b>	Program Security–Hardware Jumper	Program Security–Hardware Jumper	Program Security–Password

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