

CONTROL UNIT ST - EP - FI - FE SERIES

CONTROL S Y S T E M S



ST SERIES EP SERIES FE SERIES FU SERIES FI SERIES



ST 400

Technical Data

- For SBR SD/DS/RD/PS/KD operators with ENC or MEC. (Up to 1,50 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,25 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class
- Protection against contact is provided by covers for live parts for electrical shock hazard.

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment
- Extension module connections

Accessories

- Extension accessories:
 - Relay module (yellow-red-green traffic lights and 3 programmable relays)
 - Receiver module (2 channel 433 MHz)

Functions

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing.
- Adjustable partial opening.
- Safety systems :
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
- Value interval
- Visual warning when reached to value or transition to hold to run operating mode.
- Extension accessories:
 - Relay module (yellow-red-green traffic lights and 3 programmable relays)
- Receiver module (2 channel 433 MHz)
- Internal error memory.

<u>EP 400</u>



Technical Data

- For SBR SD/DS/RD/KD operators with ENC or MEC. (Up to 0,75 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,25 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class
- Protection against contact is provided by covers for live parts for electrical shock hazard.

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment
- Programmable relay output

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing. (Function can also be activated/deactivated).
 - When door reaches the open position, the door closes
 - automatically after the set time.
 - Counter restarts after photocell activity.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 Value interval:
 - Visual warning when reached to value or transition to hold to run operating mode.
- Extension accessories:
- Relay module (yellow-red-green traffic lights and 3 programmable relays)
- Internal error memory.



EP 500

Technical Data

- For SBR SD/DS/RD/PS/KD operators with ENC or MEC. (Up to 1,50 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
 Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing.
- Adjustable partial opening.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
 Adjustable return time (for both direction change).
- Adjustable retain a
 Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
- Value interval
- Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.

FE 500



Technical Data

- For SBR SD/DS/RD/KD operators with ENC or MEC. (Up to 2,20 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment
- Emergency stop button

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing.
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 Value interval:
 - Visual warning when reached to value or transition to hold
- to run operating mode.
- Internal error memory.



EP 450 RP

Technical Data

- For SBR SD/DS/RD/PS/KD operators with ENC or MEC. (Up to 0,75 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,25 A)
 Operating Temperatures: -10 / +45 °C
- Cover
- Dimensions W x H x D [mm]:
- IP 54 Protection class
- Protection against contact is provided by covers for live parts for electrical shock hazard.

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment with 3 buttons
- Controlling dock leveler with swing lip

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode - OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing (function can also be activated/deactivated).
 - When door reaches the open position, the door closes automatically after the set time.
 - Counter restarts after photocell activity.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 Value interval
 - Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.

EP 450 TRP



Technical Data

- For SBR SD/DS/RD/PS/KD operators with ENC or MEC. (Up to 0,75 kW)
 - Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,25 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Protection against contact is provided by covers for live parts for electrical shock hazard.

Design

- Illuminated OPEN-STOP-CLOSE buttons
- LCD screen for easy adjustment with 3 buttons
- Controlling dock leveler with swing lip

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing (function can also be activated/deactivated).
 - When door reaches the open position, the door closes automatically after the set time.
 - Counter restarts after photocell activity.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.



0

0

•



FE 5XX

Technical Data

- For SBR SD/DS/RD/PS/KD operators with ENC or MEC.
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button

Products

- FE 530 Up to 0,75 kW
- FE 540 Up to 1,50 kW
- FE 550 Up to 2,20 kW
- FE 560 Up to 4,00 kW
- FE 570 Up to 5,50 kW

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
 - Photocell (NC)
 - Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold
- to run operating mode. Internal error memory.

FU 750 M



Technical Data

- For SBR SD operators with ENC or MEC. (Up to 0,75 kW)
- Supply voltage: 1N~230V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
 - Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.



FI 750 M

Technical Data

- For SBR DS/RD/PS/KD operators with ENC or MEC. (Up to 0,75 kW)
- Supply voltage: 1N~230V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
 Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
 - Photocell (NC)
 - Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
 Adjustable return time (for both direction change).
- Adjustable return time
 Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
 - Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold
- to run operating mode.
- Internal error memory.

FI 1500 M



- For SBR DS/RD/PS/KD operators with ENC or MEC. (Up to 0,75 kW)
 - Supply voltage: 1N~230V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
 - Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.









FI 1500 T

4

0

•

12

Technical Data

- For SBR DS/RD/PS/KD operators with ENC or MEC. (Up to1,50 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A) Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Desian

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

Functions:

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening. Emergency stop button.
- Safety systems;
 - Photocell (NC)
 - Optical sensor (NC or NO) - Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
 - Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold
- to run operating mode.
- Internal error memory.

FI 2200 T



Technical Data

- For SBR DS/RD/PS/KD operators with ENC or MEC. (Up to 2,0 kW)
 - Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
- Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Desian

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
- OPEN/CLOSE in self hold mode
- OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
- Photocell (NC)
- Optical sensor (NC or NO)
- Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
 - Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold to run operating mode.
- Internal error memory.



FI 4000 T

Technical Data

- For SBR DS/RD/PS/KD operators with ENC or MEC. (Up to 4,00 kW)
- Supply voltage: 3N~400V AC
- Operating Frequency: 50 Hz / 60 Hz
- Control Voltage: 24 V DC
- Supply voltage for external devices: 24 V DC (0,30 A)
 Operating Temperatures: -10 / +45 °C

Cover

- Dimensions W x H x D [mm]:
- IP 54 Protection class

Design

- Illuminated OPEN-STOP-CLOSE-PARTIAL OPEN buttons
- LCD screen for easy adjustment with 3 buttons
- Emergency stop button
- Speed control

- Limit position adjustment (ENC only) and adjustment of all parameters from user level
- Selectable operating modes;
 - OPEN/CLOSE in self hold mode
 - OPEN in self hold / CLOSE in hold to run mode
- OPEN/CLOSE in hold to run mode
- Time adjustable automatic closing
- Adjustable partial opening.
- Emergency stop button.
- Safety systems;
 - Photocell (NC)
 - Optical sensor (NC or NO)
 Pneumatic sensor (NC or NO)
- Adjustable return time (for both direction change).
- Speed adjustment;
 - OPENING/CLOSING speed can be adjusted separately.
 - Adjustable deceleration range.
- Soft start / soft stop.
- Strain detection.
- LCD screen for information and status monitoring.
- Door Operation-cycle counter (not resettable).
- Maintenance-cycle counter;
 - Value interval
 - Visual warning when reached to value or transition to hold
- to run operating mode.
- Internal error memory.



CONTROL UNIT



	ST 400	EP 400	EP 500	FE 500	EP 450 RP	EP 450 TRP
SUITABLE SERIES	SD DS RD PS KD	SD DS RD KD	SD DS RD PS KD	SD DS RD PS KD	SD DS RD PS KD	SD DS RD PS KD
Operating Voltage	3N~400 V AC	3N~400 V AC	3N~400 V AC	3N~400 V AC	3N~400 V AC	3N~400 V AC
Operating Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Max Motor Power	1,50 kW	0,75 kW	1,50 kW	2,20 kW	0,75 kW	0,75 kW
Control Voltage	24 V	24 V	24 V	24 V	24 V	24 V
24V Output Supply	24 V Dc Max 0,25 A	24 V Dc Max 0,30 A	24 V Dc Max 0,30 A	24 V Dc Max 0,30 A	24 V Dc Max 0,30 A	24 V Dc Max 0,30 A
Temperature Range	-10 / +45	-10/+45	-10/+45	-10/+45	-10 / +45	-10/+45
Digital Screen	•	•	•	•	•	•
End Position Setting	E/M	E/M	E/M	E/M	E/M	E/M
Adjustable Opening/Closing Speed						
Soft Start/Stop						
Illuminated Buttons (Find In The Dark)	٠	٠	•	•	•	•
Emergency Stop Button			•	•	•	•
"Connection For Safety Edge System (Photocell, Optical Sensor, Air Pressure)"	•	•	•	•	•	•
Programmable Relay Outputs	OP	•	•	•	•	•
Remote Reciever Module Connections	٠	٠	•	•	•	•
Partial Opening Button						
Expansion Module Support (Relay Module, Receiver Module)	• / •					
Controlling A Dock Leveller With Swing Lip					•	
Controlling A Dock Leveller With Telescoping Lip						•
Integrated Door Operation Counter	•	•	•	•	•	•
Integrated Error Memory	•	•	•	•	•	•



	FE 530	FE 540	FE 550	FE 560	FE 570
SUITABLE SERIES	SD DS RD PS KD	SD DS RD PS KD	SD DS RD PS KD	SD DS RD PS KD	SD DS RD PS KD
Operating Voltage	3N~400 V AC				
Operating Frequency	50/60 Hz				
Max Motor Power	0,75 kW	1,50 kW	2,20 kW	4,00 kW	5,50 kW
Control Voltage	24 V				
24V Output Supply	24 V Dc Max 0,30 A				
Temperature Range	-10 / +45	-10/+45	-10 / +45	-10 / +45	-10 / +45
Digital Screen	•	•	•	•	•
End Position Setting	E/M	E/M	E/M	E/M	E/M
Adjustable Opening/Closing Speed					
Soft Start/Stop					
Illuminated Buttons (Find In The Dark)	٠	•	•	•	٠
Emergency Stop Button	•	•	٠	•	•
"Connection For Safety Edge System (Photocell, Optical Sensor, Air Pressure)"	•	•	•	•	•
Programmable Relay Outputs	•	•	•	•	•
Remote Reciever Module Connections	٠	٠	•	•	٠
Partial Opening Button	•	•	•	•	•
Expansion Module Support (Relay Module, Receiver Module)					
Controlling A Dock Leveller With Swing Lip					
Controlling A Dock Leveller With Telescoping Lip					
Integrated Door Operation Counter	•	•	•	•	•
Integrated Error Memory	•	•	•	•	•



	FU 750 M	FI 750 M	FI 1500 M	FI 1500 T	FI 2200 T	FI 4000 T
SUITABLE SERIES	SD	DS RD PS KD	DS RD PS KD	DS RD PS KD	DS RD PS KD	DS RD PS KD
Operating Voltage	1N~230 V AC	1N~230 V AC	1N~230 V AC	3N~400 V AC	3N~400 V AC	3N~400 V AC
Operating Frequency	50/60 Hz					
Max Motor Power	0,75 kW	0,75 kW	1,50 kW	1,50 kW	2,20 kW	4,00 kW
Control Voltage	24 V					
24V Output Supply	24 V Dc Max 0,30 A					
Temperature Range	-10 / +45	-10 / +45	-10 / +45	-10/+45	-10 / +45	-10 / +45
Digital Screen	٠	•	•	•	•	•
End Position Setting	E/M	E/M	E/M	E/M	E/M	E/M
Adjustable Opening/Closing Speed	•	•	•	•	•	•
Soft Start/Stop	•	•	•	•	•	•
Illuminated Buttons (Find In The Dark)	•	•	•	•	•	•
Emergency Stop Button	٠	•	٠	•	•	•
"Connection For Safety Edge System (Photocell, Optical Sensor, Air Pressure)"	•	•	•	•	•	•
Programmable Relay Outputs	•	•	•	•	•	•
Remote Reciever Module Connections	٠	•	•	•	•	•
Partial Opening Button	٠	•	•	•	•	•
Expansion Module Support (Relay Module, Receiver Module)						
Controlling A Dock Leveller With Swing Lip						
Controlling A Dock Leveller With Telescoping Lip						
Integrated Door Operation Counter	•	•	•	•	•	•
Integrated Error Memory	٠	•	•	•	•	•