



Process Controllers



ESM-4450, ESM-4950
ESM-7750, ESM-9450
ESM-9950

"Smart I/O Module" System,
RS-232/485 ModBus RTU Serial Communication,
Process Controller

ESM-4430, ESM-4930
ESM-7730, ESM-9430
ESM-9930

PID Dual SET (SET + Alarm), Process Controller

ESM-4435

PID 3 SET (SET + Alarm), Process Controller

ESM-4400, ESM-4900
ESM-7700, ESM-9900

"Smart Output Module" System,
RS-232/485 ModBus RTU Serial Communication,
Process Controller

ESM-3700

Single SET, Process Indicators



Universal process inputs

Optional secondary sensor input

Dual or multi point calibration for dc Voltage/Current input

Configurable ON/OFF, P, PI, PD and PID control forms

Auto-tune and Self-tune PID

Manual / Automatic mode selection for control outputs

Bumpless transfer

Motorized valve control function

8 steps profile control (Ramp & Soak) function

Remote SET function

Retransmission of process value or process control

Detection of heater failure

Programmable heating, cooling and alarm functions for control outputs

RS-232 (standard) or RS-485 (optional) serial communication

with Modbus RTU protocol

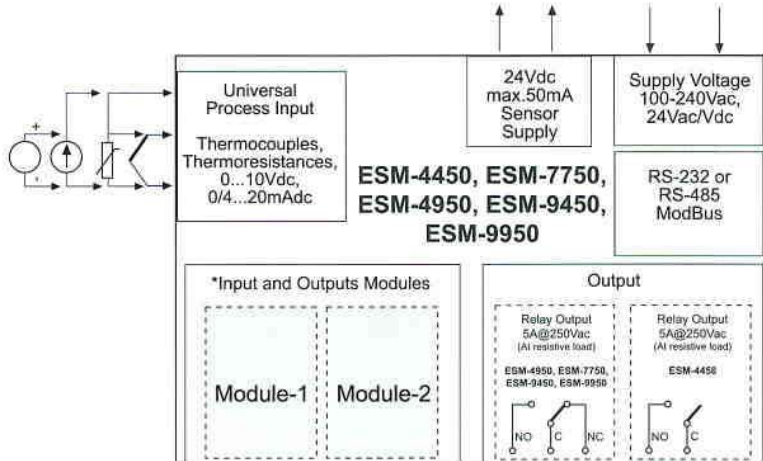




ESM-4450, ESM-4950, ESM-7750 ESM-9450, ESM-9950

"Smart I/O Module" System RS-232/485 Modbus RTU Serial Communication Process Controllers

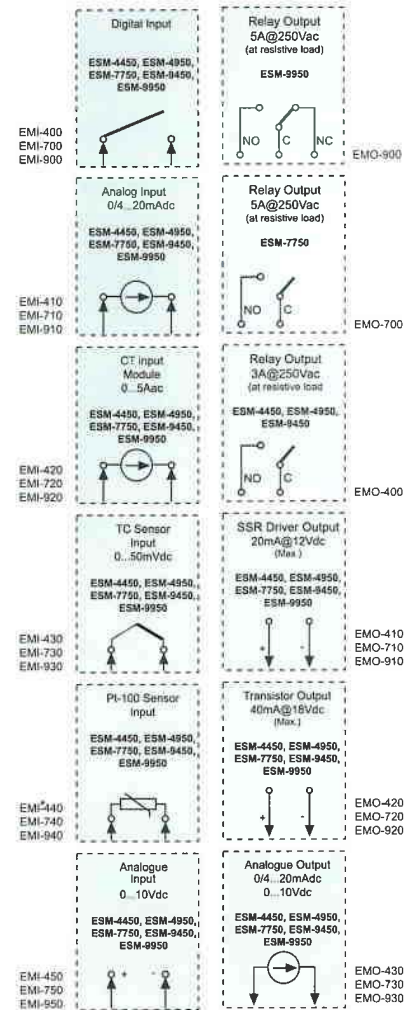
- Universal process input (TC, RTD, mVdc, Vdc, mAcd)
- Optional secondary sensor input
- Dual or multi point calibration for dc Voltage/ Current input
- Configurable ON/OFF, P, PI, PD, PID control forms
- Auto-tune and Self-tune PID
- Manual/Automatic mode selection for control outputs
- Bumpless transfer
- Motorized valve control function
- 8 steps profile control and start-hold-stop options by using logic input modules
- Remote SET by using analogue input modules
- Re-transmission function
- Detection of heater failure by using 0...5Aac CT input module
- Programmable heating, cooling and alarm functions for control outputs
- RS-232 or RS-485 serial communication with Modbus RTU protocol
- Password protection for operator and technician section



* Input and output modules can be mounted each modules sockets.

* Two input modules can be not plugged in Module-1 and Module-2 socket at the same time

Module-1 ve Module-2
Input / Output alternatives

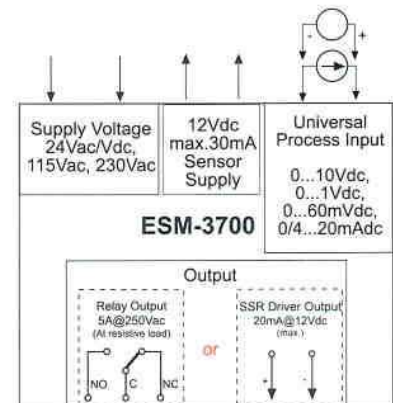


ESM-3700

Single SET, Process Indicators



- 0...10Vdc, 0...1Vdc, 0...60mVdc, 0/4...20mAcd Universal process input
- Max. or min measurement value are registered to the device memory
- Max. or min measurement value can be shown continuously on the display
- Adjustable decimal point position
- Programming mode password protection
- Relay output and SSR driver output for alarm output (it must be determined in order)

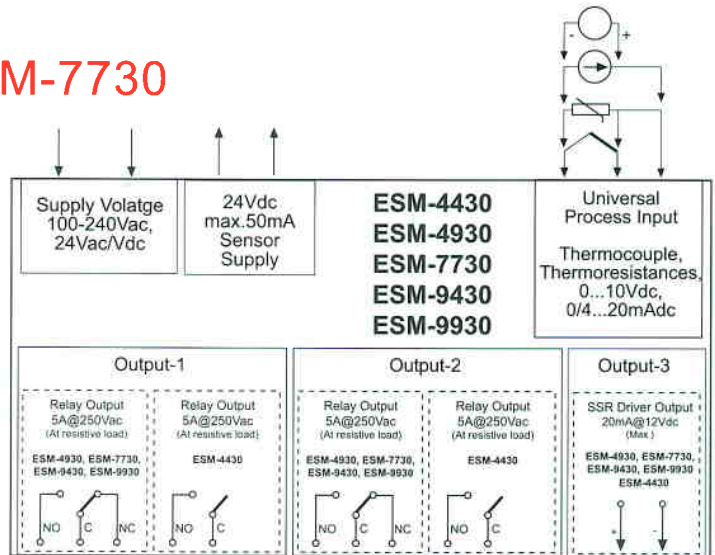




ESM-4430, ESM-4930, ESM-7730 ESM-9430, ESM-9930

PID Dual SET (SET + Alarm)
Process Controllers

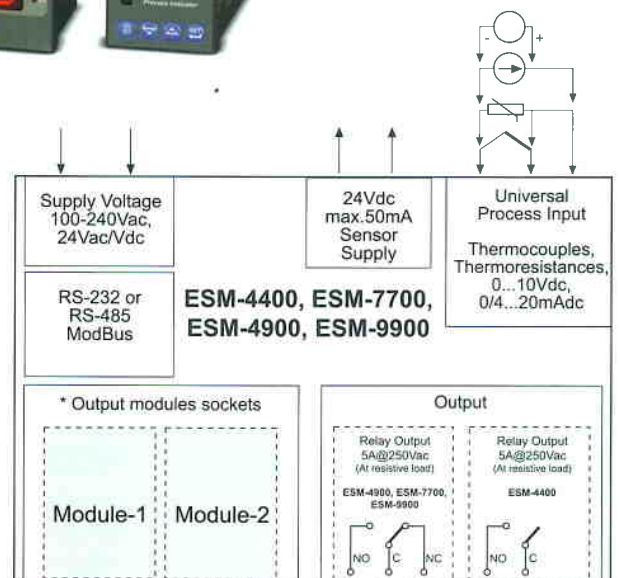
- Universal process input (TC, RTD, mVdc, Vdc, mAdc)
- Dual or multi point calibration for dc Voltage/ Current input
- Configurable ON/OFF, P, PI, PD, PID control forms
- Auto-tune and Self-tune PID
- Manual/Automatic mode selection for control outputs
- Bumpless transfer
- Programmable heating, cooling and alarm functions for control outputs
- Password protection for operator and technician section



ESM-4400, ESM-4900, ESM-7700, ESM-9900

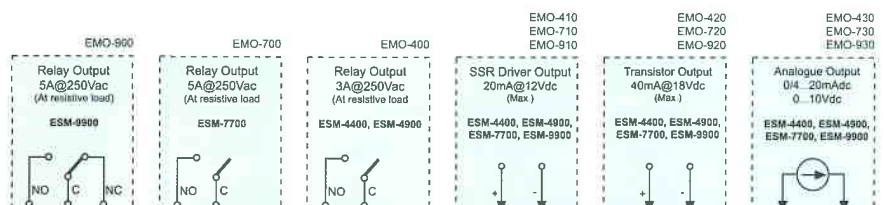
"Smart Output Module" Systems
RS-232/485 Modbus RTU Serial Communication
Process Indicators

- Universal process input (TC, RTD, mVdc, Vdc, mAdc)
- Dual or multi point calibration for dc Voltage/ Current input
- Re-transmission of process value or process control by using current output module
- Programmable high and low alarm functions
- RS-232 (standard) or RS-485 (optional) serial communication with Modbus RTU protocol
- "Smart Output Module" system
- Password protection for operator and technician section



* Output modules can be mounted each modules sockets.

Module-1 and
Module-2
Output alternatives



Order Code											ESM-4450	ESM-4950	ESM-7750	ESM-9450	ESM-9950	ESM-4430	ESM-4930	ESM-7730	ESM-9430	ESM-9930	ESM-4435	ESM-4400	ESM-4900	ESM-7700	ESM-9900	ESM-3700					
	20	1	/			/	0	0	0	0																					
A Supply Voltage																															
1	100...240Vac (-%15, +%10) 50/60Hz										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
2	24Vdc/Vac (-%15, +%15) 50/60Hz										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
3	24Vac (-%15, +%15) 50/60Hz										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
4	115Vac (-%15, +%15) 50/60Hz										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
5	230Vac (-%15, +%15) 50/60Hz										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
9	48Vdc (-%15, +%10) 50/60Hz										-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
BC Input Type																															
20	Configurable Universal inputs										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
D Serial Communication																															
0	None															+	+	+	+	+	+	+							+		
1	RS-232 ModBus RTU										+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	
2	RS-485 ModBus RTU										+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	
E Process Output																															
0	None																												+		
1	Relay Output (At resistive load 5A@250Vac)										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
2	SSR Driver Output (Max. 20mA@12Vdc)										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
FG Input/Output Modules-1																															
00	None										+	+	+	+	+									+	+	+	+	+	+		
01	Relay Output										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	
02	SSR Driver Output (Max. 20mA@12Vdc)										+	+	+	+	+					-	-	-	-	+	+	+	+	+	+	-	
03	Transistor Output (Max. 40mA@18Vdc)										+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	
04	Analogue Output (0/4...20mAAdc or 0...10Vdc)										+	+	+	+	+									+	+	+	+	+	+	-	
07	Digital Input										+	+	+	+	+					-	-	-	-	-	-	-	-	-	-		
08	Analogue Input (0/4...20mAAdc)										+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
09	CT Input Module (0...5Aac)										+	+	+	+	+						-	-	-	-	-	-	-	-	-	-	
10	Thermocouple Input (0...50mVdc)										+	+	+	+	+						-	-	-	-	-	-	-	-	-	-	
11	Pt-100 Input										+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	Analogue Input (0...10Vdc)										+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
HI Input/Output Module-2																															
00	None										+	+	+	+	+									+	+	+	+	+	+		
01	Relay Output										+	+	+	+	+									+	+	+	+	+	+	-	
02	SSR Driver Output (Max. 20mA@12Vdc)										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	
03	Transistor Output (Max. 40mA@18Vdc)										+	+	+	+	+	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-	
04	Analogue Output (0/4...20mAAdc or 0...10Vdc)										+	+	+	+	+					-	-	-	-	+	+	+	+	+	+	-	
07	Digital Input										+	+	+	+	+					-	-	-	-	-	-	-	-	-	-		
08	Analogue Input (0/4...20mAAdc)										+	+	+	+	+					-	-	-	-	-	-	-	-	-	-	-	
09	CT Input Module (0...5Aac)										+	+	+	+	+						-	-	-	-	-	-	-	-	-	-	
10	Thermocouple Input (0...50mVdc)										+	+	+	+	+						-	-	-	-	-	-	-	-	-	-	
11	Pt-100 Input										+	+	+	+	+						-	-	-	-	-	-	-	-	-	-	
12	Analogue Input (0...10Vdc)										+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Specifications																															
"Smart I/O Module" system											+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-			
"Smart Output Module" system											+	+	+	+	+								+	+	+	+	+	-			
Universal process (TC, RTD, mVdc, Vdc, mAAdc) input											+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-			
Bumpless transfer											+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-				
Motorized valve control function											+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-				
8 steps profile control											+	+	+	+	+							-	-	-	-	-	-				
Remote Set point function											+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-				
Re-transmission function											+	+	+	+	+	-	-	-	-	-	-	-	+	+	+	+	-				
Detection of heater failure by CT input module											+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-				
Dimension																															
77x35mm DIN											-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+				
48x48mm DIN 1/16											+	-	-	-	-	+						-	+	+	-	-	-				
96x48mm DIN 1/8											-	+	-	-	-	-	+							+	-	-	-				
72x72mm DIN											-	-	+	-	-	-	-	+						-	+	-	-				
48x96mm DIN 1/8											-	-	-	+	-	-	-	-									-				
96x96mm DIN 1/4											-	-	-	-	+	-	-	-									-				