

KNC-PLC-KS105 - Series



FEATURES

- **Four High-Speed Counters, Max 200 kHz**
- **Four High-Speed Outputs, Max 200 kHz**
- **24VDC Power Required**
- **8 Digital Inputs, 8 Digital Outputs**
- **3 Year Lithium Battery for Data Retention**
- **Multiple Communication Ports**
- **4K Bytes of Programming Instructions**
- **5K Bytes of Data**
- **448 Bytes of EEPROM Backup**



DESCRIPTION

The KNC-PLC-KS105 is a small and thin PLC with high performance. It includes 16 digital I/O, 4 high-speed counters, 4 high-speed pulse outputs, 256 timers, 256 counters, RTC (Real Time Clock), 4 interrupts, one RS485 communication port, one RS232 programming port, optional CANopen port, and is expandable with up to 14 I/O modules. The high-speed counters come in 9 operation modes and support a single-phase or dual-phase frequency up to 200 KHz. In the 9 different modes, each counter has its own inputs for clock, direction control, start and reset, and has a 32-bit preset value. Three of the four high-speed pulse outputs – channels 0, 1, and 2 – can reach a maximum frequency of 200 KHz, while channel 3 can reach a maximum frequency of 10 KHz. All four high-speed output channels support both PTO and PWM. The KNC-PLC-KS105C1-16DT and KNC-PLC-KS105C2-16DT support CANopen protocol. The free KincoBuilder software provides absolute and relative positioning, homing, jogging, and quick stop instructions. The KNC-PLC-KS105 Series is an ideal hub for data processing with field devices such as temperature modules, servo drives, field busses, and more.

SPECIFICATIONS

Technical Specifications	
DI Specifications	
Input Points	8
Input Type	Source / Sink
Rated Input Voltage	DC 24V (Max. 30V)
Rated Input Current	3.5mA@24VDC
Max Input Voltage of Logic 0	5V @ 0.7mA
Minimum Input Voltage of Logic 1	Common Channel: 11V @ 2.0mA
Input Delay	Off -to- On: 1.2 μs; On -to- Off: 0.5 μs;
Isolation Between Input and Internal Circuit	Mode: Opto-Electrical Isolation Voltage: 500VAC/1 min

L011612

Technical Specifications	
DO Specifications	
Output Points	8
Output Type	Source
Rated Power Supply Voltage	24 VDC, Allowance Range: 20.4-28.8 (Same as Power Supply)
Output Current Per Channel	Rated Current: 200mA, Max. 300mA @24VDC
Instant Impulse Current Per Channel	1A, Less Than 1s
Output Leakage Current	Max. 0.5µA
Output Impedance	Max. 0.2Ω
Output Delay	<ul style="list-style-type: none"> • Off - to - On: Common Channel: 12µs; HSC Channel: 0.5s • On - to - Off: Common Channel: 35µs; HSC Channel: 1µs
Protection:	<ul style="list-style-type: none"> -Reverse Polarity Protection of Power Supply: No -Inductive Load Protection: Yes -Short-Circuit Protection: Yes -Reverse Polarity Protection of Output: Yes, less than 10s
Isolation Between Output and Internal Circuit	<ul style="list-style-type: none"> • Mode: Opto-electrical Isolation • Voltage: 500VAC / 1 min

Parameters	KS105-16DT	KS105C1-16DT	KS105C2-16DT
Power Supply			
Rated Voltage	24VDC		
Voltage Range	20.4 - 28.8VDC		
I/O			
Digital	8*DI / 8*DO		
Serial Port	PORT0, RS232, Support Programming Protocol, MODBUS RTU Slave, Free Protocol PORT1,RS485, Support Programming Protocol, MODBUS RTU Master, Free Protocol		
High Speed Counter	4, Max 200KHZ, support single and double phase		
High Speed Output	4 Channel 0&1&2 Max 200KHz (load resistance is less than 1.5K Ω at the highest frequency). Channel 3 Max 10KHz		
Interrupt	4, I0.0 - I0.3 interrupt up and down		
Expansion	14		14
CAN		CANopen Master or CAN Free Protocol	CANopen Master or CAN Free Protocol
Storage			
Programming	Max 4K Bytes Instruction		
Data	M Area 1K Bytes; V Area 4K Bytes		
Data Backup	E2PROM, 448 Bytes		
Data Retention	2K Bytes. Lithium Battery , 3 Years at Normal Environment		
Other			
Timer	256 1ms : 4 10ms : 16 100ms : 236		
Timer Interruption	2, 0.1ms		
Counter	256		
RTC	Yes, the difference is 5 min/month at 25°C		

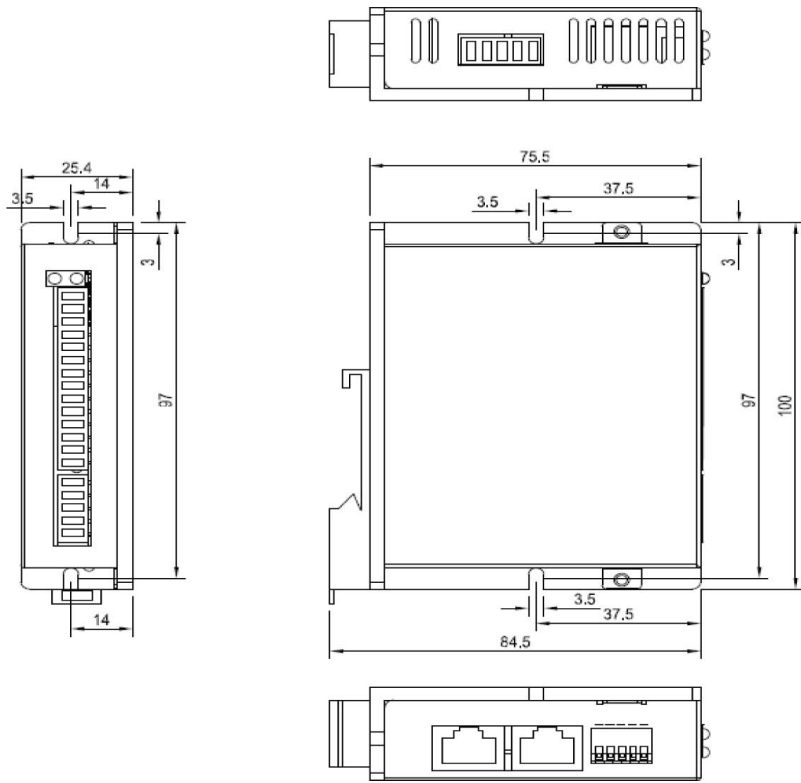
Transport and Storage

Ambient Conditions	Temperature	-40 ~ +70° C
	Relative Humidity	10%~95%, No Condensation
	Altitude	Up to 3000m
Mechanical Conditions	Free Falls	With manufacturer's original packaging, 5 falls from 1m Height

Normal Operation

Ambient Conditions	Air Temperature	Open Equipment : 10 ~ +55°C; Enclosed Equipment: -10 ~ +40°C
	Relative Humidity	10% ~ 95%, No Condensation
	Altitude	Up to 2000m
	Pollution Degree	For use in Pollution Degree 2
Mechanical Conditions	Sinusoidal Vibrations	5<f<8.4Hz, Occasional: 3.5mm Amplitude; Continuous: 1.75mm Amplitude. 8.4<f<150, occasional: 1.0g acceleration; continuous: 0.5g acceleration
	Shock	Occasional excursions to 15g, 11 ms, half-sine, in each of 3 mutually perpendicular axes
Electromagnetic Compatibility (EMC)	Electrostatic Discharge	±4kV Contact, ±8kV Air. Performance Criteria B
	High Energy Surge	A.C. Main Power: 2KV CM, 1KV DM; D.C. Main Power: 0.5KV CM, 0.5KV DM; I/Os and Communication Port: 1KVCM Performance Criteria B.
	Fast Transient Bursts	Main Power: 2KV, 5KHz. I/Os and Communication Port: 1KV, 5kHz. Performance Criteria B.
	Voltage Drops and Interruptions	A.C. Supply: at 50Hz, 0% voltage for 1 period; 40% voltage for 10 periods; 75% voltage for 20 periods. Performance Criteria A.
Ingress Protection Rating	IP20	

DIMENSIONS

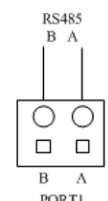
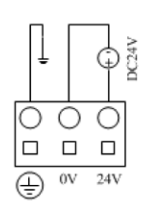
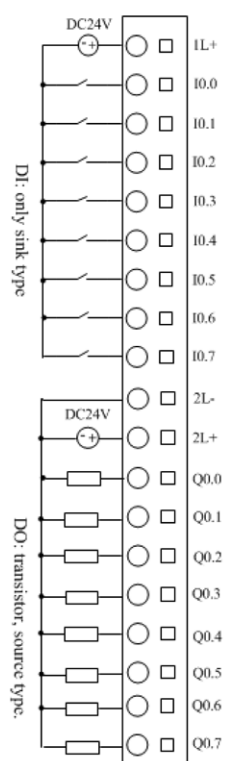


KS105-16DT

Ext. Expansion Bus (in RJ45)

PORT0
RS232 (in RJ45)

Pin	Function
3	RXD
4	TXD
6	GND



WIRING DIAGRAMS

KS105C1-16DT

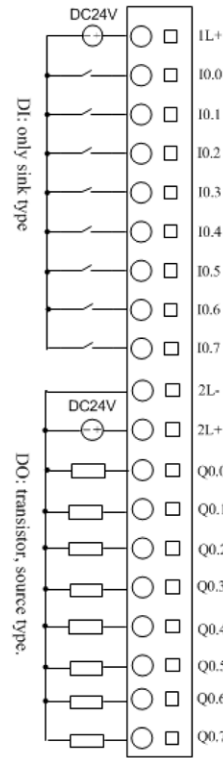
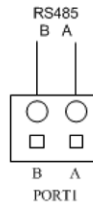
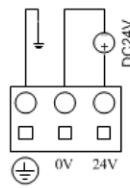
CAN
CAN (in RJ45)

	Pin	Function
CAN	1	CAN_H
	2	CAN_L
	3	CAN_GND

PORT0
RS232 (in RJ45)

	Pin	Function
RS232	3	RXD
	4	TXD
	6	GND

There is one same CAN in the two RJ45 interfaces.



KS105C2-16DT

CAN 1
CAN (in RJ45)

	Pin	Function
CAN	1	CAN_H
	2	CAN_L
	3	CAN_GND

The CAN 1 can also be used as expansion bus

CAN 2/PORT 0
(in RJ45)

	Pin	Function
CAN	1	CAN_H
	2	CAN_L
RS232	3	RXD
	4	TXD
	6	GND

