

Training Set Introduction

Presented by Tee
Sensornode IoT Technology

- 1 PLC host composition
- 2 Wiring
- 3 Product selection
- 4 Encryption

Training set composition

Training set composition

IIoT Training Set



- IIoT Gateway V-BOX E-4G, Wecon brand
- PLC LX3V-0806MR-D2, Wecon brand
- Analog Input/ Analog Output (4~20mA) extensions module
- Analog Input/ Output (-10V~10V) extension module
- HIM PI3070i, Wecon brand
- Power meter RS485, Aze Tech 3 phase
- CT 5/1000
- ເຊັ່ນເຊື່ອນຫະພູມຄວມຊຸ່ມ RS485 HT Sensor
- Relay 24VDC Coil
- Power supply 220VAC to 24VDC 2.5A, Miwl brand
- ເບກເກີໄຟ 60A Breaker
- ບັກໄຟ 220VAC 30A terminal plug
- ດອກໄຟ LED 24VDC Red, Yellow, Green
- ສະວິດໄຟສອງທິດທາງ On/Off
- ສະວິດໄຟສາມທິດທາງ Auto/Off/Manual
- ສະວິດກົດສຸກເສີນ Emergency Switch

Training set composition

IoT Gateway Specification

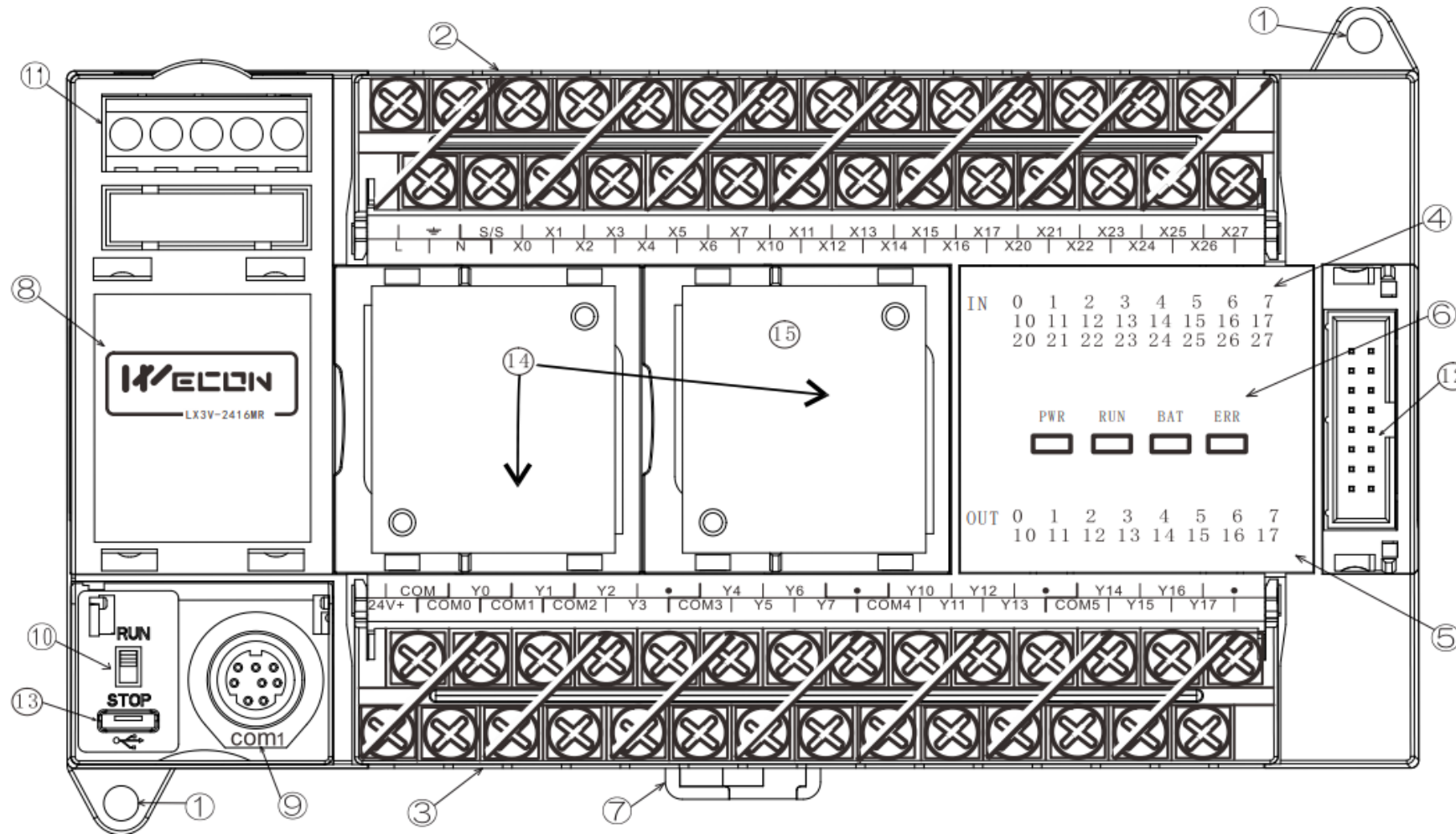
SPECIFICATIONS

Items	V-BOX E-00	V-BOX E-4G
OS	Linux	
CPU	RAM 9	
Flash	128MB	
RAM	DDRIII 64MB	
SD Card	N/A	
USB	OTG USB / Device USB	
Serial Port	COM1: RS232, RS422 / RS485 (2 in 1)	
Ethernet Port	1 Ethernet port	
WIFI	N/A	
Power Supply	24VDC (12~28VDC)	
Power Consumption	<10W	
Enclosure	Metal shell	
Dimension(W*H*D)	101.0mm*73.2mm*26.8mm	
Mounting Size	110.0mm*15.6mm	
Weight (KG)	0.26	
Vibration Resistance	10~25Hz (X, Y, Z direction 2G/30 minutes)	
Storage Temperature	-20°C~70°C	
Working Temperature	-10°C~60°C	
Relative Humidity	10~85% RH (Non-condensing)	
CE Certification	CE marked	
FCC Certification	FCC Class A	
Http Interface	Yes	
Remote Update	Yes	
Configuration Backup	Yes	
Off-line Transmission	Yes	
GPS	N/A	LBS



Training set composition

PLC Specification

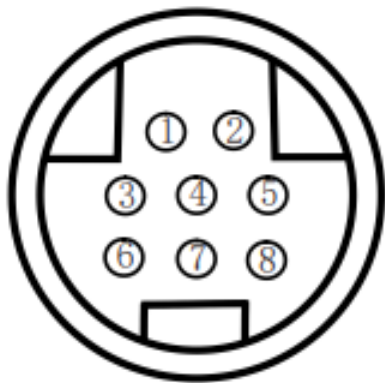


1. Mounting hole(\varnothing :4.5)
2. Power supply and input signal terminal
3. 24v output power supply and output terminal
4. Input indicator
5. Output indicator
6. PLC state indicator:
 1. PWR: power light
 2. RUN: running light
 3. BAT: low power light
 4. ERR: blinks when the program is wrong;
 5. ERR: always on when a CPU error occurs
7. DIN rail mounting clip
8. Cover plate
9. Com1 port
10. RUN/STOP switch
11. COM1/COM2 port and rs485 port
12. Expansion module interface
13. Micro-USB port
14. BD board slot

Training set composition

PLC Serial port

COM1(RS422)



Pin	Signal	Description
1	RXD-	Received data (negative)
2	RXD+	Received data (positive)
3	GND	Signal ground
4	TXD-	Transmitted data (negative)
5	+5V	Output voltage is +5V, The same as the internal voltage
6	NC	Empty
7	TXD+	Transmitted data (positive)
8	NC	Empty

COM1/COM2(RS485)

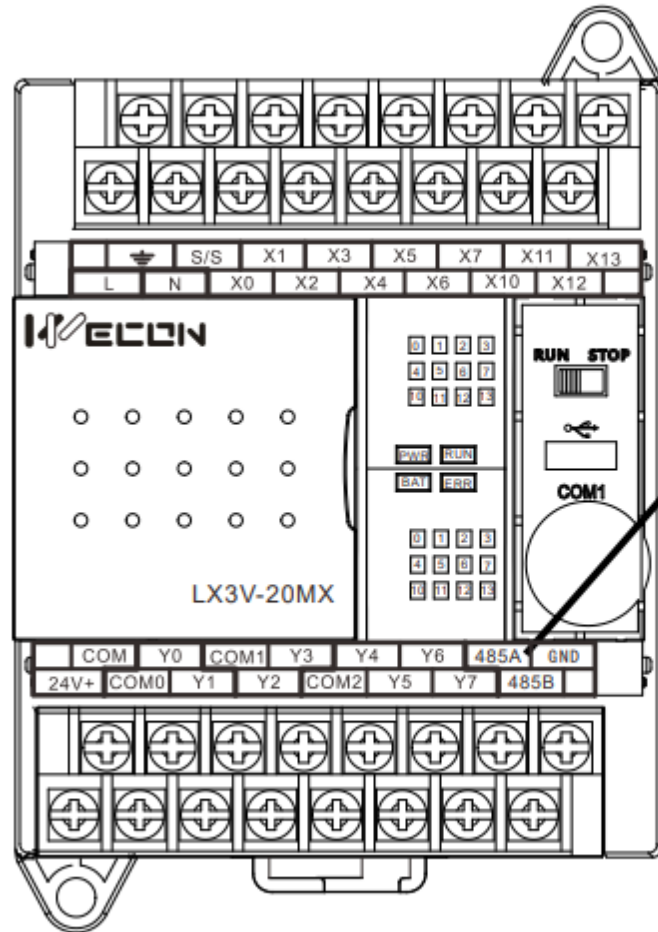


Pin	Signal	Description
A+	485+	Received data (positive)
B-	485-	Received data (negative)

The RS485 and RS422 ports on COM1 cannot be used simultaneously.

Training set composition

PLC Serial port



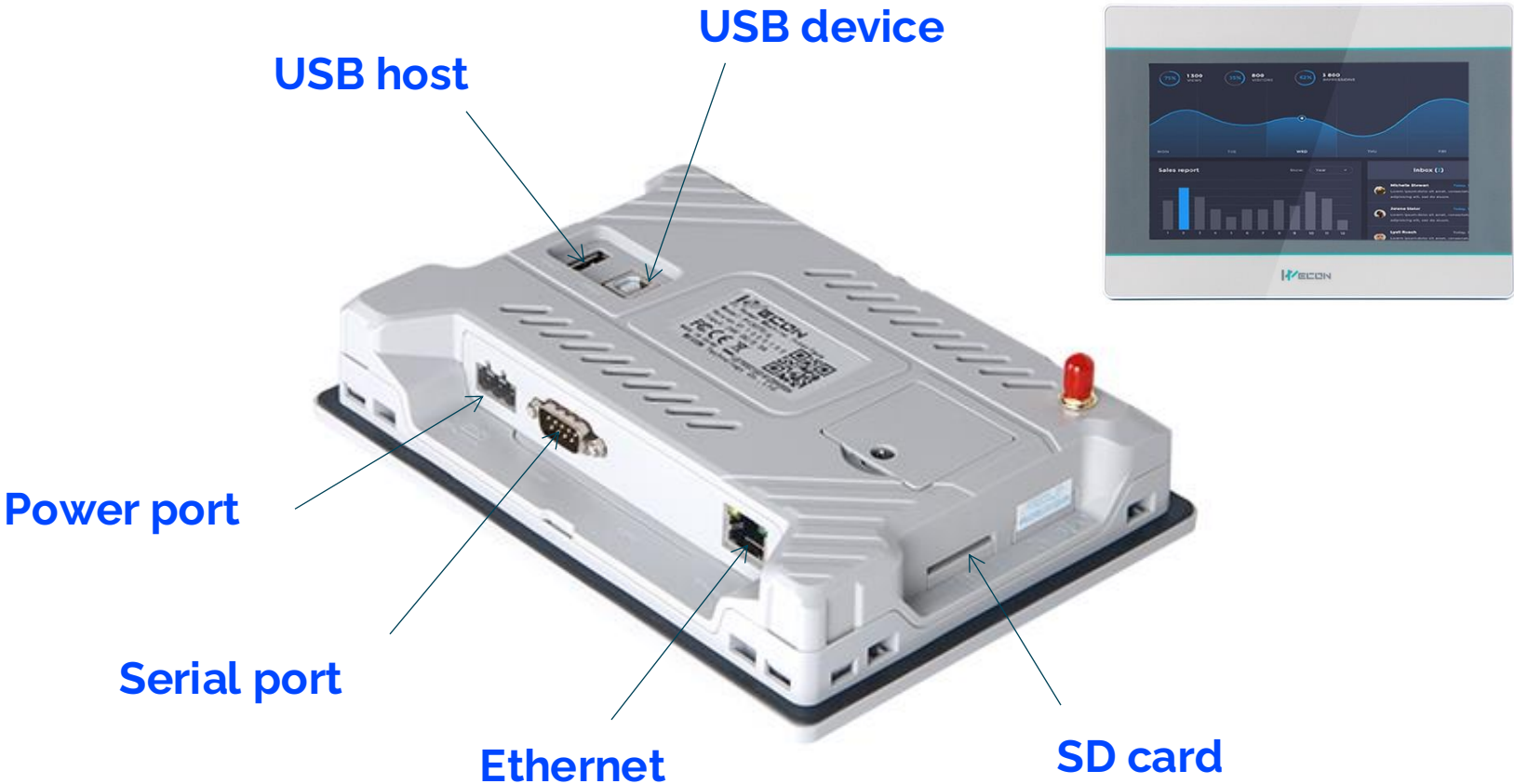
COM2 RS485 PIN

	485A	GND
Y7	485B	

Pin	Signal	Description
485A+	485+	Received data (positive)
485B-	485-	Received data (negative)

Training set composition

HMI Specification



Main	Model	PI3070i
	OS	Linux 4.9.11 QT based
	Processor	Cortex A7 528MHz
Display	Size	7"
	Screen	TFT
	Resolution	800*480
	Color	16,000k colors
	Brightness (cd/m²)	250
	Backlight	LED
	Backlight Lifetime	50,000 hours
Storage	Touch Panel	High precision four-wire resistive
	Memory	128 MB
	Flash	128 MB
	SD Card Slot	--
	USB Port	USB2.0 Host + USB2.0 Client
RTC	Real-time clock	Yes
	Calendar	Yes
	COM1	CN1:RS422/RS485 CN2: RS232
	COM2	--
I/O Port	COM3	--
	Ethernet	--
	CANopen	--
	Wi-Fi	--
	4G LTE	--
Power	Rated Power	< 8W
	Power Voltage	DC 24V
	Input range	DC 12 ~ 28V
	Shell Color	Grey
Enclosure	Shell Material	Plastic+ABS(Polycarbonate)
	Overall Size (mm)	201.2W*147.2H*39.0D
	Mounting Size (mm)	192.0W*138.0H
	Mounting Method	Panel Mount
	Weight (Kg)	0.74
	Working Temperature	-10 ~ 55°C
Environment	Storage Temperature	-20 ~ 70°C
	Humidity	10 ~ 85%RH (Non-condensing)
	Vibration Resistance	10 ~ 25 Hz (X, Y, Z direction 2G/30 minutes)
	Cooling	Air Cooling
Software	Programming	PIStudio
	Remote Access	--
	Email Alarm	--
	IP Camera	--
	Audio Output	--
	Video Player	--
	IP Code	IP65 (Front panel)
Certificates	CE	CE Marked
	FCC	FCC Class A
	UL	--

Training set composition

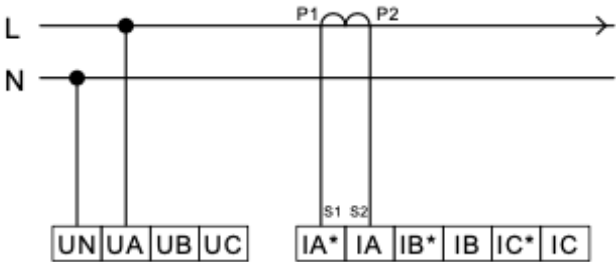
Extension module specification

Item	LX3V-2ADI2DAI-BD	LX3V-2ADV2DAV-BD
Power supply	24VDC \pm 10%, 50mA; 5VDC \pm 10%, 70mA (Powered by PLC host)	
Analog input range	Analog input (ADI) DC 4~20mA (input resistance 250K Ω). Absolute maximum input: -2mA, +30mA	Analog input (ADV) DC -10V~10V (input resistance 160K Ω). Note: If the input voltage exceeds \pm 15V, the unit will be damaged.
Rated range	4~20mA: 0~2000	-10V~10V: -2000~2000
The maximum display range	-500~2048	-2048~2048
Resolution	8uA[4mA ~20mA / 2000]	5mV[10V default scope 1/2000]
Precision	\pm 0.5% of full scale (4~20mA: \pm 0.08mA)	\pm 0.5% of full scale
AD conversion time	One PLC scanning cycle	
Input characteristics		
Insulation	No insulation in each PLC channel	
Occupied points	None	
Rated range	Analog output (DAI) 4~20mA: 0~2000	Analog output (DAV) -10V~10V: -2000~2000
Analog output	DC 4~20mA (the external load resistance is no less than 500 Ω)	DC -10V~10V (the external load resistance is no less than 2K Ω)
Digital output	12 bit binary	
Resolution	8uA[4~20mA / 2000]	5mV[10V default scope 1/2000]
Precision	\pm 0.5% of full scale	
AD conversion time	One PLC scanning cycle	
Input characteristics		
Insulation	No insulation in each PLC channel	
Occupied points	None	

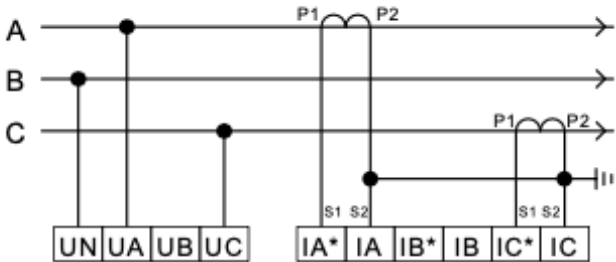


Training set composition

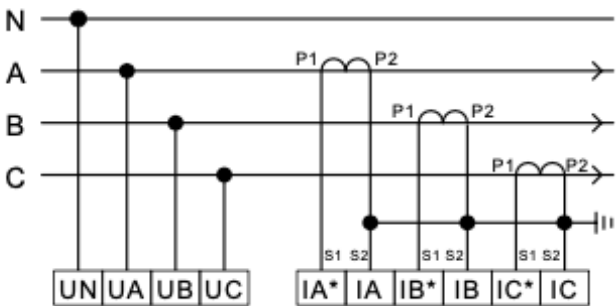
Electricity meter specification



1P2L



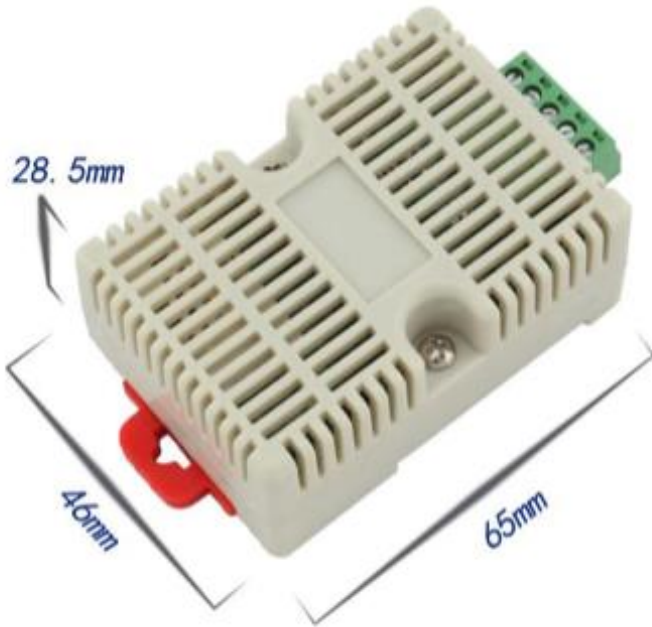
3P3L



3P4L

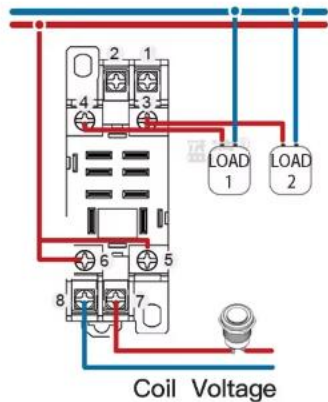
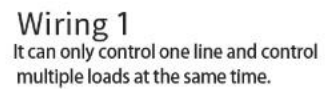
Specifications	Parameters
wiring modes	3P4L/3P3L/1P2L
voltage	rating: AC 110V/220V/400V
	overload: continued 480V, 10s 1000v
	power dissipation: < 1VA
current	rating: 5A
	overload: continued 6A, 10s 10A
	overload: < 1VA
frequency	40 - 70Hz
accurass	voltage\current: 0.2%; other: 0.5%; energy: 1%
temperature drift	< 200ppm
auxiliary power	85-265VAC/110VDC ±15%
communication	RS485 physical layer isolation protocol: modbus-RTU speed: 1200 - 56000bps verification: N81, E81, O81, N82
transformation ratio	PT/CT: 1-5000
digital output(optional)	0-4 10A 250VAC/30VDC
analog output(optional)	0-4 4-20mA
energy pulse(optional)	collector output, fixed pulse width 80ms ±20%
withstand voltage	between input, output and power supply>AC2KV between input, output and incrustation>50MΩ
external environment	operating temperature: -20-60°C storage temperature: -20-70°C relative humidity: 5%-95% altitude: < 3000m

HT RS485 sensor specification

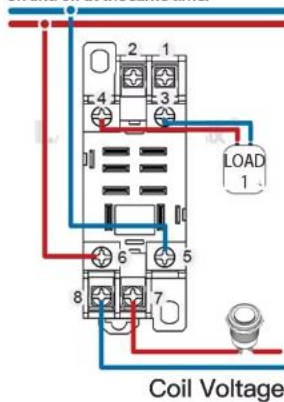


Defult protocol	Humid addr	Temp addr	Slave ID addr	Buadrate addr
4800, 8, N, 1	0 / Decimal	1 / Decimal	2000 / Decimal	2001 / Decimal
	A			Buadrate
	B		0	2400
	10-30VDC		1	4800
	-VDC		2	9600

Relay



Zero live wire or positive and negative pole controlled load power supply can be switched on and off at the same time.



Manual switch

Emergency switch

Pilot Lamp





Thank you