NEOUSYS TECHNOLOGY

NRU-230V-AWP/ NRU-240S-AWP Series

IP66 Waterproof AGX Orin Computer with 8x GMSL2, 4x PoE+ GbE, and 1x 10GbE Ports

Key Features

- **Powered by NVIDIA® Jetson AGX Orin™ SoM bundled with JetPack**
- **IP66 waterproof and dustproof**
- **-25°C to 60°C fanless operation (NRU-230V-AWP)**
  -25°C to 70°C fanless operation (NRU-240S-AWP)
- **Support 8x GMSL2 automotive cameras (NRU-230V-AWP)**
- **4x PoE+ GbE and 1x 10GBASE-T via M12 X-coded connectors**
- **1x RS232, 1x Isolated RS485, and 2x Isolated CAN via M12 A-coded connectors**
- **1x system monitor port by automotive-grade MCU**
- **8V to 48V wide-range DC input with built-in ignition power control**
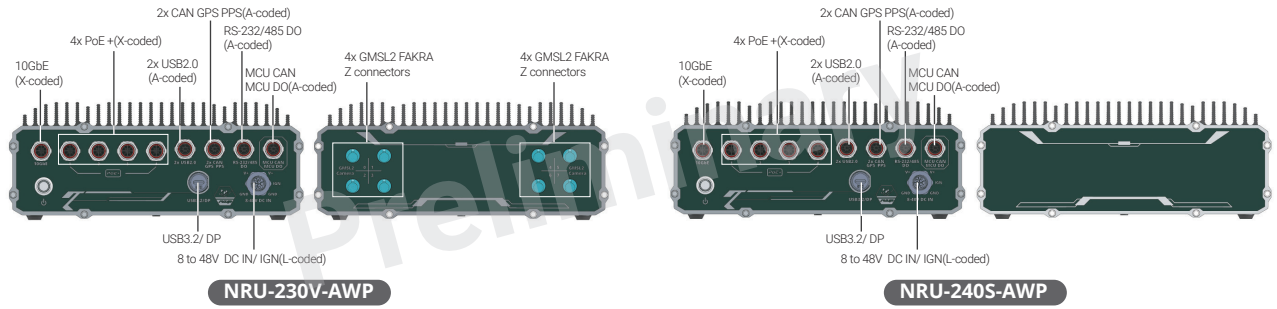
Preliminary

Specifications

	NRU-230V-AWP	NRU-240S-AWP
System Core		
Processor	NVIDIA® Jetson AGX Orin™ system-on-module (SOM), comprising NVIDIA® Ampere GPU and Arm Cortex-A78AE CPU	
Memory	32GB/ 64GB/ 64GB LPDDR5 (JAO 32GB/ JAO 64GB/ JAOi) @ 3200 MHz on SOM	
eMMC	64GB eMMC 5.1 on SOM	
Panel I/O Interface		
GMSL Camera	8x GMSL2 Waterproof FAKRA Z connectors for 8x AC-IMX490 (5MP) @30FPS or 8x AC-IMX390 (2MP) @30FPS	-
Ethernet Port	Port 1 to Port 4: 4x Gigabit Ethernet ports by Intel® I350 via M12 X-coded 8-pin connector Port 5: 1x 10 Gigabit Ethernet port via M12 X-coded 8-pin connector	
PoE Capability	IEEE 802.3at PoE+ PSE for Port 1 to Port 4, 100W total power budget	
USB 2.0	2x USB 2.0 ports via M12 A-coded 8-pin connector	
USB 3.2 + Video Port	1x waterproof USB Type C (USB 3.2 Gen1 and 1x DisplayPort, supporting 3840x2160 at 60Hz)	
Serial Port + DO	1x isolated RS-485, 1x RS-232, and 1x isolated DO via M12 A-coded 8-pin connector	
CAN Bus + DI	2x isolated CAN 2.0, and 1x isolated DI (GPS PPS input) via M12 A-coded 8-pin connector	
System Monitoring	1x isolated CAN 2.0 port and 1x isolated DO via M12 A-coded 8-pin connector by automotive-grade MCU	
Internal I/O Interface		
Mini PCI Express	1x full-size mini PCI Express socket (PCIe + USB 2.0) for WiFi 6 or CAN 1x full-size mini PCI Express socket (USB 2.0) for GNSS or 4G LTE	
M.2	1x M.2 3042/3052 B key (USB 3.2 Gen 1 + USB 2.0) for LTE/5G module with dual micro SIM support	

	NRU-230V-AWP	NRU-240S-AWP
Storage		
SATA HDD	2x internal SATA port for 2.5" SSD installation	
M.2 NVMe	1x M.2 2280 M key NVMe socket (PCIe Gen4x2) for NVMe SSD	
Power Supply		
DC Input	8V to 48V DC input and ignition power control via M12 L-coded, 5-pin connector *	
Mechanical		
Dimension	225 mm (W) x 195 mm (D) x 89 mm (H)	
Weight	TBD	
Mounting	Wall-mount bracket (standard)	
Environmental		
Operating Temperature	-25°C to 60°C (30W TDP mode, with full function stressing)	-25°C to 70°C (30W TDP mode, without 10GbE transmission and PoE Load) **
Storage Temperature	-40°C to 85°C	
Humidity	10% to 90%, non-condensing	
Vibration	MIL-STD-810H, Method 514.8, Category 4	
Shock	MIL-STD-810H, Method 516.8, Procedure I	
EMC	CE/ FCC Class A, according to EN 55032 & EN 55035 EN 50121-3 (EN 50155:2017, Clause 13.4.8)	

The maximum current of each pin is 13A.
*** For sub-zero and over 60°C operating temperature, a wide temperature HDD or Solid State Disk (SSD) is required.*
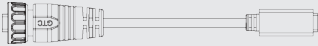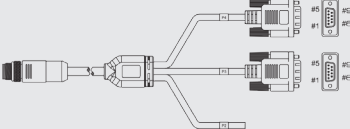
Appearance

NRU-230V-AWP

- 10GbE (X-coded)
- 4x PoE +(X-coded)
- 2x USB2.0 (A-coded)
- 2x CAN GPS PPS(A-coded)
- RS-232/485 DO (A-coded)
- MCU CAN MCU DO(A-coded)
- 4x GMSL2 FAKRA Z connectors
- 4x GMSL2 FAKRA Z connectors
- USB3.2/ DP
- 8 to 48V DC IN/ IGN(L-coded)

NRU-240S-AWP

- 10GbE (X-coded)
- 4x PoE +(X-coded)
- 2x USB2.0 (A-coded)
- 2x CAN GPS PPS(A-coded)
- RS-232/485 DO (A-coded)
- MCU CAN MCU DO(A-coded)
- USB3.2/ DP
- 8 to 48V DC IN/ IGN(L-coded)

Dimensions

Unit : mm

194

194

89

89

225

225

NRU-230V-AWP
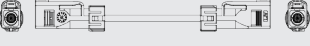
NRU-240S-AWP

Ordering Information

Model No.	Product Description
NRU-230V-AWP-JAO32	IP66 Waterproof Jetson AGX Orin™ (32GB) Computer with 8x GMSL2, 4x PoE+ GbE ports
NRU-230V-AWP-JAO64	IP66 Waterproof Jetson AGX Orin™ (64GB) Computer with 8x GMSL2, 4x PoE+ GbE ports
NRU-230V-AWP-JAOi	IP66 Waterproof Jetson AGX Orin™ Industrial Computer with 8x GMSL2, 4x PoE+ GbE ports
NRU-240S-AWP-JAO32	IP66 Waterproof Jetson AGX Orin™ (32GB) Computer with 4x PoE+ GbE ports
NRU-240S-AWP-JAO64	IP66 Waterproof Jetson AGX Orin™ (64GB) Computer with 4x PoE+ GbE ports
NRU-240S-AWP-JAOi	IP66 Waterproof Jetson AGX Orin™ Industrial Computer with 4x PoE+ GbE ports

Optional Accessories

PA-160W-OW	160W AC-DC power adapter 20V/8A; 18AWG/120cm; cord end terminals for terminal block, operating temperature: -30 to 70°C.
PA-280W-ET2	280W AC/DC power adapter 24V/11.67A; 16AWG/100cm; cord end terminals for terminal block, operating temperature : -30°C to 60°C.
AC-IMX390-H60	Sony IMX390 CMOS sensor camera; 1920x1080 @30fps; LFM; HFOV 63.9°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX390-H120	Sony IMX390 CMOS sensor camera; 1920x1080 @30fps; LFM; HFOV 120.6°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX390-H190	Sony IMX390 CMOS sensor camera; 1920x1080 @30fps; LFM; HFOV 186°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX490-H30	Sony IMX490 CMOS sensor camera; 2880x1860 @30fps; LFM; HFOV 30.0°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX490-H60	Sony IMX490 CMOS sensor camera; 2880x1860 @30fps; LFM; HFOV 62.5°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX490-H120	Sony IMX490 CMOS sensor camera; 2880x1860 @30fps; LFM; HFOV 120°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap

NRU-230S-AWP/NRU-240V- AWP

Type	Model Name	Description
	Cbl-TpCPlug-U3TC-50CM	Waterproof TypeC Male Plug to USB Type-C FML Cable, Length: 50cm
	Cbl-M12A8M-2U2TA-180CM1	Waterproof M12 (8-pole-A-coded) to 2x USB 2.0 type A (female), Length: 180CM
	Cbl-M12A8M-2DB9M_OW2-180CM1	Cable 180cm, Waterproof M12 A-Code Male 8P to x2 DB9 Male+2P
	Cbl-M12X8M-RJ45F-100CM	Waterproof M12 (8-pole-X-coded) to RJ45 Female, CAT6A, Length: 100CM
	Cbl-FAKRA-ZFM-ZFM-12M	Waterproof FAKRA Z-code Female to Waterproof FAKRA Z-code Female, Length: 12M
	FK-FF-CABLE-7M	FAKRA SMB ST. Female Z code to FAKRA SMB ST. Female A code, Length: 700CM

Cable Kit

NRU-230V-AWP or NRU-240S-AWP front panel cable kit		
Cblkit-FP-NRU-230V-AWP_NRU-240S-AWP	1x Cbl-TpCPlug-U3TC-50CM	1x Cbl-M12A8M-2U2TA-180CM1
	3x Cbl-M12A8M-2DB9M_OW2-180CM1	5x Cbl-M12X8M-RJ45F-100CM

NRU-230V-AWP back panel cable kit	
Cblkit-BP-NRU-230V-AWP	8x Cbl-FAKRA-ZFM-ZFM-12M