DEK-120X (Ex) Explosion-proof High-speed Integrated PTZ Camera

Installation and operation manual | Source edition as supplied

Changzhou Derke Electromechanical Equipment Co., Ltd.

English translation of DEK-120XEX.pdf. Source ratings, historical standards and source conflicts are retained. This translation does not update the product specification or issue a new certificate.

Source notes

The mechanical table states IP68 while the construction section states IP67. DIP-switch baud options differ from the general parameter list. Preserve these source differences; confirm the supplied hardware and firmware. Camera identifiers were checked against the source image.

Safety information

Read this manual carefully before installation and use. Install only in an environment meeting the manual requirements and on a secure support. Before energizing, check that the supply matches the equipment nameplate. Do not open the explosion-proof chamber in high humidity: trapped moisture may corrode components and impair image quality. Connect cables as specified. Disconnect power before maintenance or repair. Protect flameproof joint surfaces during disassembly and assembly. Collect circuit boards, electronic components, plastics and lubricants during maintenance or disposal; do not discard them indiscriminately. Transfer them to the relevant environmental disposal service.

Technical parameters from the source

Parameter	Value
Input voltage	220 VAC
Input range	+/-10 (unit omitted in source)
Operating current	<1 A
Power consumption	85 W
Electrical connection	Five-core composite cable for video, power, control; RJ45
Communication	RS-485, RJ45, ONVIF 2.0; configurable baud rate, default 2400 bps; configurable protocol, default PELCO-D
Material	304 or 316L stainless steel
Ingress protection	IP68 in mechanical table
Pan / tilt range	360° / +/-90°
Pan / tilt speed	Approximately 0.1-30°/s in both axes
Net / shipping weight	25 / 28 kg
Overall dimensions	See original dimension drawing
Mounting	Fixed bracket, base or pole
Atmospheric pressure	86-106 kPa
Ambient temperature	-20°C to +60°C
Relative humidity	95% RH at +25°C; inequality symbol unclear in source

1. Overview

Explosion-proof integrated PTZ camera for flammable/explosive gas and combustible-dust environments. The source states that the equipment is designed to GB3836.1-2010 (general requirements), GB3836.2-2010 (flameproof enclosure type d) and GB12476.1-2010 (enclosure and surface-temperature protection for combustible dust). Intended applications include chemical plants, petroleum facilities and grain stores. These are source-document statements, not a new certification.

2. Model and marking

DEK = company code; 120 = product code; X = high-speed model; Ex = explosion protection. Marking: Exd IIC T6 Gb / Ex tD A20 IP68 T80°C.

2. Electrical safety

Under standard test atmospheric conditions, insulation resistance between supply terminals and enclosure shall be at least 100 megohms when measured at 500 VDC. The source specifies a 50 Hz, 2000 V withstand test for one minute without breakdown or flashover.

3. Installation checks

Before installation check: (a) explosion-proof certificate number is present; (b) the protection marking is suitable for the explosive gas mixture; (c) all explosion-proof parts are free from cracks and defects affecting protection; (d) internal and external grounding is reliable. Do not use the equipment if these requirements are not met. Observe the FORWARD mark on the base, or the cable-exit-to-rear orientation. Especially for wall mounting, FORWARD must face open space away from the wall or obstructions.

3. Structure legend

Figure 3-1: 1 sunshield; 2 PTZ body; 3 grounding mark; 4 external cable; 5 base; 6 camera housing; 7 wiper. Drawings use mm.

3. Pole installation

Before installing a pole, cast a concrete foundation with good-quality embedded bolts. Allow a suitable cable opening at the foundation center if required. Install the pole and secure the bolts. Pole height and thickness depend on coverage, wind speed and slope; design for the site or consult the supplier. Draw the reserved cable through the pole opening and fit the junction-box base plate above the cable opening. Face the factory-marked midpoint of horizontal pan travel toward the main observation area and fasten the camera with bolts. Protect camera-to-junction-box wiring with explosion-proof flexible conduit, or use armored cable. Protect junction-box-to-control-room wiring with metal conduit, or lay armored cable directly.

3. Bracket installation

Face the factory-marked midpoint of pan travel toward the main observation area. Check mounting-hole locations against the source base drawing. Protect camera-to-control-box wiring with explosion-proof flexible conduit, or use armored cable. Protect the junction-box-to-control-room run with metal conduit, or use armored cable directly. The source bracket drawing is DEK-B5.

3. Cable preparation

Flexible conduit: unscrew the compression nut at the base and prepare the threaded fitting supplied with the flexible conduit. Tighten the threaded fitting first, then tighten the flexible conduit. Armored cable: strip the outer sheath to the required length to expose the steel armor, retain the necessary armor length and trim the excess. Fit an explosion-proof cable gland according to its Installation and Use instructions. Secure the gland-equipped armored cable directly to the appropriate explosion-proof equipment.

4. System and cable connections

The factory composite cable exits through the base and is at least 1.2 m long. Route it into the junction box and connect it to the system bus. Video may feed a monitor, DVR, picture processor or matrix. If several devices receive one video signal, use a video distributor with gain as required. Controllers must match communication interface and protocol. Some matrix systems need a protocol adapter, and some DVRs need an RS232-RS485 converter. Normally an RS485 bus permits one master; for multiple masters use a supplier-recommended arrangement with control permissions. Factory defaults: address 1, baud 2400, PELCO-D. Power is 220 VAC plus protective earth G; communication is RJ45. The wire-color cells are not legible in the supplied scan; do not infer colors.

5. Decoder board - special presets

Presets 65-99 are special: 65 PTZ system; 66 camera type; 67 IR control; 68 full-circle scan; 69 line scan; 70 preset patrol; 71 pattern scan; 72-73 reserved; 74 software-address setting; 75 camera parameters; 76-77 have no clearly readable function in source table; 78 image mirroring; 79 PTZ reset; 80-94 reserved; 95 menu; 96-99 reserved.

5. PTZ system configuration

Call 65, then the subpreset within 15 seconds. 1/2: proportional speed reduction ON/OFF; 3/4: automatic flip ON/OFF; 5/6: language-configuration switch ON/OFF; 7/8: automatic communication-protocol recognition ON/OFF; 9-10: reserved; 11/12: software-address enable ON/OFF; 13/14: PELCO-P preset-offset enable ON/OFF (printed PECOL-P in source); 15/16: reverse horizontal control ON/OFF; 17/18: reverse vertical control ON/OFF; 19/20: OSD menu ON/OFF; 21: restore factory settings; 22: restore system clock settings. Subpresets 23-255 reserved.

5. Camera parameter configuration

After calling preset 75, call the subpreset within 15 seconds. 1: camera menu (camera support required); 2/3: camera display ON/OFF; 4/5: digital zoom ON/OFF; 6/7: backlight compensation ON/OFF; 8/9: automatic/manual focus; 10-255: reserved.

5. Camera type configuration

Call 66, then a subpreset within 15 seconds: 1 automatic identification; 2 SONY18X; 3 CNB22X; 4 SAMSUNG231; 5 HITACHI454; 6 SANYO400; 7 SAMSUNG330; 8 CHITACHI; 9 LGX; 10 SANYO600; 11 SANYO800; 12 SONY26X; 13 SONY36X; 14 HITACHI654; 15 NEWLG23X; 16 NEWCHITACHI; 17 SAITUO; 18 HITACHI214; 19 CNB2260X; 20 reserved; 21 KPC_CAM; 22 LG_CAM_AXVIEW; 23 Weixian X1693; 24 SCM_2251; 25 Weixian 27PN; 26 Weixian 30PN; 27 Weixian X1893; 28 CNBZCN_21Z22F; 29 CNB_SS_803LD; 30 LM_923D; 31 NEWLG37X; 32 LM_937D; 33 LG22X; 34-255 reserved. Retain the original camera identifier strings when selecting firmware types.

5. IR operation

After calling preset 67, call the subpreset within 15 seconds. 1-6: IR detection sensitivity levels 1-6; 7: automatic IR; 8: manual IR ON; 9: manual IR OFF; 10: timed IR; 11: camera-controlled IR; 12: automatic IR brightness; 13-16: reserved; 17: initialize IR; 18/19/20: low/medium/high brightness; 21/22: IR synchronization ON/OFF; 23: synchronization-time setting, Call 67+23+XXX; 24-255: reserved.

5. Running scans and patrols

Call an entry preset, then its subpreset within 15 seconds: 68 + 1-8 starts full-circle scans 1-8; 69 + 1-16 starts line scans 1-16 (17-255 reserved); 70 + 1-9 starts preset patrols 1-9; 71 + 1-4 starts pattern scans 1-4 (5-255 reserved).

5. DIP switches and parameters

Address DIP switch: SW1-1 through SW1-8. Baud-rate DIP switches SW2-2/SW2-3: 0/0=1200, 1/0=2400, 0/1=4800, 1/1=9600 bps. The separate parameter list gives presets 1-255 except special-function presets, baud rates 2400/4800/9600/19200, and PELCO-D/P protocols; other protocols may be customized.

Explosion-proof construction

The enclosure is designed so an internal explosion does not ignite the surrounding explosive mixture. Protection depends on enclosure strength, flameproof-joint gaps and lengths, and maximum surface temperature. After welding and finish machining, the source specifies a GB3836.2 hydrostatic test at 2 MPa for 10-12 seconds, with no leakage, structural damage or deformation. Maximum enclosure surface temperature during normal operation is 80°C. The tempered-glass window shall withstand impact and thermal-shock tests. Enclosure protection is IP67. A compression-nut cable-entry device clamps the cable firmly without loosening.

Troubleshooting

No image: check that power is connected and supplied correctly; check for poor video-signal cable contact. Intermittent image: check the video-signal cable connections.

Transport and storage

The packaged product may be transported by any method provided it is protected from direct rain and snow. The source permits storage for more than one year at 0°C to +40°C and relative humidity not exceeding 90%.

Warranty

The source promises replacement within six months and a one-year warranty. Free repair is provided during the warranty period, but material and labor charges may apply to damage caused by operation contrary to the manual, unauthorized disassembly, lightning or unavoidable natural disasters. Any separate written service commitment or agreement between the company and user takes precedence.

Company statement

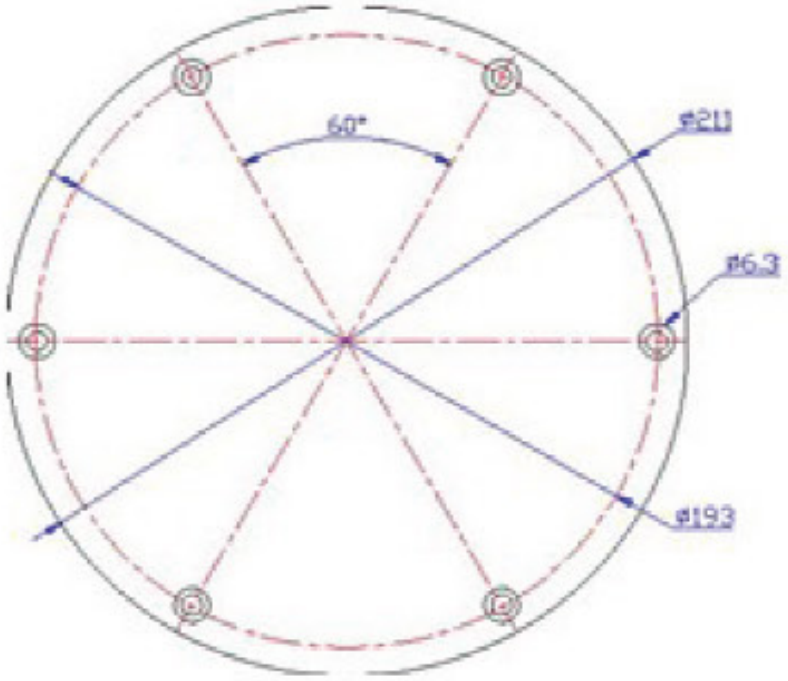
The company reserves interpretation rights concerning changes to product design and specifications without prior notice. Copyright belongs to Changzhou Derke Electromechanical Equipment Co., Ltd.; no organization or individual may reproduce or copy any part or all of the manual without permission. Source contact: +86 519 88059627; fax +86 519 88059629; website www.dekcn.com.

Reference illustrations

Original dimension drawings and interface screenshots are retained for reference. Original-language labels may remain inside these images; the English operating text and legends explain them. Dimensions are copied from the supplied source, not redrawn or recalculated.

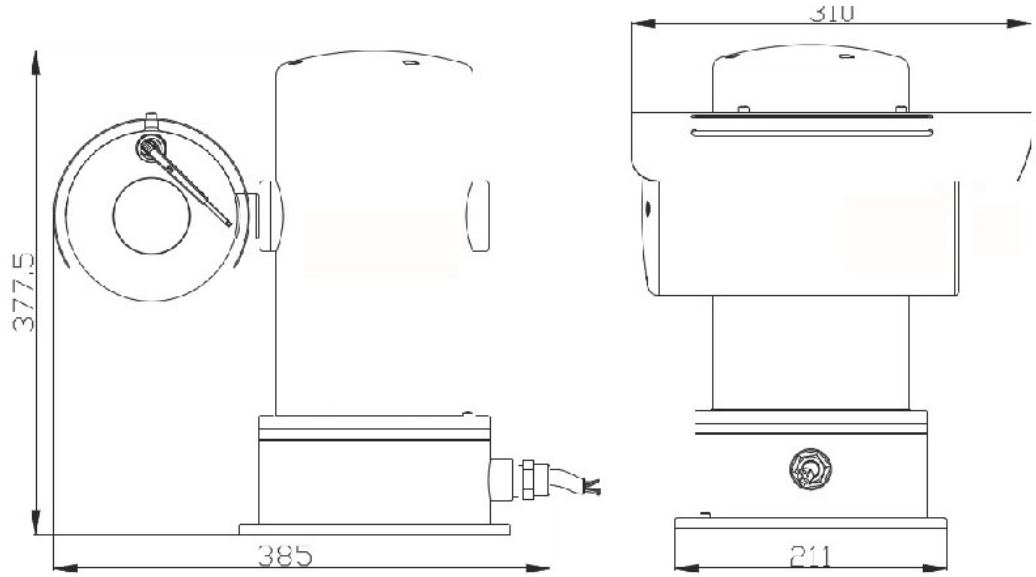
Figure 1. Source page 5: Base mounting dimensions, mm.

'电压工频电压试验，一分钟，且无击



云台接线向后）。如果摄像仪采用壁
壁或者障碍物以外的开阔区域。

Figure 2. Source page 6: Overall dimensions, mm.



单位：mm

结构见图3-1

Figure 3. Source page 6: Structure, Figure 3-1; see English numbered legend.

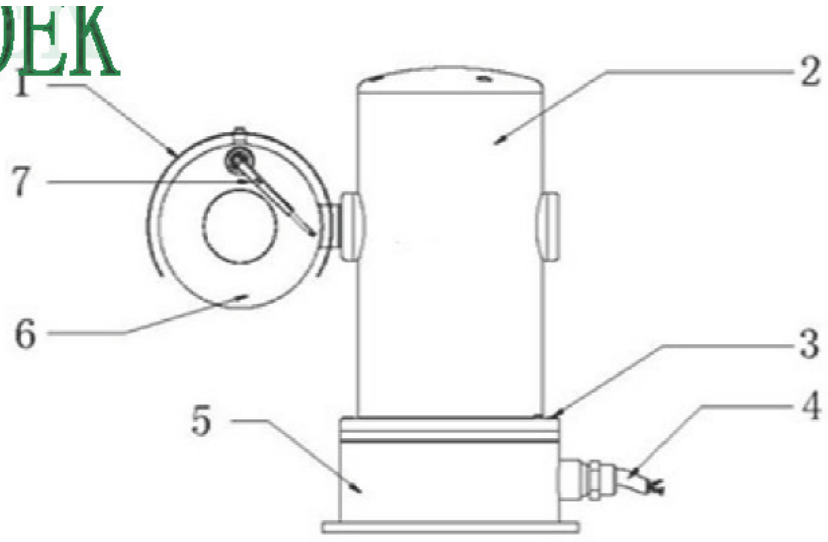
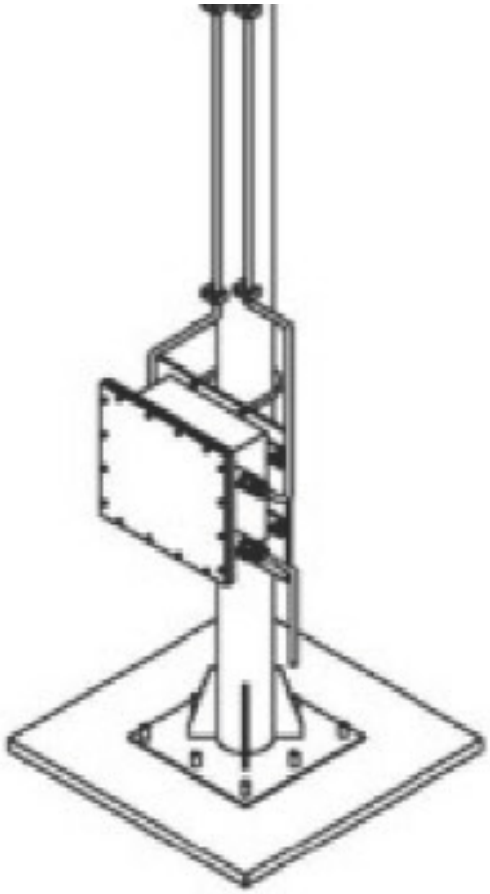


图3-1

说明：1.遮阳罩　2.云台主体　3.接地标识　4.云台外部线缆
5.底座　6.摄像机护罩　7.雨刷

Figure 4. Source page 7: Pole installation.



必须使用防爆挠性管加以保护（也可使用铠装

Figure 5. Source page 7: Wall-bracket installation.

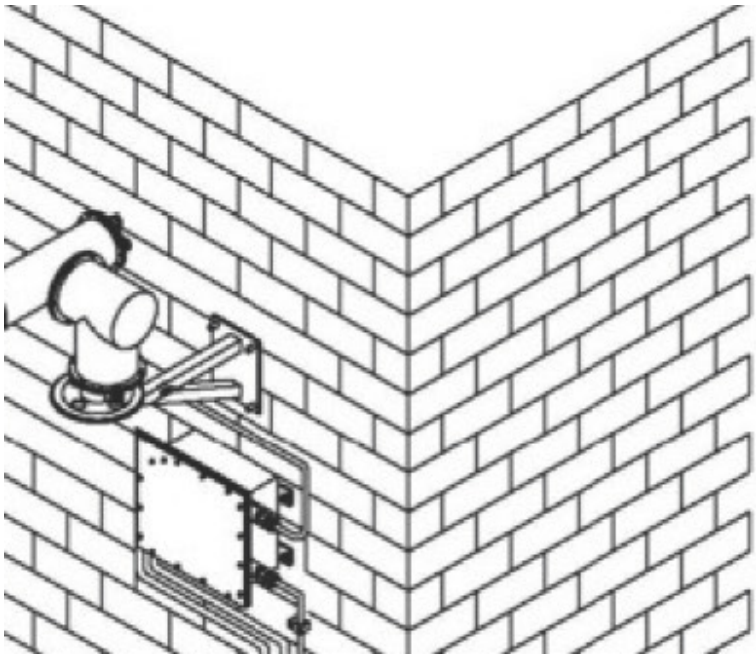
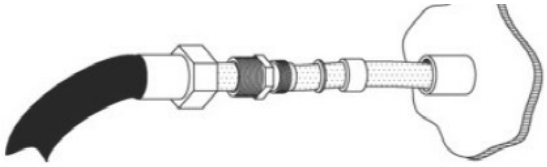
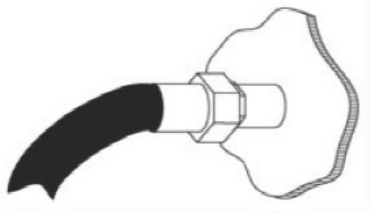


Figure 6. Source page 8: Flexible conduit and armored cable preparation.



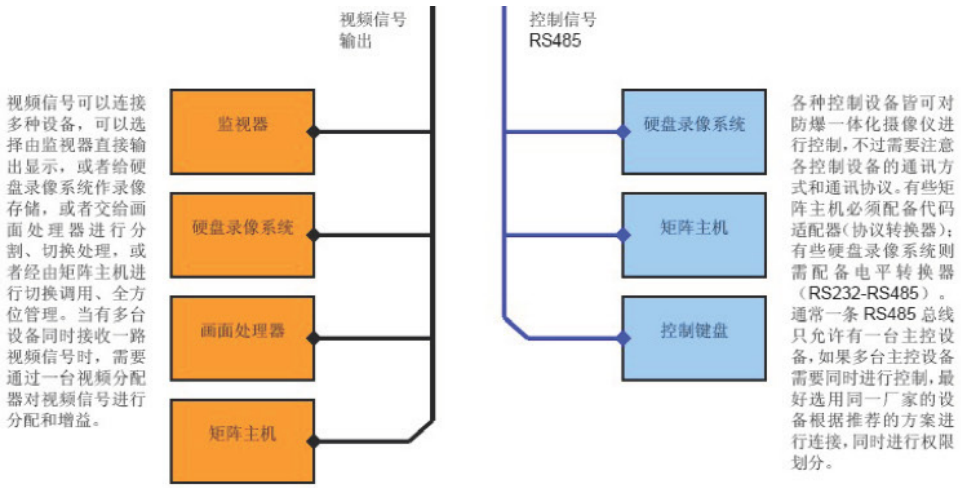
b. 先拧紧螺纹接头，再拧紧防爆挠性管。



3.2 使用铠装电缆

a. 根据实际需要，剥去适当长度的电缆外护套，露出金属铠装皮（钢带）；留取一定长度的钢带，切除多余的部分。

Figure 7. Source page 9: System connection diagram; see English system connections section.



4.2 电缆定义

出厂时DEK-120X(Ex) 防爆一体化摄像仪配备了一根综合电缆*，该电缆从摄像仪底部出线孔引出，长度不小于1.2米；在使用时，只需要将综合电缆引入接线盒，与系统总线进行对接即可。

电缆定义：

Figure 8. Source page 16: Baud-rate DIP-switch table; SW2-2 and SW2-3.

协议	SW2-2	SW2-3
1200B	0	0
2400B	1	0
4800B	0	1
9600B	1	1