DIP-34A-04

Analogue Addressable Photoelectric Smoke Detector

INSTRUCTION MANUAL

GENERAL

DIP-34A-04 Analogue Addressable Photoelectric Smoke Detector (hereinafter referred to as the DIP-34A-04 or the detector) is to be used in a fire alarm system. It is designed to detect fires which come with appearing of smoke within closed spaces.

The DIP-34A-04 operates under control of the S2000-KDL or S2000-KDL-2I controller which the detector is connected to and which supplies power and communicates data with the DIP-34A-04 via the two-wire multiplex addressable polling loop. Up to 127 DIP-34A-04 detectors can operate under a single S2000-KDL or S2000-KDL-2I.

The DIP-34A-04 detects smoke inside its sensing chamber by sensing light reflected by smoke particles and responds with its state to the S2000M console or Orion Pro software via the S2000-KDL or S2000-KDL-2I controller. Depending on detected smoke amount these states can be Norm, Fire Prealarm or Fire Alarm.

In addition, the detector can respond to the console's request with a current condition of its sensing chamber which corresponds to its smoke or dust level. Based on this answer, an Operator of the console can make a decision about maintenance works or waiting for a Fire Pre-alarm message in case of appearance of smoke at the beginning of a fire.

The DIP-34A-04 supports DPLS_v2.xx Multiplex Addressable Polling Loop Protocol enabling monitoring addressable loop voltage at the detector's location. The version of DIP-34A-04 software is 1.01.

The detector operability must be periodically tested either by using test aerosol (as described below) or by means of a laser test tool (such as the test tool produced by the System Sensor Company).

The DIP-34A-04 is equipped with a short circuit isolator (BRIZ).

The detector is supplied with a protective cover and an "Address:" label.

SPECIFICATIONS

Sensitivity	0.05 - 0.2 dB/m (1.2 %/m to 4.7 %/m)
Response Time	10 s max
Ingress Protection Rating	IP 41
Input Voltage (from an S2000-KDL(-2I))	8 ÷ 11 V dc
Current Consumption (via the loop of the S2000-KDL(-2I))	0.5 mA max
Pre-operation Time	60 s max
Operating Temperatures	−30 to +55℃
Storage Temperatures	−50 to +50℃
Humidity	93% at +40℃, non-condensing
Overall Dimensions (diameter x height)	100×47 mm max
Weight	0.2 kg max
Average Lifetime	at least 10 years

WIRING

Figure 1 shows the connection diagram for connecting a DIP-34A-04 detector to the addressable polling loop of an S2000-KDL or S2000-KDL-2I controller. The first terminal of the mounting base can be used to connect a cable screen.
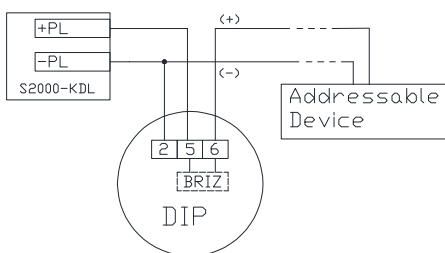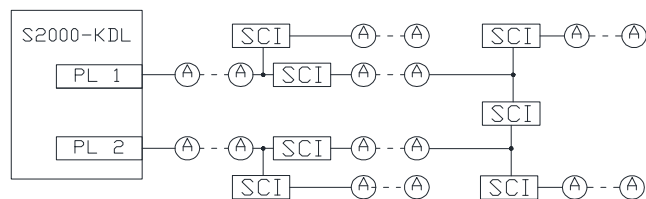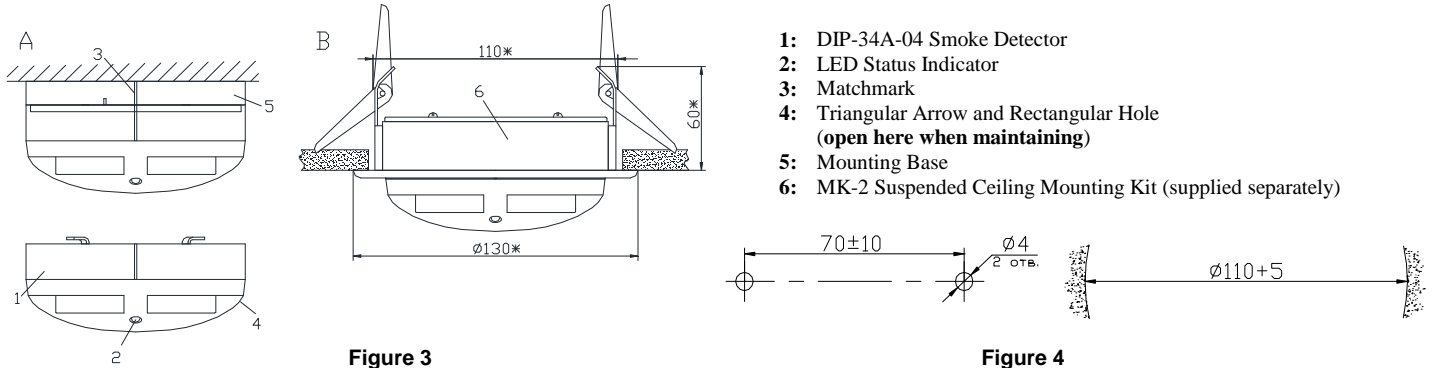

Figure 1

Figure 2

Figure 2 shows the concept of design for a multiplex addressable polling loop of an S2000-KDL or S2000-KDL-2I if BRIZ short circuit isolators are in use.

MOUNTING

A DIP-34A-04 is to be mounted in accordance with your applicable local standards, codes, regulations, and ordinances. If the detector is mounted on a ceiling at a distance of no more than 4.5 m from the wall and the height of the ceiling doesn't exceed 3.5 m then the protected area is about 85 square meters.

There are two ways to mount the detector (see Figure 3). To install the detector to a solid surface (variant **A**) use the mounting base provided (see the drilling pattern in Figure 4). In addition, you can order MK-2 mounting kit (variant **B**) to attach the detector to a suspended ceiling (see the diameter of the mounting hole in the suspended ceiling in Figure 4).

1: DIP-34A-04 Smoke Detector
2: LED Status Indicator
3: Matchmark
4: Triangular Arrow and Rectangular Hole
(**open here when maintaining**)
5: Mounting Base
6: MK-2 Suspended Ceiling Mounting Kit (supplied separately)

Figure 3   **Figure 4**

To attach the detector to the mounting base, place the detector into the base and rotate clockwise until the detector drops into place and the matchmark moulded in the detector lines up with the short mark on the mounting base. Continue rotating clockwise until the matchmark on the detector lines up with the matchmark 3 as shown in Figure 3 (A) and the detector locks into place.

PROGRAMMING

In order the DIP-34A-04 to operate properly within the two-wire addressable polling loop of the S2000-KDL or S2000-KDL-2I controller, it must be assigned to a unique number from 1 to 127 within the loop – to the address which is stored in the DIP-34A-04 non-volatile memory. This address provides identifying the detector by the controller. Moreover, a monitoring strategy must be defined which will be used by the controller while processing signals received from the DIP-34A-04.

Programming the DIP-34A-04 Address within the S2000-KDL/S2000-KDL-2I Addressable Loop

A DIP-34A-04 is supplied with the default address of 127. This address value can be changed using either S2000(M) console tools or PC tools such as UProg Configuration Tool.

In order to program the unique DIP-34A-04 loop address connect the detector to a S2000-KDL/S2000-KDL-2I controller which in turns is connected to a network controller (a S2000(M) console or PC under UProg software). Then send one of the following commands to the loop controller (for getting more information see the relevant User's Manual):

Change the Device Address	Use the *Change Device Address* command specifying the old detector address and the new detector address as the parameters (see more information in the referred Manuals). The network controller will display the messages about disconnecting the device with the old address and then detecting the device with newly programmed address.
Program the Device Address	If the device address is unknown or two devices have the same address then use the *Program Device Address* command specifying a required address as the parameter. Then within 5 min press the detector light emitter or send the laser test tool beam into it. The message about detecting the device with the newly assigned address shall be displayed by a network controller (S2000(M)) or UProg Configuration Tool.

After programming write the set address of the detector on the "Address" label provided and stick it on the detector base.

Programming the S2000-KDL/S2000-KDL-2I to Operate the DIP-34A-04

To handle signals from a DIP-34A-04 correctly, an S2000-KDL/S2000-KDL-2I controller must be programmed with the *Zone Type* parameter for this DIP-34A-04 being set to the value 1 (*Smoke*) or 8 (*Smoke Analogue Addressable with Variable Thresholds*). To program the S2000-KDL/S2000-KDL-2I, connect it to a PC under UProg Configuration Tool and follow the relevant programming instructions in accordance with the S2000-KDL/S2000-KDL-2I User's Manual.

ROUTINE TESTING

⚠️ Before testing the DIP-34A-04, please disconnect executive outputs of all system devices and modules that can release an extinguishing agent or activate light and sound alarms. Notify the proper authorities that the system is undergoing maintenance.

After testing verify that all the detectors are ready to operate properly. Then restore operability of all the system components disconnected before testing and notify the proper authorities that the system is back in operation.

All the equipment used in testing must be known functioning.

1. Turn on the network controller and the S2000-KDL controller. The light emitter of the detector shall light steady. When the communications between the detector and S2000-KDL is established the light emitter will flash once per 4 seconds indicating Norm status of the detector.

2. Take a can of test aerosol and spray some of the test material into the detector. The network controller shall display *Fire Alarm* message for the device with the address of the DIP-34A-04. The detector's LED shall flash twice every 4 s.

3. Alternately, you can perform a simplified test by pressing the detector light emitter or lighting it with the laser beam of a laser test tool. This will cause solid lighting of the detector light emitter for 3 s followed by its double flashing every 4 s.

4. The network controller will display a:
   − *Fire Alarm* message for the device with the address of the DIP-34A-04 if the version of the S2000-KDL in use is 1.35 or below, or
   − *Test* message or *Fire Alarm* message (depending on the current test mode) when the version of the S2000-KDL in use is 1.36 or higher (see the Manuals for the S2000-KDL controller and the network controller for more information about testing)

5. When the test aerosol disappears (or light emitter is released, or laser test tool is disposed) the detector must be in the Norm status. If the S2000M console or Orion Pro software has displayed no messages mentioned above or the detector's LED behaves in a different way than mentioned above then the detector is unhealthy and must be replaced.

LED INDICATION

Flashing once per 4 s	Norm
Four-time flashing once per 4 s	Programming an address
Double flashing once per 4 s	Fire Alarm or Test
Solid light	Waiting for establishing a connection with the S2000-KDL Pushing the LED or applying the laser test tool beam to the LED
Other	Trouble

MAINTENANCE

At least annually inspect the screen assembly under the detector cover. If there is any dust on the screen assembly, clean this one with a vacuum cleaner (by pumping air).

When a *Service Required* message is received from the detector remove the dust from the sensing chamber.

In accordance with your rules of maintenance, maintain the detector as part of your fire alarm system.

WARNINGS

⚠️ **To avoid contamination of the detector, please DO NOT remove the protective cover until the surrounding area is cleared from dirt and dust.**

DO NOT remove the detector's PCB because this automatically cancels the warranty.

DO NOT mount the detector within the premises where air velocity values exceed 15 m/s.

BOLID ONE YEAR LIMITED WARRANTY

Bolid Company and its divisions and subsidiaries («Seller»), 4 Pionerskaya Str., Korolev 141070, Moscow Region, Russia warrants its security equipment (the «product») to be free from defects in materials and workmanship for one year from date of original purchase, under normal use and service. Seller's obligation is limited to repairing or replacing, at its option, free of charge for parts or labor, any product proven to be defective in materials or workmanship under normal use and service. Seller is not responsible for results where the product is used improperly, where it is used for any application it is not intended for, used under unacceptable environmental conditions and mishandled or stored under improperly. Seller shall have no obligation under this warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than the Seller. In case of defect, contact the security professional who installed and maintains your security equipment or the Seller for product repair.

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Seller does not represent that the product may not be compromised or circumvented; that the product will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the product will in all cases provide adequate warning or protection. Buyer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, fire or other events occurring without providing an alarm, but it is not insurance or guarantee that such will not occur or that there will be no personal injury or property loss as a result. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARDLESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER. This warranty gives you specific legal rights, and you may also have other rights which vary from country to country. No increase or alteration, written or verbal, to this warranty is authorized.