Panasonic

Fire alarm systems
Analog photoelectric smoke detector 4401

- Service signal at a fixed level of contamination
- New advanced algorithms and functions and yet compatible with older EBL systems

General

The photoelectric (optical) smoke detector has a low profile housing. The latest IC technology will secure the highest reliability possible. It has **unleaded soldering**. The smoke detection chamber has a high-efficient optical system with an infrared light LED and a photodiode with two lenses. Light reflection is used to detect smoke, which enters the detection chamber through an insect filter and an optical labyrinth.

The detector is supplied with two red LEDs that will be blinking when the detector has activated alarm. It also has a green polling LED. The detector is plugged in an analog base (3312x / 4313 / 3379). The COM loop is connected to the base, which also can have terminals for an external LED, e.g. 2218. The detector is intended for indoor use in dry premises and in the systems EBL128 / 512 / 512 G3.

Service signal

In case of contamination a service signal will be given when the detector has reached a service level.

Address / Detector mode

The address setting tool 3314 / 4414 is used to set the detector's COM loop address and the detector mode; Advanced, NORMAL, 2330 or 2312. See Planning Instructions for the system respectively for more information about the modes and functions. By delivery the detector is set to address 000 and the NORMAL mode.

- **Advanced** mode (analog): In this mode the fire judgement is done in the detector. Can be used in EBL512 G3 and EBL128 versions $\geq$ 2.0. Address setting tool **4414** is required.
- **NORMAL** mode (analog): In this mode the fire judgement is done in the c.i.e. (one of six smoke algorithms). Can be used in the systems EBL128, EBL512 version $\geq$ 2.0 and EBL512 G3. Also as a spare part for the detectors 3304 and 4301 in NORMAL mode.
- **2330** mode (conventional): In this mode the fire judgement is done in the detector. Can be used in older systems and EBL512 as a spare part for the detector 3304 in 2330 mode.
- **2312** mode (analog): In this mode the fire judgement is done in the c.i.e. Can be used in the system EBL512 as a spare part for the detector 3304 in 2312 mode.

Advanced mode

Artificial **I**ntelligence uses smoke sensing for the fire judgement, as well as variable sensitivity and time delay based on the smoke changes just before the alarm level is reached. This will secure the real fire alarms and reduce the not wanted nuisance alarms.

A **learning function** will after a **learning period** adapt an **alarm algorithm** suitable for the smoke conditions where the detector is located, i.e. an alarm algorithm for:
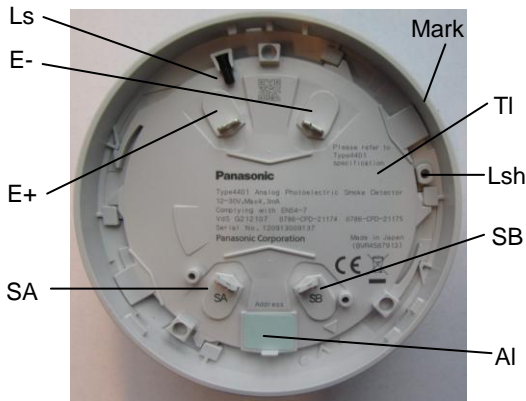
Normal area (default)
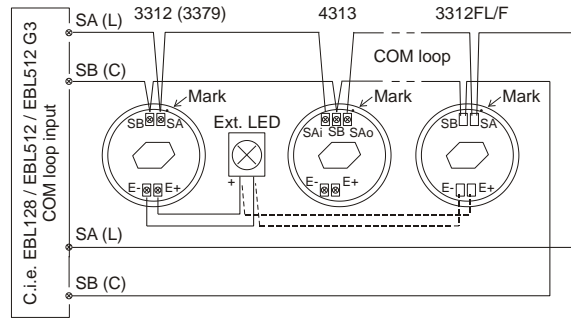**Smoke-steam** area (longer delay time)
Clean area (higher sensitivity)

BVQi
ISO 9001

Type number	
4401	Analog photoelectric smoke detector

The detector is plugged in the analog base 3312x / 4313.
The COM loop / Ext. LED are connected to the analog base.

See also "Engineering Instructions for detectors Type 440x".

In the detector:

SA/SB Contact pins for COM loop / Address setting tool 3314 / 4414.

E+/E- Contact pins for External LED (e.g. 2218).

TI Type number label; Detector type.

AI Address label; For the programmed COM loop address to be written.

Lsh Locking screw hole (prepared for drilling through detector body).

Ls Locking screw.

Prepared for mechanical locking with analog base 3312x / 4313. One hexagon socket screw (Ls) is attached (1.5 mm Hex key to be used). The 2.5-2.7 mm hole (Lsh) has to be drilled.

NOTE! The green polling LED is blinking 20ms / 6s – if this option is programmed.
The green polling LED position is close to the "Mark" on the detector side.

Technical data	
Voltage (V DC)	
...rated	28
allowed	12-30
normal (on COM loop)	24
Current consumption at nom. volt. from COM loop (mA)	
quiescent	0.3 (plus 0.025 if green polling LED is used)
active (incl. internal LEDs)	1.3 (LEDs are blinking 0.25s / 0.75s)
ext. LED (connected via base)	0.5 (Ext. LED is blinking 0.25s / 0.75s)
Ambient temperature (°C)	
operating	-10 to +50
storage	-25 to +75
Ambient humidity (% RH)	max. 95, non condensing
Ingress Protection rating (estimated)	IP 51
Sensitivity (obscuration; %/m)	Depending on mode.
Advanced mode [1]	**3.5** / 3.5 / 2.6
NORMAL mode	3.6 / **3.0** / 2.4 (Low / **Normal** / High)
2330 mode	3.5
2312 mode	2.6
Size ∅ x h (mm)	102 x 34
Weight (g)	75
Construction / Colour	Polycarbonate Alloy / Grey (N8, Munsell colour code)
Approvals	CE 12 EC Certificate no. 0786-CPD-21174 / -21175; EN54-7:2000 + A1:2002 + A2:2006 (smoke)

[1] **Normal** area / Smoke-steam area / Clean area

All technical features and data are subject to changes without notice, resulting from continuous development and improvement.

Product Leaflet	Date of issue	Revision / Date of revision
MEW01405	2012-10-26	1 / 2012-11-21