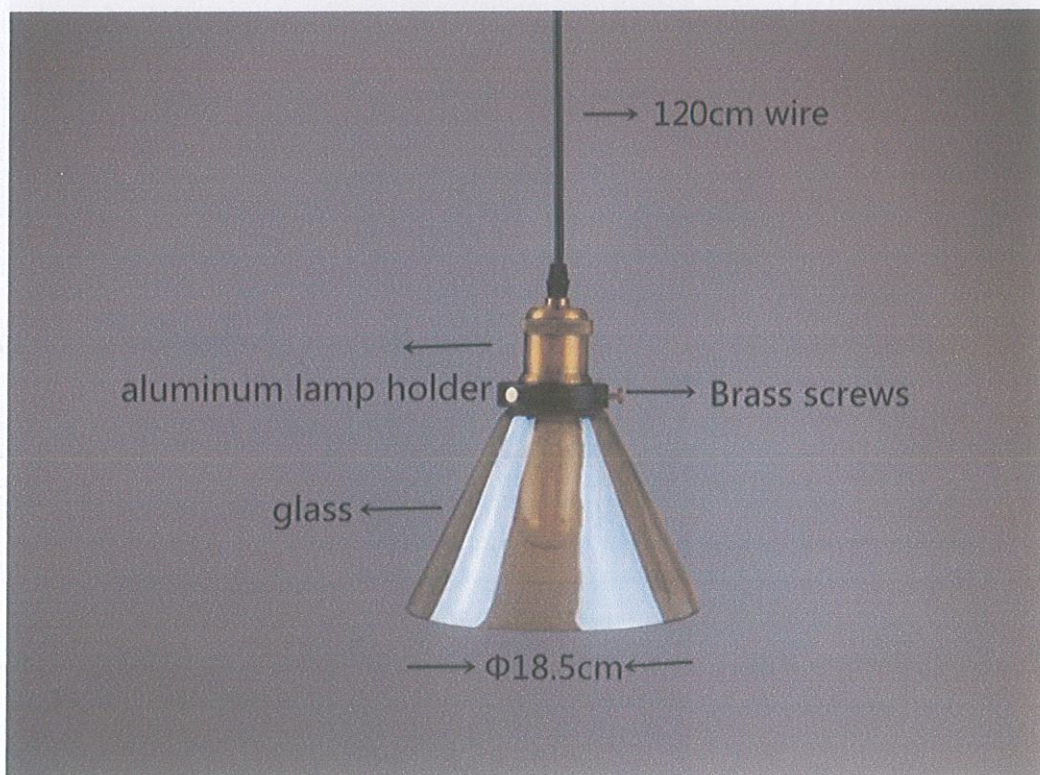
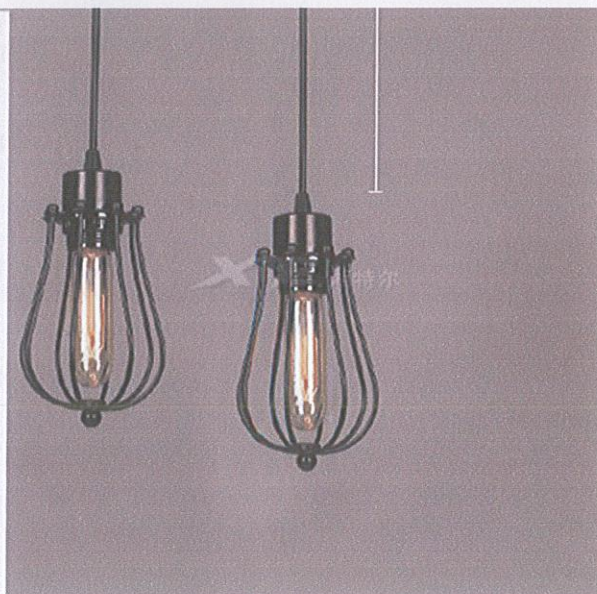
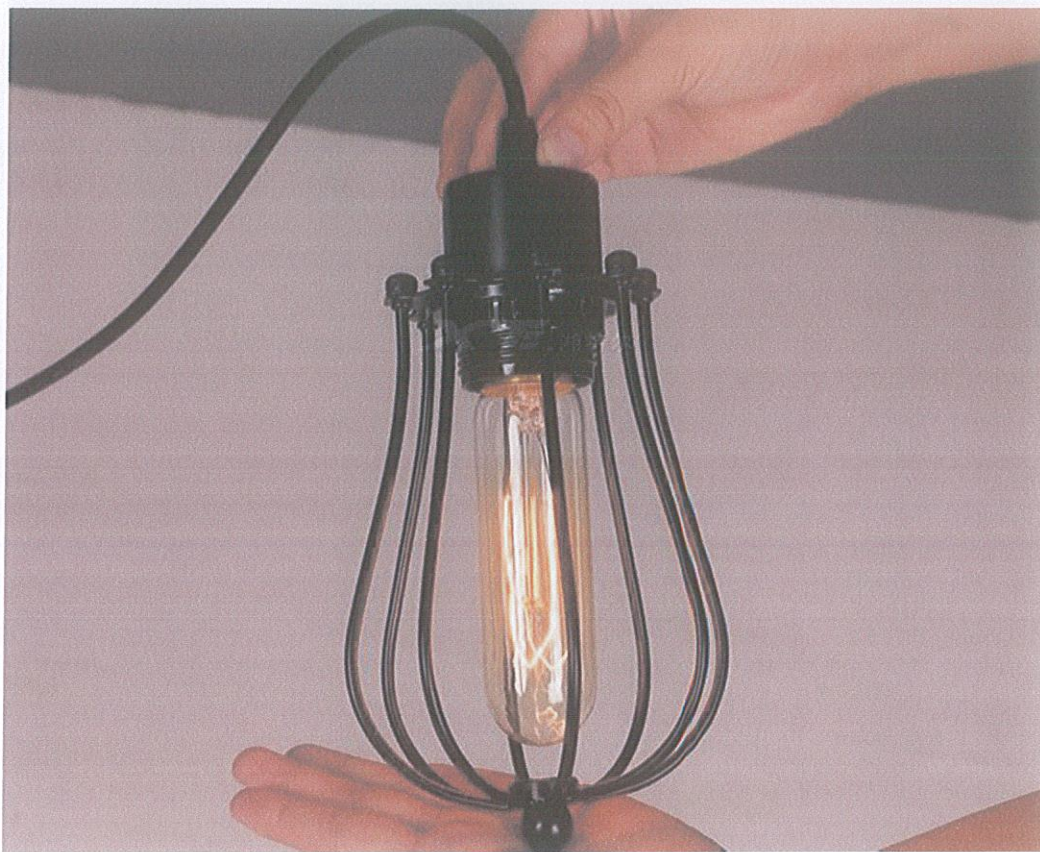


Pielikums Nr.1 – Gaismekļu tipi

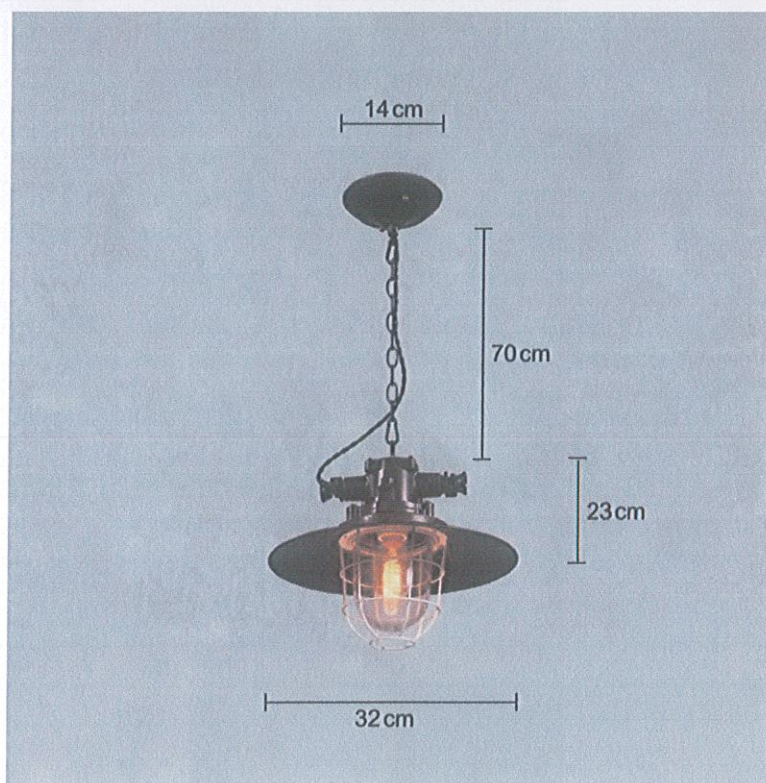
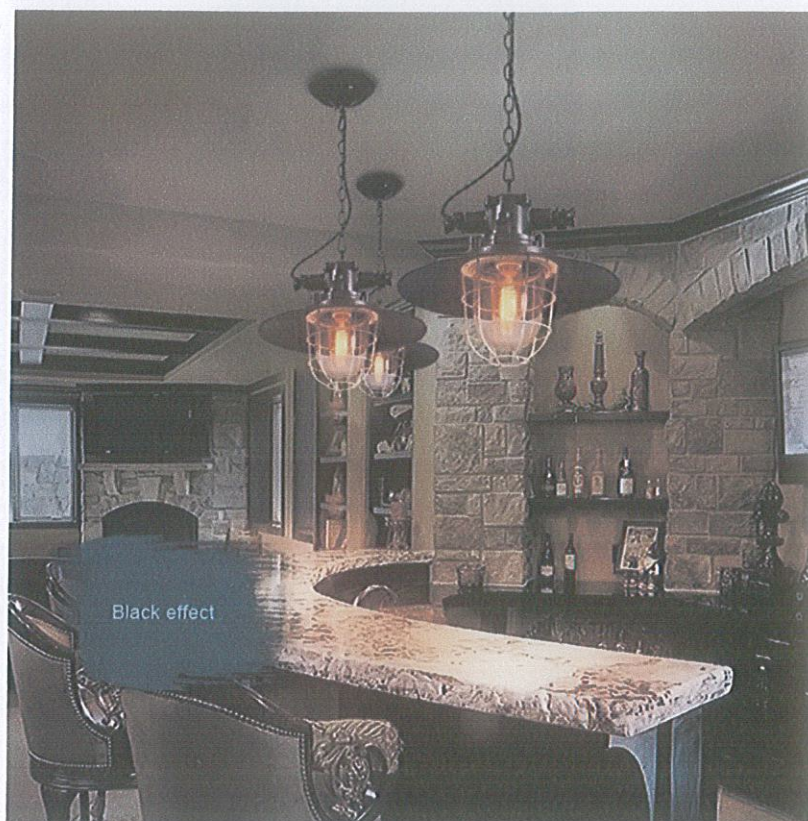
Tips Nr.1



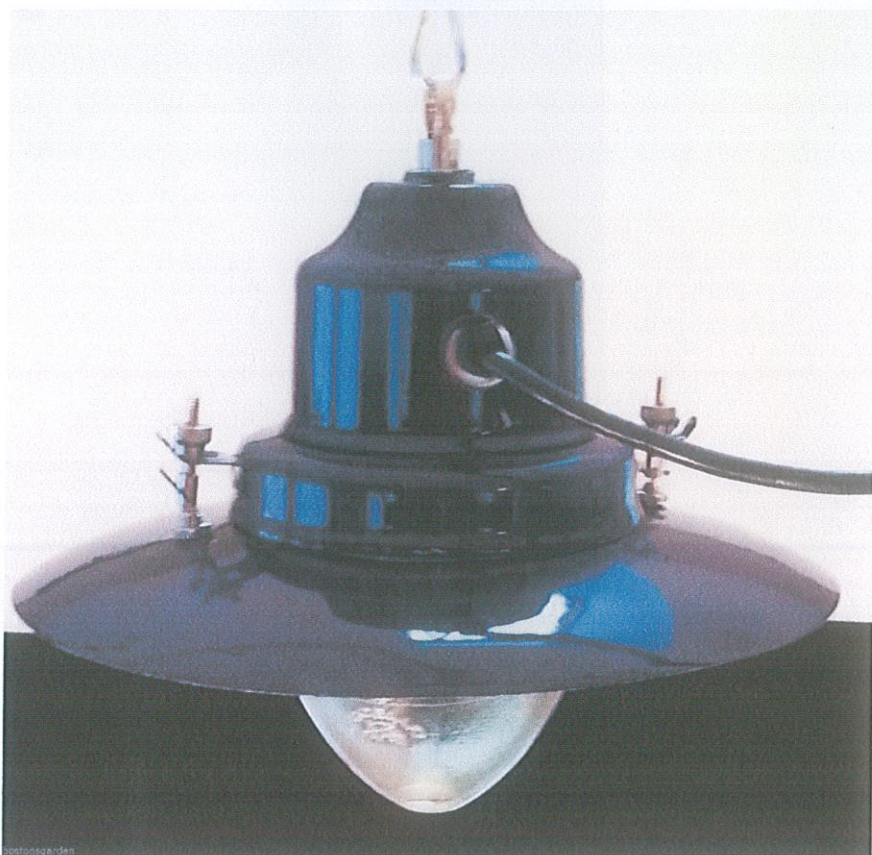
Tips Nr.2



Tips Nr.3, IP6...



Tips Nr.4



Tips Nr.5



Tips nr.6



Tips Nr.7



Norādīti ir gaismekļu dizaini, ja nav iespējams iegādāt konkrēto gaismekli, ir pieļaujamas dizaina atkāpes, bet tās iepriekš jāsaskaņo ar pasūtītāju un autoru autoruzraudzības kārtā.

Pirmajā tabulā norādītas adreses, no kurienes iegūtas gaismekļu bildes.

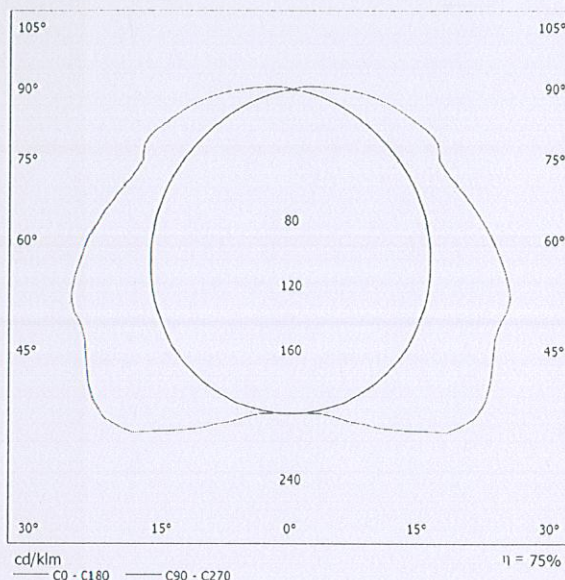
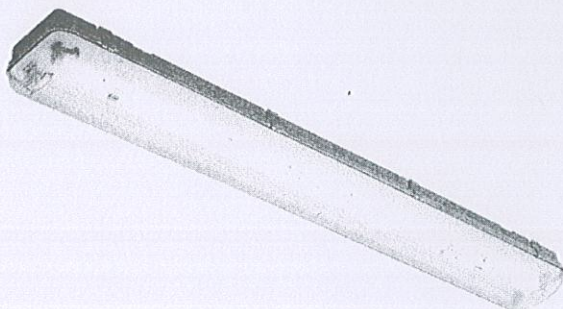
1. tabula

Tips Nr.1 – koplietošanas telpa	<u>Adrese Nr.1</u>
Tips Nr.2 – gaiteni un koridori	<u>Adrese Nr.2</u>
Tips Nr.3 - darbnīcas	<u>Adrese Nr.3</u>
Tips Nr.4 – pie durvīm ārā	<u>Adrese Nr.4</u>
Tips Nr.5 - bēniņi	<u>Adrese Nr.5</u>
Tips Nr.6 – 2.st. virs galda, pie loga	<u>Adrese Nr.6</u>
Tips Nr.7 – virtuves niša	<u>Adrese Nr.7</u>
Tips Nr.8 – 2.st. gaiteni	<u>Adrese Nr.8</u>
Tips Nr.9 – dzīvojamās telpas	<u>Adrese Nr.9</u>

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OMS TORNADO PC REF 2x36W / Luminaire Data Sheet

Luminous emittance 1:



Luminaire classification according to CIE: 97
 CIE flux code: 43 75 92 97 75

TORNADO PC DIF/REF

Mounting:
 Ceiling surfaced
 Ceiling Suspended

Lamps:
 Linear fluorescent lamp FDH
 Linear fluorescent lamp FD

Optical system:
 Diffuser
 Additional top reflector (version REF) on request – symmetrical or asymmetrical

Light distribution:
 Direct

Wiring:
 Electronic control gear (EEI=A2)
 ON REQUEST: Dimmable electronic control gear (EEI= A1– 1-10V/switch DIM/DSI/DALI)

Materials:
 Housing: inject polycarbonate, grey
 Diffuser: inject polycarbonate, clear
 Clips: polycarbonate or stainless steel (inox)
 Installation plate: metal sheet, surface finish – white (RAL 9003)

Accessories:
 On request:
 Suspension accessories
 PG 13,5 grommet
 Connectors on cable: 3-pole –Wieland gesis RST 20i3

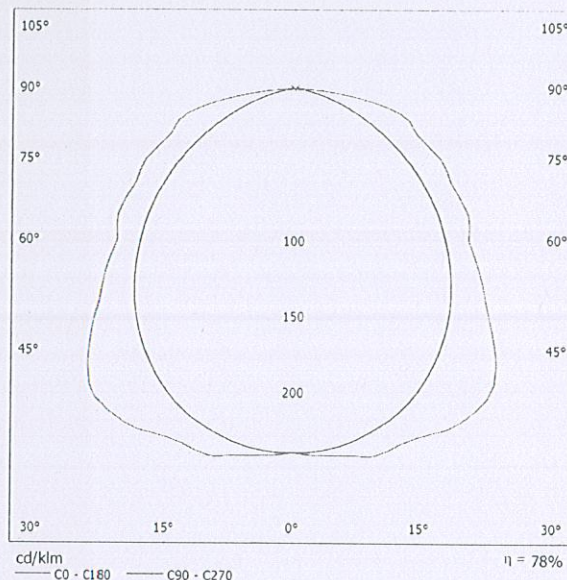
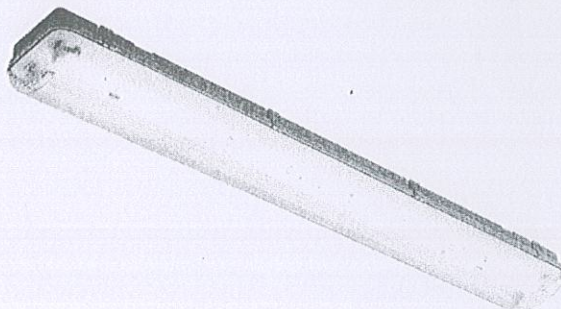
Luminous emittance 1:

Glare Evaluation According to UGR												
p Ceiling		70	70	50	50	30	70	70	50	50	30	
p Walls		50	30	50	30	30	50	30	50	30	30	
p Floor		20	20	20	20	20	20	20	20	20	20	
Room Size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H	2H	20.5	21.8	20.8	22.1	22.4	19.0	20.3	19.3	20.6	20.9	
	3H	22.6	23.9	23.0	24.2	24.5	20.2	21.4	20.5	21.7	22.0	
	4H	23.8	25.0	24.2	25.3	25.7	20.4	21.6	20.8	21.9	22.3	
	6H	25.0	26.1	25.4	26.4	26.8	20.6	21.6	21.0	22.0	22.4	
	8H	25.5	26.6	26.0	27.0	27.4	20.6	21.6	21.0	22.0	22.4	
4H	12H	26.2	27.2	26.6	27.6	28.0	20.6	21.6	21.0	21.9	22.3	
	2H	20.9	22.1	21.3	22.4	22.8	19.8	20.9	20.2	21.3	21.6	
	3H	23.4	24.4	23.8	24.7	25.1	21.3	22.3	21.7	22.7	23.1	
	4H	24.8	25.7	25.2	26.1	26.5	21.8	22.7	22.3	23.1	23.5	
	6H	26.2	27.0	26.6	27.4	27.9	22.1	22.9	22.5	23.3	23.8	
8H	12H	26.9	27.6	27.4	28.1	28.5	22.1	22.9	22.6	23.3	23.8	
	2H	27.7	28.3	28.1	28.8	29.3	22.2	22.8	22.7	23.3	23.8	
	4H	25.0	25.8	25.5	26.2	26.7	22.5	23.2	23.0	23.7	24.2	
	6H	26.7	27.3	27.2	27.8	28.3	23.1	23.7	23.6	24.2	24.7	
	8H	27.6	28.2	28.1	28.7	29.2	23.3	23.8	23.8	24.3	24.8	
12H	12H	28.6	29.1	29.1	29.6	30.2	23.4	23.8	23.9	24.4	24.9	
	4H	25.0	25.7	25.5	26.2	26.7	22.7	23.4	23.2	23.9	24.4	
	6H	26.8	27.3	27.3	27.8	28.4	23.5	24.0	24.0	24.5	25.1	
	8H	27.8	28.3	28.3	28.8	29.3	23.8	24.3	24.3	24.8	25.4	
Variation of the observer position for the luminaire distances S												
S = 1.0H		+0.1 / -0.1					+0.2 / -0.2					
S = 1.5H		+0.3 / -0.3					+0.4 / -0.6					
S = 2.0H		+0.3 / -0.6					+0.7 / -1.1					
Standard table		BK10					BK14					
Correction Summand		3.9					-0.6					
Corrected Glare Indices referring to 6700lm Total Luminous Flux												

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OMS TORNADO PC REF 2x54W / Luminaire Data Sheet

Luminous emittance 1:



Luminaire classification according to CIE: 99
 CIE flux code: 46 77 94 99 78

TORNADO PC DIF/REF

Mounting:
 Ceiling surfaced
 Ceiling Suspended

Lamps:
 Linear fluorescent lamp FDH
 Linear fluorescent lamp FD

Optical system:
 Diffuser
 Additional top reflector (version REF) on request – symmetrical or asymmetrical

Light distribution:
 Direct

Wiring:
 Electronic control gear (EEI=A2)
 ON REQUEST: Dimmable electronic control gear (EEI= A1– 1-10V/switch DIM/DSI/DALI)

Materials:
 Housing: inject polycarbonate, grey
 Diffuser: inject polycarbonate, clear
 Clips: polycarbonate or stainless steel (inox)
 Installation plate: metal sheet, surface finish – white (RAL 9003)

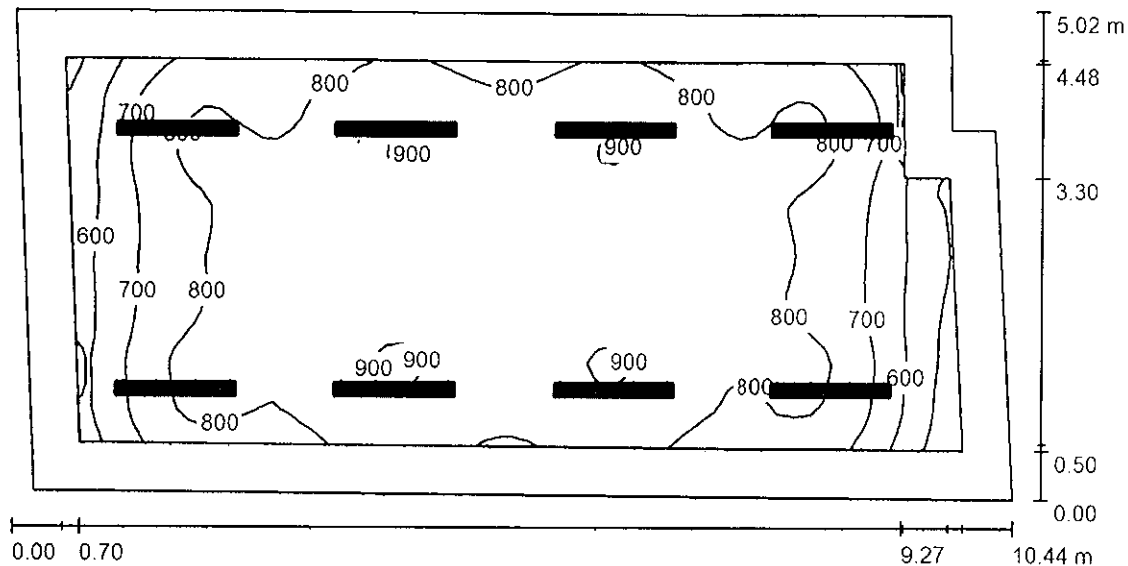
Accessories:
 On request:
 Suspension accessories
 PG 13,5 grommet
 Connectors on cable: 3-pole –Wieland gesis RST 2013

Luminous emittance 1:

Glare Evaluation According to UGR												
p Ceiling		70	70	50	50	30	70	70	50	50	30	30
p Walls		50	30	50	30	30	50	30	50	30	30	30
p Floor		20	20	20	20	20	20	20	20	20	20	20
Room Size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis					
2H	2H	21.1	22.5	21.4	22.7	23.0	20.6	22.0	20.9	22.2	22.5	22.5
	3H	23.3	24.5	23.6	24.8	25.1	21.8	23.0	22.1	23.3	23.6	23.6
	4H	24.4	25.6	24.8	25.9	26.2	22.1	23.2	22.4	23.5	23.8	23.8
	6H	25.5	26.6	25.9	26.9	27.3	22.2	23.2	22.5	23.6	23.9	23.9
	8H	25.9	26.9	26.3	27.2	27.6	22.2	23.2	22.6	23.5	23.9	23.9
	12H	26.1	27.1	26.5	27.4	27.8	22.2	23.1	22.6	23.5	23.9	23.9
4H	2H	21.6	22.7	22.0	23.1	23.4	21.2	22.3	21.6	22.7	23.0	23.0
	3H	24.0	25.0	24.4	25.3	25.7	22.7	23.6	23.1	24.0	24.4	24.4
	4H	25.4	26.3	25.8	26.6	27.0	23.1	24.0	23.5	24.4	24.8	24.8
	6H	26.7	27.5	27.2	27.9	28.3	23.4	24.1	23.8	24.5	25.0	25.0
	8H	27.2	27.9	27.6	28.3	28.8	23.4	24.1	23.9	24.6	25.0	25.0
	12H	27.5	28.1	27.9	28.5	29.0	23.5	24.1	23.9	24.6	25.0	25.0
8H	4H	25.7	26.4	26.1	26.8	27.2	23.7	24.5	24.2	24.9	25.3	25.3
	6H	27.3	27.9	27.8	28.3	28.8	24.3	24.9	24.8	25.3	25.8	25.8
	8H	27.9	28.4	28.4	28.9	29.4	24.5	25.0	25.0	25.5	26.0	26.0
	12H	28.3	28.7	28.8	29.2	29.8	24.6	25.0	25.1	25.5	26.1	26.1
	4H	25.7	26.3	26.2	26.8	27.2	23.9	24.6	24.4	25.0	25.5	25.5
	6H	27.4	27.9	27.9	28.4	28.9	24.6	25.1	25.1	25.6	26.1	26.1
12H	8H	28.1	28.5	28.6	29.0	29.5	24.9	25.4	25.5	25.9	26.4	26.4
	12H	28.1	28.5	28.6	29.0	29.5	24.9	25.4	25.5	25.9	26.4	26.4
Variation of the observer position for the luminaires distances S												
S = 1.0H		+0.1 / -0.1					+0.2 / -0.2					
S = 1.5H		+0.1 / -0.2					+0.7 / -0.7					
S = 2.0H		+0.3 / -0.4					+0.8 / -1.1					
Standard table		BK09					BK05					
Correction Summand		2.9					-1.5					
Corrected Glare Indices referring to 8909lm Total Luminous Flux												

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Galdniecība / Summary



Height of Room: 2.800 m, Mounting Height: 2.600 m, Maintenance factor: 0.80

Values in Lux, Scale 1:75

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$
Workplane	/	791	414	914	0.524
Floor	20	634	322	831	0.508
Ceiling	70	168	115	196	0.688
Walls (6)	50	389	131	685	/

Workplane:

Height: 0.750 m
 Grid: 64 x 32 Points
 Boundary Zone: 0.500 m

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.497, Ceiling / Working Plane: 0.212.

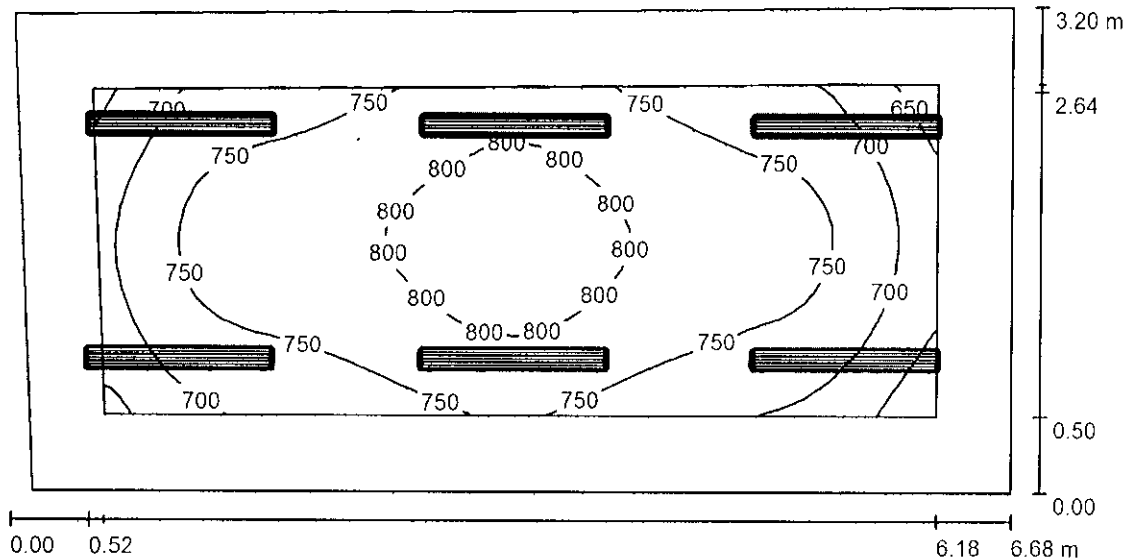
Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	8	OMS TORNADO PC REF 2x54W (1.000)	6921	8900	114.0
Total:			55366	71200	912.0

Specific connected load: $18.23 \text{ W/m}^2 = 2.30 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 50.03 m^2)

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Krasotava / Summary



Height of Room: 2.800 m, Mounting Height: 2.800 m, Maintenance factor: 0.80

Values in Lux, Scale 1:48

Surface	ρ [%]	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	$u0$
Workplane	/	751	610	830	0.812
Floor	20	554	394	651	0.712
Ceiling	70	345	222	623	0.645
Walls (4)	50	525	276	1139	/

Workplane:

Height: 0.750 m
Grid: 32 x 16 Points
Boundary Zone: 0.500 m

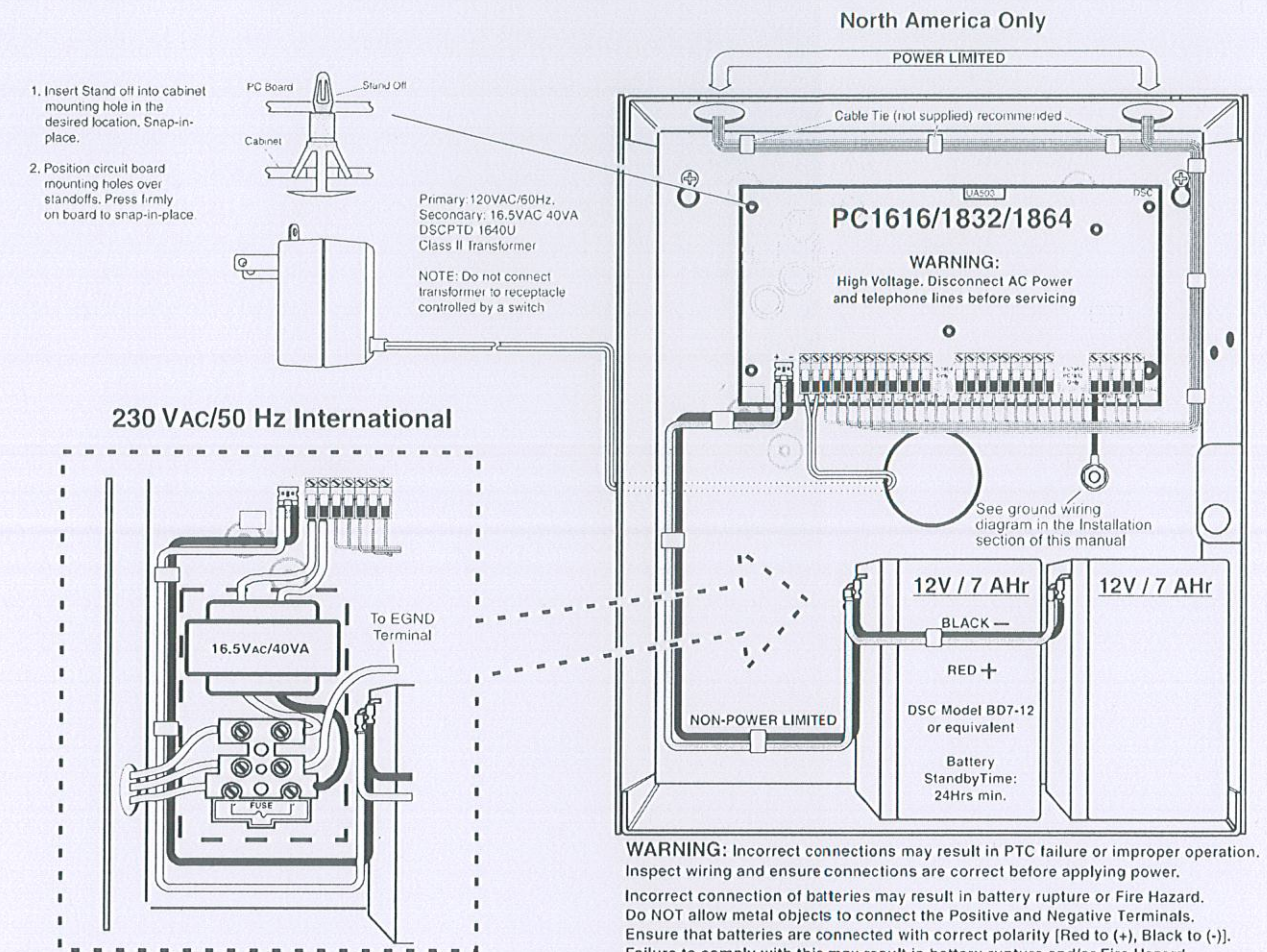
Illuminance Quotient (according to LG7): Walls / Working Plane: 0.787, Ceiling / Working Plane: 0.459.

Luminaire Parts List

No.	Pieces	Designation (Correction Factor)	Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P [W]
1	6	OMS TORNADO PC DIF 2x36W (1.000)	5369	6700	74.0
		Total:	32211	40200	444.0

Specific connected load: $21.24 \text{ W/m}^2 = 2.83 \text{ W/m}^2/100 \text{ lx}$ (Ground area: 20.90 m^2)

PC1616/1832/1864 Wiring Diagram



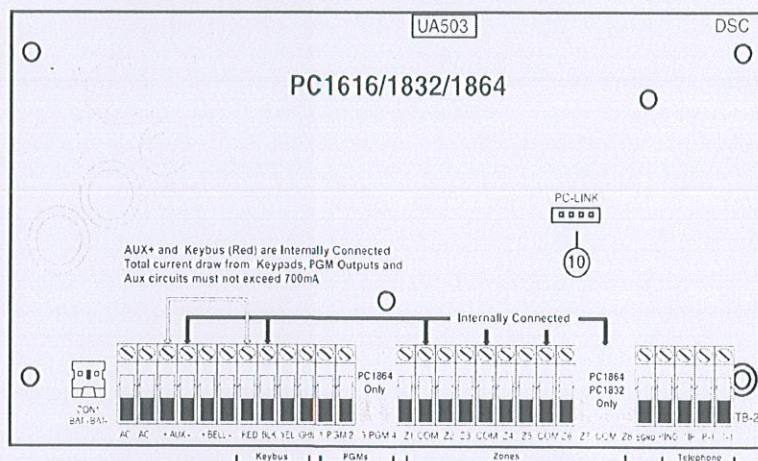
IMPORTANT:

- a) This equipment, Alarm Controller PC1616/1832/1864 shall be installed and used within an environment that provides the pollution degree max 2 and overvoltages category II NON-HAZARDOUS LOCATIONS, indoor only. The equipment is FIXED and PERMANENTLY connected and is designed to be installed by service persons only; [service person is defined as a person having the appropriate technical training and experience necessary to be aware of hazards to which that person may be exposed in performing a task and of measures to minimize the risks to that person or other persons.]
- b) The connection to the mains supply must be made as per the local authorities rules and regulations.
An appropriate disconnect device must be provided as part of the building installation. Where it is not possible to rely on identification of the neutral in the AC Mains supply the disconnecting device must disconnect both poles simultaneously (line and neutral). The device shall disconnect the supply during servicing.
- c) The equipment enclosure must be secured to the building structure before operation.
- e) Internal wiring must be routed in a manner that prevents:
- Excessive strain on wire and on terminal connections;
 - Loosening of terminal connections;
 - Damage of conductor insulation
- f) Disposal of the used batteries shall be made according to the waste recovery and recycling regulations applicable to the intended market.

WARNING: Incorrect connections may result in PTC failure or improper operation. Inspect wiring and ensure connections are correct before applying power.

Incorrect connection of batteries may result in battery rupture or Fire Hazard. Do NOT allow metal objects to connect the Positive and Negative Terminals. Ensure that batteries are connected with correct polarity [Red to (+), Black to (-)]. Failure to comply with this may result in battery rupture and/or Fire Hazard. All circuits are classified for UL Installations as Power Limited/Class II Power Limited except for battery leads which are not power limited.

Do NOT route any wiring over circuit boards. Maintain at least 1" (25.4mm) separation. A minimum of 1/4" (6.4mm) separation must be maintained at all points between power limited wiring and all other non-power limited wiring.



WARNING:
High Voltage. Disconnect AC Power and telephone lines before servicing

1.1 Keybus Wiring

The 4-wire KEYBUS (red, black, yellow and green) is the communication connection between the control panel and all modules. The 4 KEYBUS terminals of all modules must be connected to the 4 KEYBUS terminals of the main control panel.

The following rules must be followed when wiring the Keybus:

- Minimum 22 AWG wire, max. 18 AWG (2-wire twisted preferred)
- Do not use shielded wire
- Modules can be home run, connected in series or T-tapped, provided that the maximum wire distance from the control panel to any module does not exceed 1,000 feet (305m)
- No more than 3,000 feet (915m) of wire can be used in total

1.2 Zone Wiring

Zones can be wired for Normally Open or Normally Closed contacts, with Single-End-of-Line (SEOL) or Double End-of-Line (DEOL) resistors.

Observe the following guidelines:

- For UL Listed Installations use SEOL or DEOL only
- Minimum 22 AWG wire, maximum 18 AWG
- Do **not** use shielded wire
- Wire run resistance shall not exceed 100Ω. Refer to the chart below:

Burglary Zone Wiring Chart	
Wire Gauge	Maximum Wire Length to End-of-Line Resistor (ft/meters)
22	3000 / 914
20	4900 / 1493
19	6200 / 1889
18	7800 / 2377
Figures are based on maximum wiring resistance of 100Ω	

- [001]-[004] Selects Zone Definition
- [013] Opt [1] Selects Normally Closed or EOL resistors
- [013] Opt [2] Selects SEOL or DEOL resistors
- [101]-[108] Opt [14], [15], [16] Selects Normally Closed SEOL or DEOL for on-board zones (PC1832/1864, Zone 1-8; PC1616, Zones 1-6)

Zone Status - Loop Resistance/Loop Status

- **Fault** - 0Ω (shorted wire/loop)
- **Secure** - 5600Ω (contact closed)

1.3 Zone Expanders

Zone expanders add zones in groups of eight to the Alarm system. Module jumpers J1, J2, J3 are required to assign zones to these modules.

Jumper settings for PC5108 v2 are shown here.

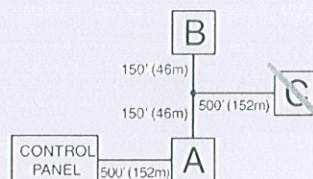
- PC5108 v1.0 supports first 32 zones only
- PC5700 enrolls as two modules
- Do NOT use PC5108 v1 and PC5108 v2 on the same panel

Module Jumpers			Zones Assigned
J1	J2	J3	
ON	ON	ON	Zones Disabled
OFF	ON	ON	Zones 09-16
ON	OFF	ON	Zones 17-24
OFF	OFF	ON	Zones 25-32
ON	ON	OFF	Zones 33-40
OFF	ON	OFF	Zones 41-48
ON	OFF	OFF	Zones 49-56
OFF	OFF	OFF	Zones 57-64

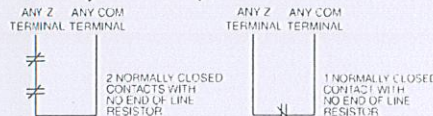
1.4 Bell Wiring

These terminals supply 700mA of current at 12VDC for commercial installations and 11.1-12.6VDC for residential installations (e.g., DSC SD-15 WULF). To comply with NFPA 72 Temporal Three Pattern requirements, **Program [013] Opt [8] must be ON**. Note that Steady, Pulsed alarms are also supported.

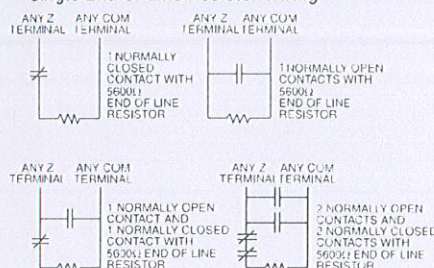
The Bell output is supervised and power limited by 2A PTC. If unused, connect a 1000Ω resistor across Bell+ and Bell- to prevent the panel from displaying a trouble. See [*[2].



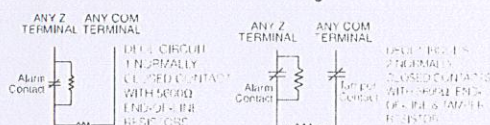
Normally Closed Loops - Do NOT use for UL Installations



Single End-of-Line Resistor Wiring



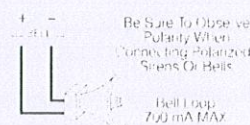
Double End-of-Line Resistor Wiring



- **Tamper** - infinite (broken wire, open)
- **Violated** - 11,200Ω (contact open)



Refer to the associated installation sheet for Jumper locations for the PC5108 v1 and PC5700.



1.5 AUX Power Wiring

The control panel can provide a maximum of 700mA of current for modules, powered detectors, relays, LEDs, etc. If the total current required exceeds 700mA, an additional power supply is required (e.g., PC5200, PC5204). See list below.

Min/max operating voltages for devices, sensors and modules is 9.5VDC - 14VDC.

1.6 PGM Wiring

PGMs switch to ground when activated from the control panel. Connect the positive side of the device to be activated to the AUX+ Terminal. Connect the negative terminal to the PGM.

Current output is as follows:

- PGM 1, 3, 4 50mA
- PGM 2 300mA

2-Wire Smoke Detectors Initiating Circuit

- Style B (Class B), Supervised, Power Limited
- UL Compatibility Identifier..... PC18-1
- DC Output Voltage 9.8-13.8 VDC
- Detector Load 2mA (MAX)
- Single End-of-Line (SEOL) Resistor..... 2200Ω
- Loop Resistance..... 24Ω (MAX)
- Standby Impedance 1020Ω (NOM)
- Alarm Impedance..... 570Ω (MAX)
- Alarm Current 89mA (MAX)

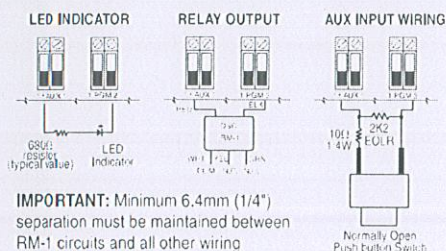
UL Compatibility ID For FSA-210B Series is: FS200

NOTE: For ULC Listed installations use FSA-210A and FSA-410A series.

For current levels greater than 300mA, a relay is required. PGM2 can also be used for 2-wire smoke detectors.

NOTE: Use SEOL resistors on fire zones only.

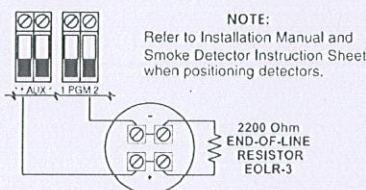
LED output with current limiting resistor and optional relay driver output



IMPORTANT: Minimum 6.4mm (1/4") separation must be maintained between RM-1 circuits and all other wiring

Compatible 2-wire Smoke Detector
DSC FSA-210B Series

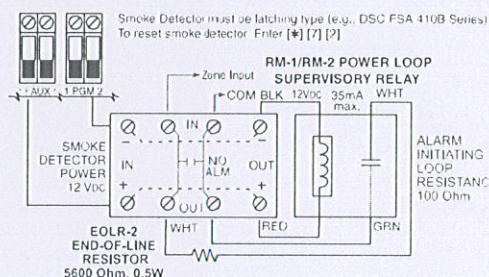
FSA-210B
FSA-210BT
FSA-210BS
FSA-210BST
FSA-210BLST
FSA-210BR
FSA-210BRT
FSA-210BRS
FSA-210BRST
FSA-210BLRST



NOTE: Do NOT combine models from different Manufacturers on the same circuit. Operation may be impaired.

NOTE:
Refer to Installation Manual and
Smoke Detector Instruction Sheet
when positioning detectors.

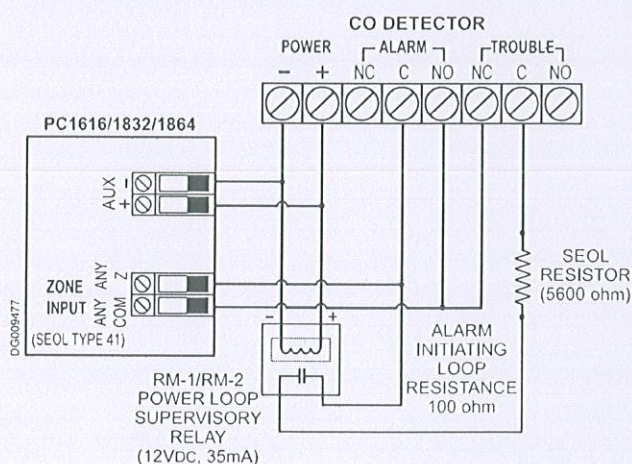
4-Wire Smoke Detectors



Compatible 4-wire Smoke Detector
DSC FSA-410B Series

FSA-410B
FSA-410BT
FSA-410BS
FSA-410BST
FSA-410BLST
FSA-410BR
FSA-410BRT
FSA-410BRS
FSA-410BRST
FSA-410BLRST

1.7 Carbon Monoxide Detector Wiring



The following hardwired CO Detector models can be used with PC1616/PC1832/PC1864 v4.5 (and higher) control panels:

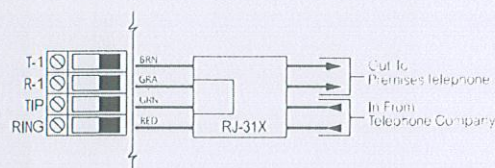
- Potter Model CO-12/24, UL File E321434
- Quantum Model 12-24SIR, UL File E186246
- NAPCO Model FW-CO12 or FW-CO1224, UL File E306780
- System Sensor Model CO1224, UL File E307195

NOTE: For multiple unit connections, the leads between CO detectors need to be broken. The power supervision relay has to be powered from the last detector in the loop.

Wireless CO detectors are also available. When installing wireless CO detectors, use only DSC model WS4913. A DSC wireless receiver model RF5132-433 v5.1 (and higher) or DSC keypad receiver models RFK55XX-433 (xx= 00/01/08/16/64) v1.2 (and higher) are required when installing wireless CO detectors. For more details on either the WS4913 CO detector or the receivers, please refer to their respective installation manuals.

1.8 Telephone Line Wiring

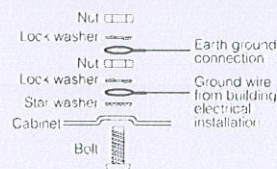
Wire the telephone connection terminals (TIP, Ring, T-1, R-1) to an RJ-31X Connector as indicated. For connection of multiple devices to the telephone line, wire in the sequence indicated. Use 26 AWG wire minimum for wiring. Telephone format is programmed in option [350]. Telephone Call Directions are programmed in options [351]-[376].



1.9 Ground

Ground Installation

Tighten nut to break paint and make good connection to the cabinet



1.10 Battery

Standby Battery Guide

Battery Charging Current: 400 mA

Battery Size	Standby	
	4Hr	24Hr
4Ahr	700mA	----
7Ahr	700mA	180mA
14Ahr	700mA	470mA

NOTE: Battery capacity will deteriorate with age and the number of charge/discharge cycles. Replace every 3-5 years.

1.11 AC Wiring

AC Wiring (UL Listed Installations)

Primary: 120VAC/60Hz./0.33A

Secondary: 16.5VAC/40VA DSC PTD1640U, DSC PTC1640U, PTC1640UG(UL) / PTC1640CG (ULC)

DSC PTD1640U-CC Plug-in, Class 2 Transformer.

NOTE: Use DSC PTD1640 for Canadian installations.



For UL Listed installations, do NOT connect transformer to a receptacle controlled by a switch.

1.12 RFK5500 and RFK5564 Easy Wireless Enrollment Procedure

1. Enter [*][8][Installer Code][898]. The LCD displays the following: "Wireless Enrollment Mode."
2. Place the wireless device in the desired location.
3. Activate the device as described in the associated installation sheet. The electronic serial number (ESN) is displayed.
4. Press [*] to confirm the ESN. If the serial number is incorrect, press [#] to discard it, and repeat this step. After successful confirmation of the serial number, the system prompts for the zone number. The next available zone is displayed.
5. Enter a zone number (01-64) then press [*] to accept. The next available zone is preloaded.
NOTE: Only one device may be enrolled in each zone. If a zone already has a device enrolled, press [*] to overwrite the zone or [#] to enter another zone number.
6. After successful entry of the zone number, the system prompts for the zone type. (The recommended zone type is displayed). Press [*] to accept the zone type or enter:

Device Type	Zone Definition
2 Door/Window Contact	[01] Delay 1
3 PIR or Glass Break	[05] Interior, Stay-Away
4 Smoke Detector	[88] Standard 24 Hr Fire (Wireless)
5 Pendant	[16] 24 Hour Panic
8 CO Detector	[81] 24 Hour CO Detection