

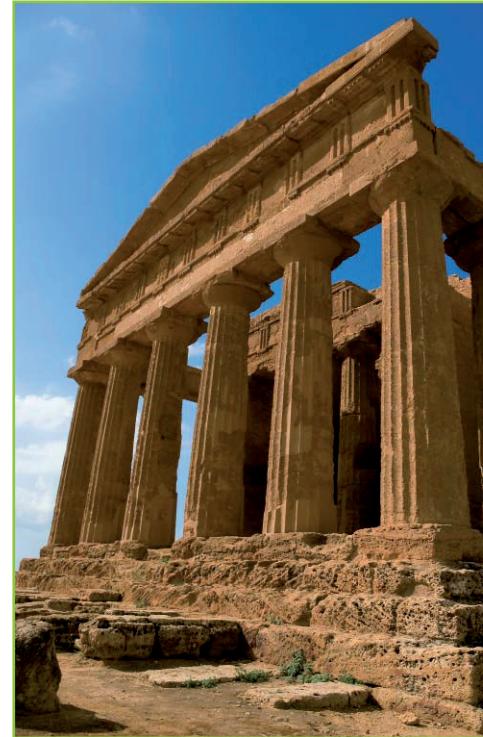


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# SALES TUTORIAL

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## GPS Plus system



**CPNI®**  
Centre for the Protection  
of National Infrastructure  
*GPS Plus approved for UK Government USE*



### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	400 m	12800 m
Parameter Set-Up	Local using PC	Remote using PC
PC connection	USB	USB/COM115/RS485/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container (IP68)	Metal container (IP68)
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 kg.	2 kg.
Operating temperature	-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc (12V nom.)	24-55Vcc (48V nom.)
Current max.	220mA@12Vcc	60mA@48Vcc

#### Operation

The system is based on the detection of differential pressure and detects all the intrusion attempt along the perimeter to be protected (jump, rubbing, quick and slow crossings...)

#### Installation

Can be installed under any kind of surface (sand, grass, gravel, paving, asphalt, etc.)

#### Length

From 10m to 400/800m (Stand Alone) / 12.8 Km (Multiplex)  
The detection zone can be from 3 to 6 metres wide, depending on the configuration

#### Alarm zone

Up to 4 zone (Stand Alone - per 100 metres) / 128 zone (Multiplex - per 100 metres)

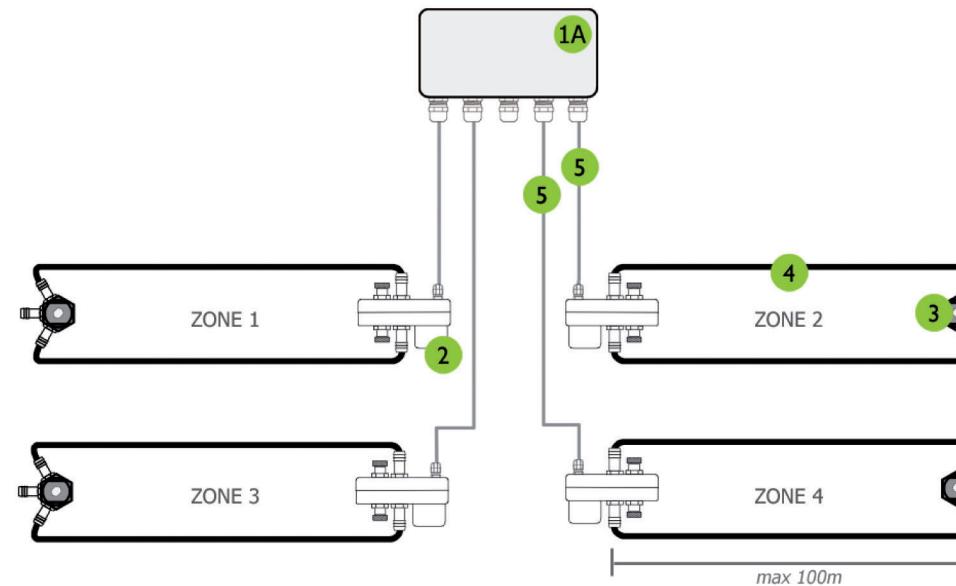
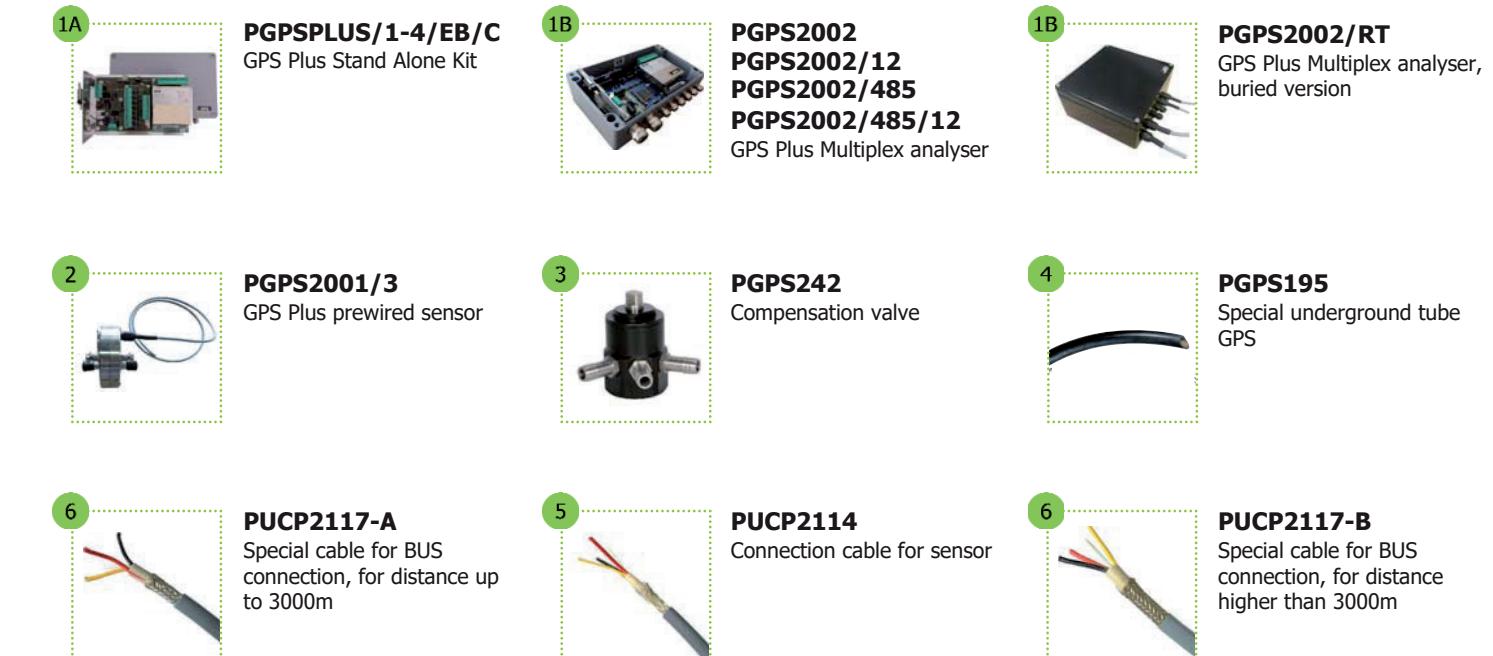
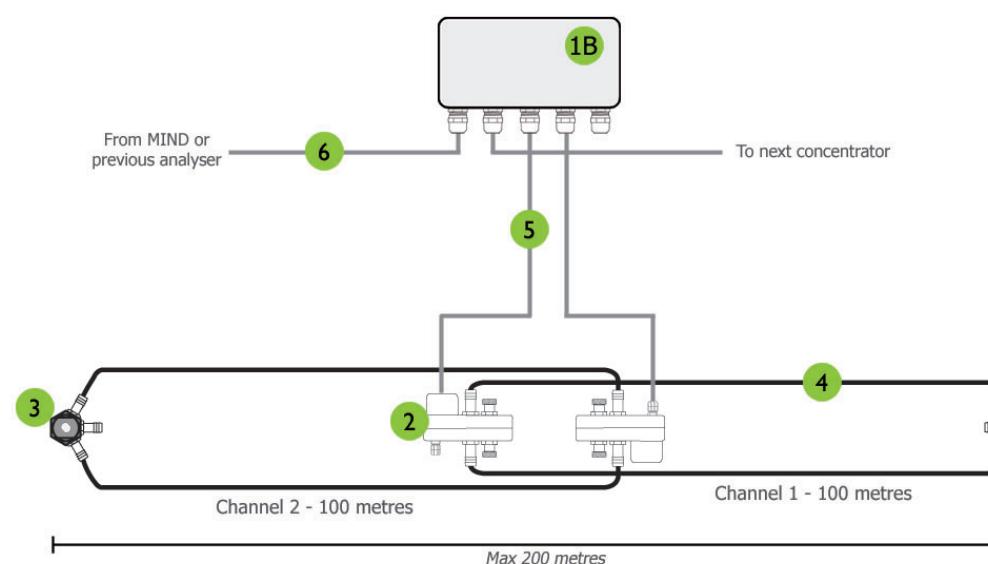
#### Advantages

Invisible, passive and undetectable, resistant to weather conditions and small animals.  
Can be installed also in hilly zone and in special applications (es. indoor). Minimum maintenance.

### Versions

<b>PGPSPLUS/1-4/EB</b>	GPS Plus Stand Alone Kit for max 4 zone, USB communication, power supply 12 Vdc
<b>PGPS2002</b>	Two zones multiplex analyser, COM115 communication, power supply 55 Vdc
<b>PGPS2002/12</b>	Two zones multiplex analyser, COM115 communication, power supply 12 Vdc
<b>PGPS2002/485/12</b>	Two zones multiplex analyser, RS485 communication, power supply 12 Vdc
<b>PGPS2002/485</b>	Two zones multiplex analyser, RS485 communication, power supply 55 Vdc
<b>PGPS2002/I</b>	Two zones multiplex analyser, COM115 communication, power supply (buried version)
<b>PGPS2002/RT</b>	Two zones multiplex analyser, (buried version)

*The Kit is composed of: an analyser, a detector, a valve, management software.*

**TYPICAL** scheme - GPSPlus/1-4/EB STAND ALONE version**Composants****TYPICAL** scheme - GPS Plus MULTIPLEX version**Accessories**

## GPS Plus Multiplex system composition tutorial

Protection lenght - in meters		200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>PM-48</b>	MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>PM-12</b>	MIND unit (12V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>PM-AC115</b>	COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
<b>PM-AC485</b>	RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>PM-AR</b>	Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>PM-AP1</b>	1 Slot Front Panel	5	5	5	4	4	4	4	3	3	3	3	2	2	2	1	
<b>PMA-KSR</b>	Mounting kit for 2 relay cards	1	1	1	2	2	2	2	3	3	3	3	4	4	4	5	
<b>PM-AA4812</b>	Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>PGPS2002</b>	AGPS® Plus analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PGPS2001/3</b>	GPS® Plus sensor	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PGPS242</b>	Valve	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PUCP2005</b>	Single relay board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
<b>PUCP2006</b>	Double relay board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
<b>PUCP2117-B</b>	Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b>	Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	
<b>PUCP2114</b>	Cable between analyser and sensors	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
<b>PGPS606</b>	Anti-freeze liquid (Kg)	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275	1360
<b>PGPS195</b>	GPS tube (m)	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400
<b>PGPS197E</b>	Electric pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>PGPS-APM2</b>	Manual pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>PGPS236</b>	Cable ties kit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
<b>PMSW</b>	Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

### SYMBOLS LEGEND

- ( ) for RS485 communication
- F optional
- Not necessary
- \* To be used for the connection between MIND and peripheral for distance higher than 3000m
- \*\* To be used for the connection between MIND and peripheral for distance less than 3000m
- \*\*\* To be used for the connection between PGPS2001/3 and PGPS2002



## PPS system

### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	200 m	12800 m
Parameter Set-Up	Local using PC	Remote using PC
PC connection	USB	USB/COM115/RS485/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container (IP68)	Metal container (IP68)
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 kg.	2 kg.
Operating temperature	-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc (12V nom.)	24-55Vcc (48V nom.)
Current max.	220mA@12Vcc	60mA@48Vcc



### Operation

The system is based on the detection of differential pressure and detects all the intrusion attempt along the perimeter to be protected (jump, rubbing, quick and slow crossing, ...)  
**Moreover identifies with extreme accuracy the point where the intrusion has occurred.**

### Installation

Can be installed under any kind of surface (sand, grass, gravel, paving, asphalt, etc.)

### Length

From 10m to 200m (Stand Alone) 12.8 Km (Multiplex). The detection zone is about 3 meters wide.

### Alarm zone

From 5 (Stand Alone) to 20 (Multiplex) for 200m completely configurable.

### Advantages

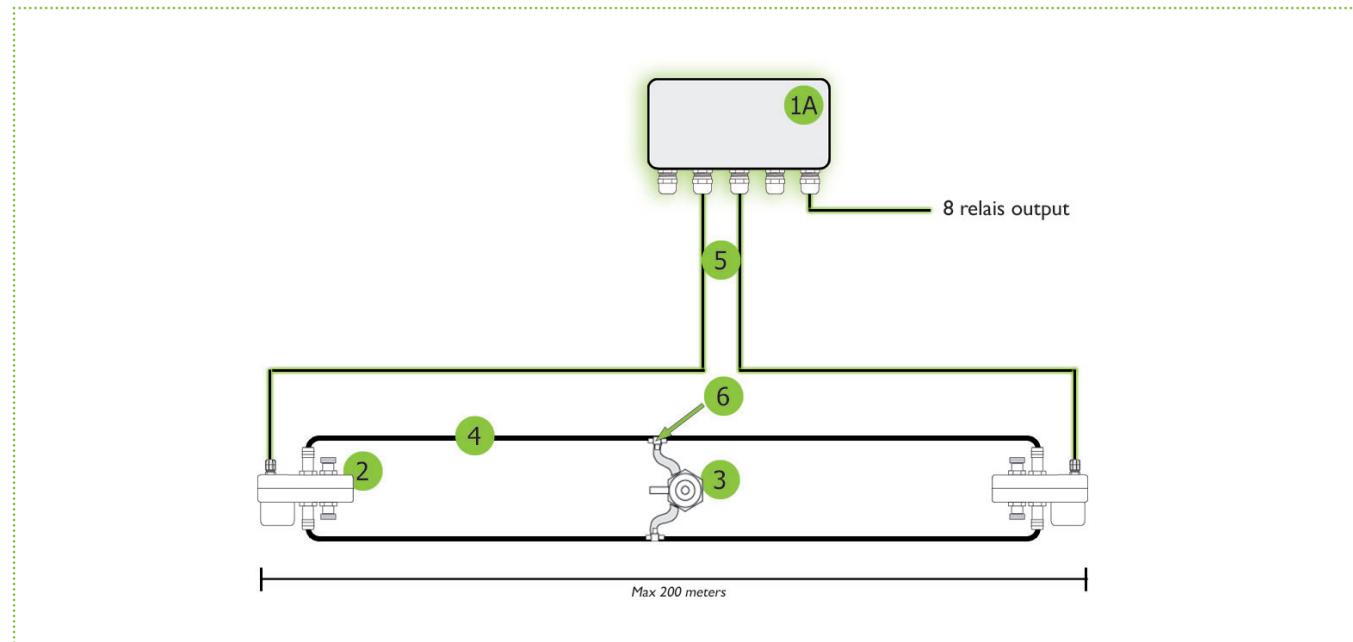
Invisible, passive and undetectable, resistant to weather conditions and small animals.  
 Can be installed also in hilly zone and in special applications (es. indoor). Minimum maintenance.  
 Identification of the crossing point (Cross Technology)

### Versions

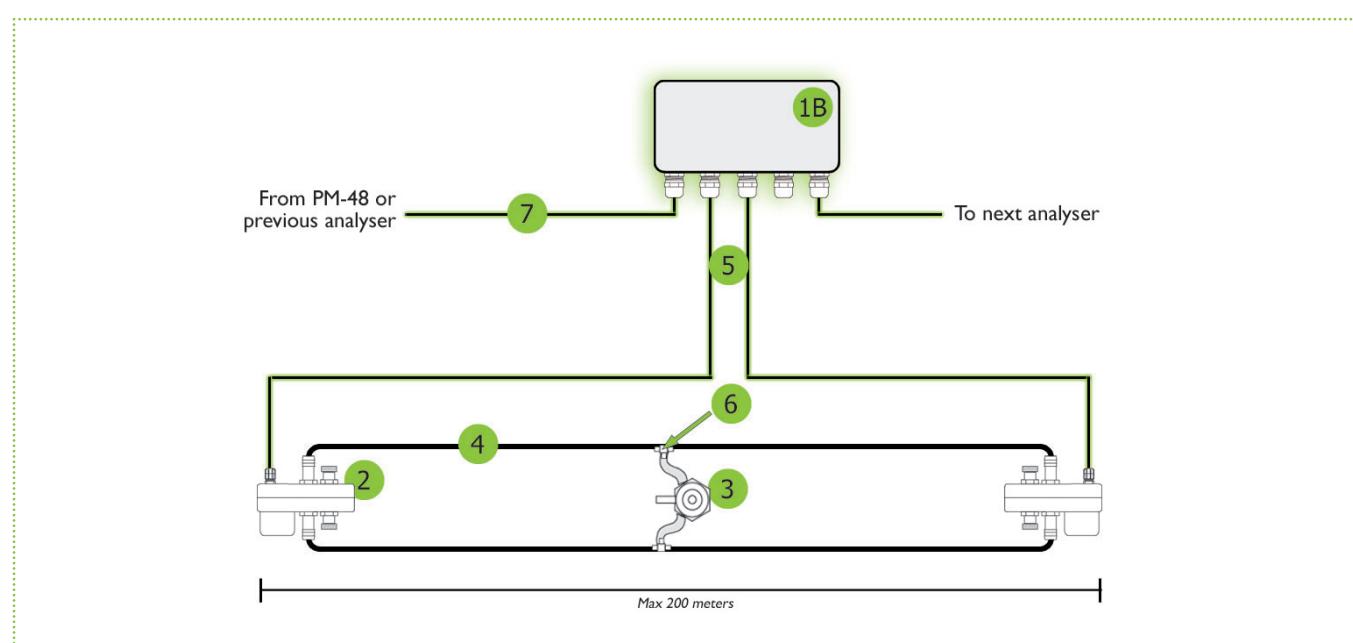
<b>PPPSPLUS/2/EB</b>	GPS Plus Stand Alone kit for max 4 zones, USB communication, power supply 12 Vdc
<b>PPPS2002/SA</b>	Stand alone analyser, comunicazione USB, power supply 12 Volt
<b>PPPS2002</b>	Multiplex analyser, COM115 communication, power supply 55 Volt
<b>PPPS2002/12</b>	Multiplex analyser, COM115 communication, power supply 12 Volt
<b>PPPS2002/485/12</b>	Multiplex analyser, RS485 communication, power supply 12 Volt
<b>PPPS2002/485</b>	Multiplex analyser, RS485 communication, power supply 55 Volt
<b>PPPS2002/I</b>	Multiplex analyser, COM115 communication, power supply 55 Volt (buried version)
<b>PPPS2002/RT</b>	Multiplex analyser, buried version

*The Kit is composed of: an analyser, two sensors, a valve, management software.*

## TYPICAL SCHEME - PPS STAND ALONE version



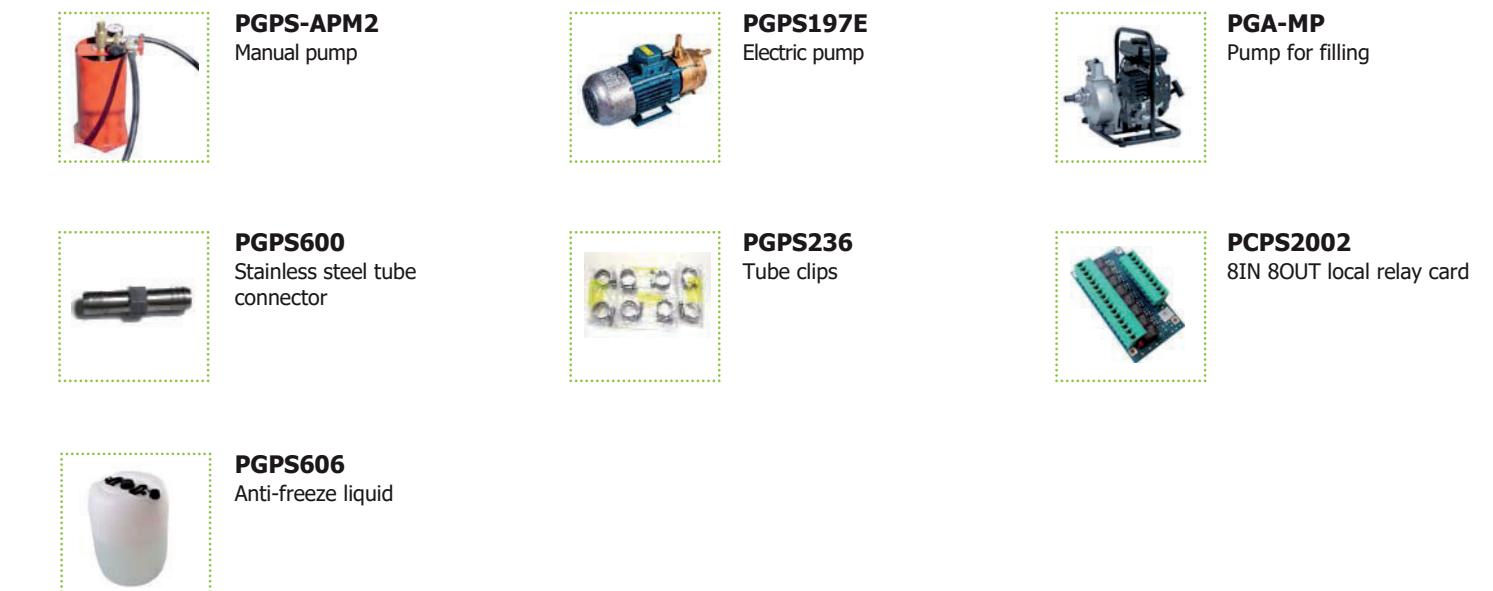
## TYPICAL SCHEME - PPS MULTIPLEX version



## Components



## Accessories





## PPS Multiplex system composition tutorial

Protection lenght - in meters	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>PM-48</b> MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-12</b> MIND unit (12V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AC115</b> COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>PM-AC485</b> RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AR</b> Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AP1</b> 1 Slot Front Panel	5	5	5	4	4	4	4	3	3	3	3	2	2	2	2	1
<b>PMA-KSR</b> Mounting kit for 2 relay cards	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
<b>PM-AA4812</b> Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PPPS2002</b> PPS analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PGPS2001/3</b> GPS Plus sensor	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PGPS242</b> Valve	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PPPST3</b> T connection kit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PUCP2005</b> Single relay board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
<b>PUCP2006</b> Double relay board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
<b>PUCP2117-B</b> Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b> Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
<b>PUCP2114</b> Cable between analyser and sensors	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
<b>PGPS606</b> Anti-freeze liquid (Kg)	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275	1360
<b>PGPS195</b> GPS tube (m)	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400
<b>PGPS197E</b> Electric pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PGPS-APM2</b> Manual pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PGPS236</b> Cable ties kit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
<b>PMSW</b> Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOL LEGEND

- ( ) for RS485 communication
- F optional
- not necessary
- \* To be used for the connection between MIND and peripheral for distance higher than 3000m
- \*\* To be used for the connection between MIND and peripheral for distance less than 3000m
- \*\*\* To be used for the connection between PGPS2001/3 and PGPS2002



## RFC system



### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	300 m	19200 m
Parameter Set-Up	Local using PC	Remote using PC
PC connection	USB	USB/COM115/RS485/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container (IP68)	Metal container (IP68)
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 kg.	2 kg.
Operating temperature	-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc (12V nom.)	24-55Vcc (48V nom.)
Current max.	220mA@12Vcc	60mA@48Vcc



#### Operation

Detects the volumetric change of electromagnetic field, generated both above and below the ground level

#### Installation

Can be installed under any kind of surface (sand, grass, gravel, paving, asphalt, etc.)

#### Length

From 20m to 300m (Stand Alone) / 19.2 Km (Multiplex).  
The detection zone is about 1.5 to 2 meters wide.

#### Alarm zone

2 channels for maximum 150 meters for zone/channel

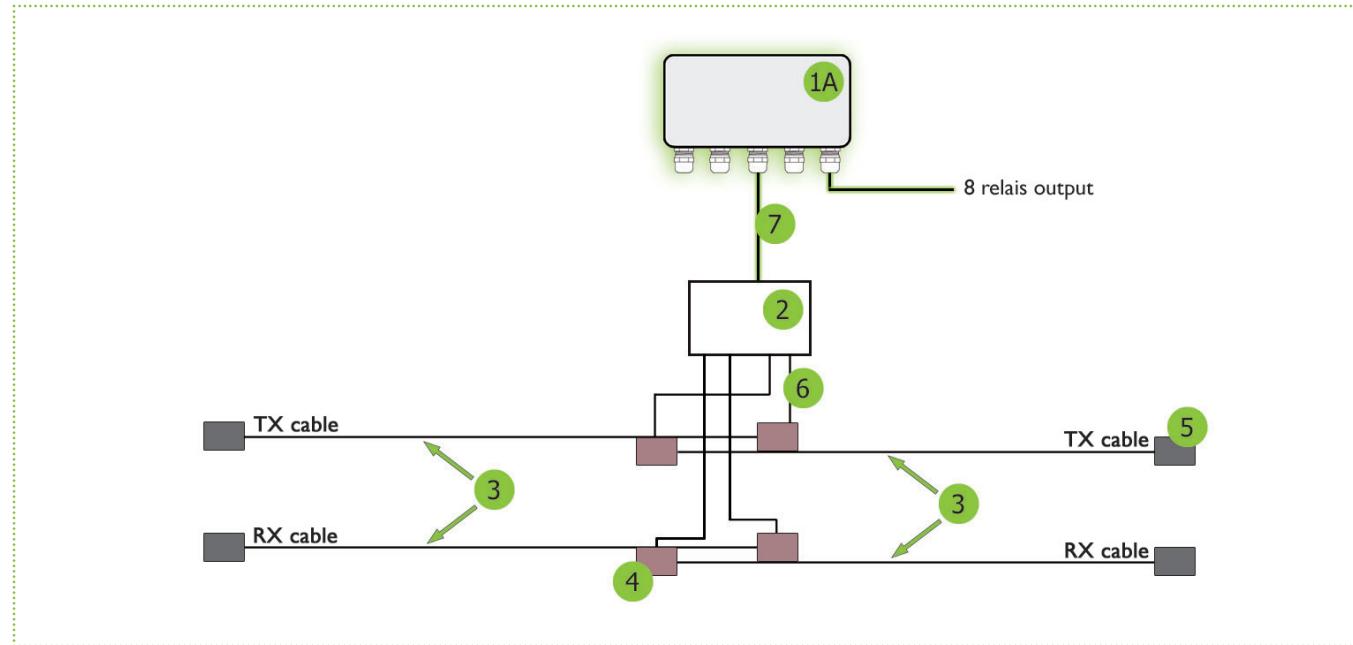
#### Advantages

Invisible and installable under any kind of surface, such as concrete (pay attention to the presence of metal objects along the protected area).

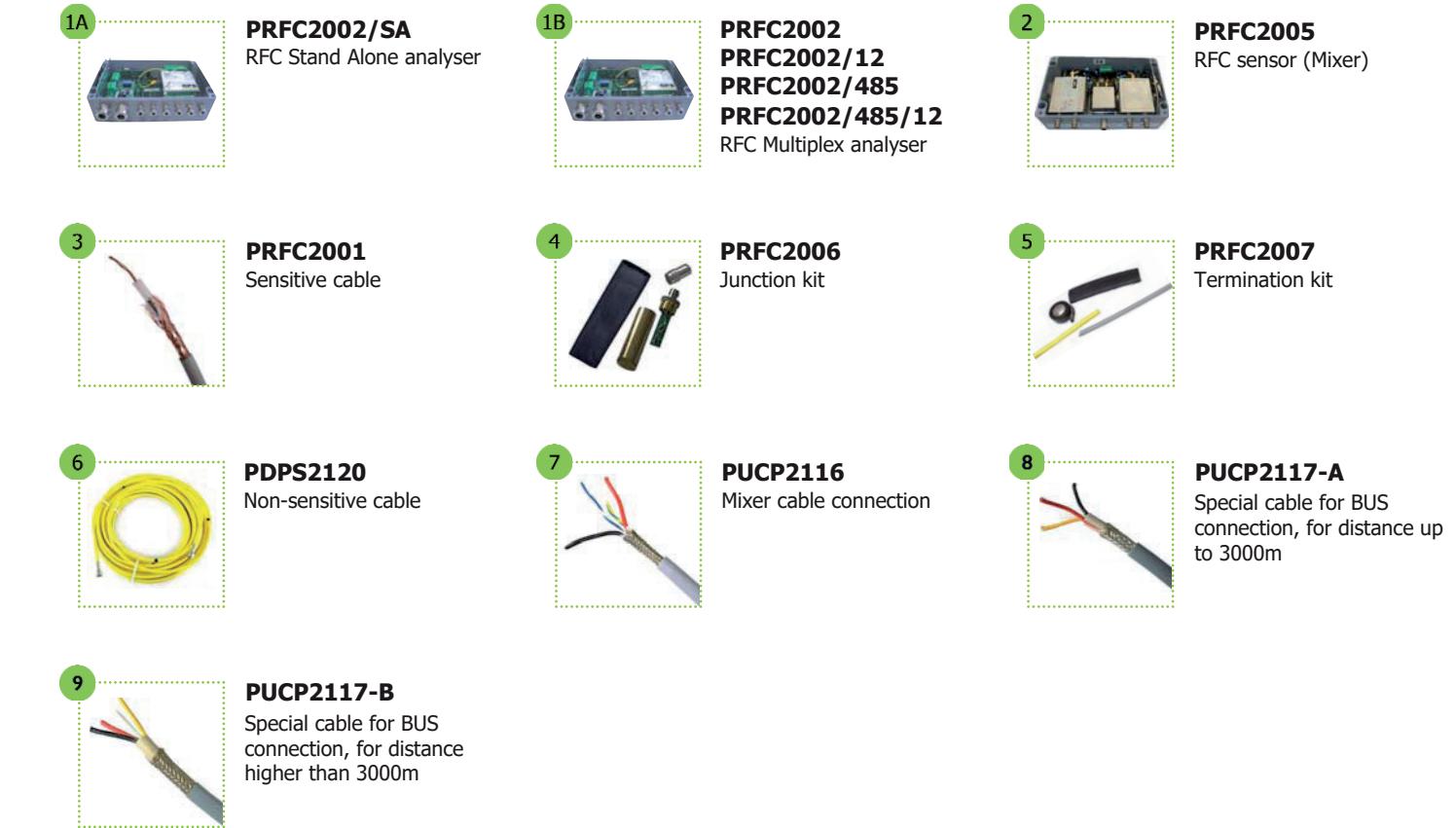
### Versions

<b>PRFC2002/SA</b>	Stand Alone analyser, USB communication, power supply 12 Volt
<b>PRFC2002</b>	Multiplex analyser, COM115 communication, power supply 55 Volt
<b>PRFC2002/12</b>	Multiplex analyser, COM115 communication, power supply 12 Volt
<b>PRFC2002/485/12</b>	Multiplex analyser, RS485 communication, power supply 12 Volt
<b>PRFC2002/485</b>	Multiplex analyser, RS485 communication, power supply 55 Volt

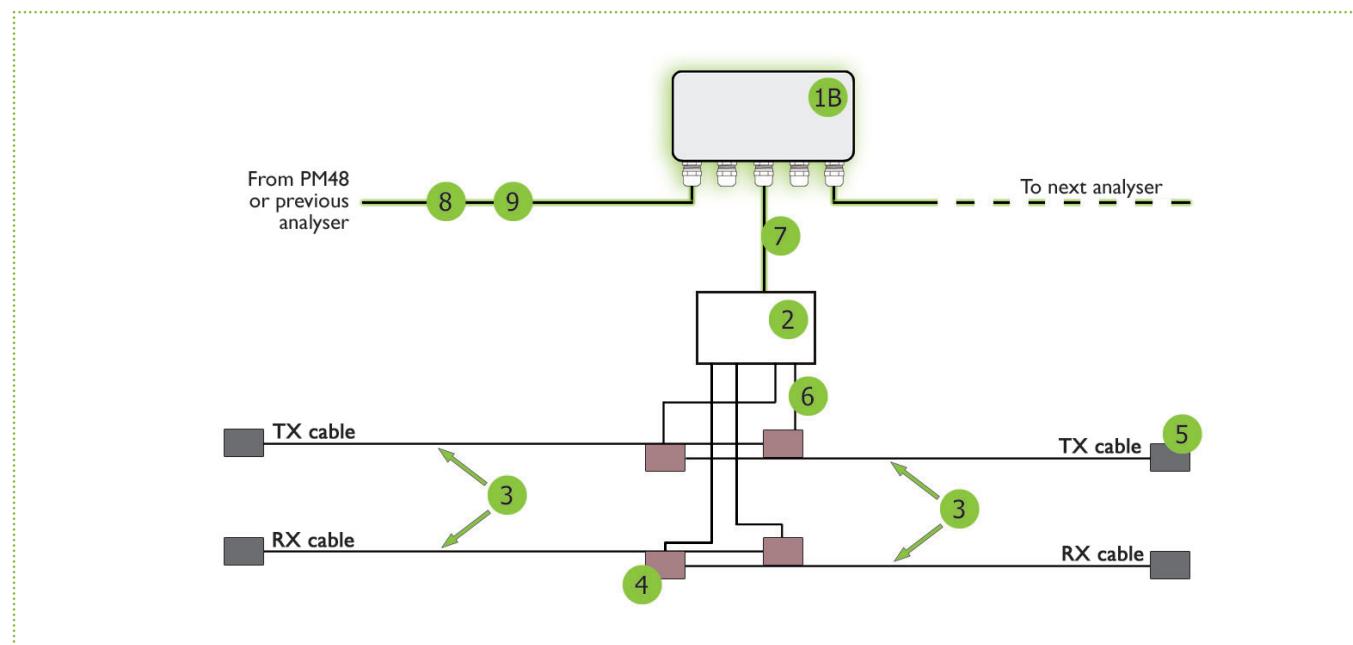
## TYPICAL scheme - RFC STAND ALONE version



## Components



## TYPICAL scheme - RFC MULTIPLEX version



## Accessories





## RFC Multiplex system composition tutorial

Protection lenght - in meters	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>PM-48</b> MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AC115</b> COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>PM-AR</b> Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AP1</b> 1 Slot Front Panel	5	5	5	4	4	4	4	3	3	3	3	2	2	2	2	1
<b>PMA-KSR</b> Mounting kit for 2 relay cards	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
<b>PM-AA4812</b> Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PRFC2002</b> RFC analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PUCP2005</b> Single relay board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
<b>PUCP2006</b> Double realy board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
<b>PUCP2117-B</b> Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b> Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
<b>PUCP2116</b> Cable between analyser and mixer	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
<b>PRFC2005</b> Mixer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PRFC2001</b> Sensible RFC cable	440	880	1320	1760	2200	2640	3080	3520	3960	4400	4840	5280	5720	6160	6600	7040
<b>PDPS2120</b> Non sensible cable	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640
<b>PRFC2006</b> Termination Kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
<b>PRFC2007</b> Junction Kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
<b>PMSW</b> Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOLS LEGEND

- F optional
- not necessary
- \* to be used for the connection between MIND and peripheral for distance higher than 3000m
- \*\* to be used for the connection between MIND and peripheral for distance less than 3000m
- \*\*\* to be used for the connection between Mixer and PRFC2002



## DPS system



### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	400 m	12800 m
Parameter Set-Up	Local using PC	Remote using PC
PC connection	USB	USB/COM115/RS485/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container IP68	Metal container IP68
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 kg.	2 kg.
Operating temperature	-30° +70°C	-30° +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc (12V nom.)	24-55Vcc (48V nom.)
Current max.	220mA@12Vcc	60mA@48Vcc



#### Operation

It detect volumetrics changes generated in electromagnetic field and pressure changes in the surface area caused by running, walking, jumping, etc.

#### Installation

Can be installed under any kind of surface (sand, grass, gravel, paving, asphalt, etc.)

#### Length

From 20m to 200m (Stand Alone) / 12.8 Km (Multiplex). The detection zone is from 2m to 3m wide

#### Alarm zone

Max 2 zones (Stand Alone), 128 zones for 100m (Multiplex)

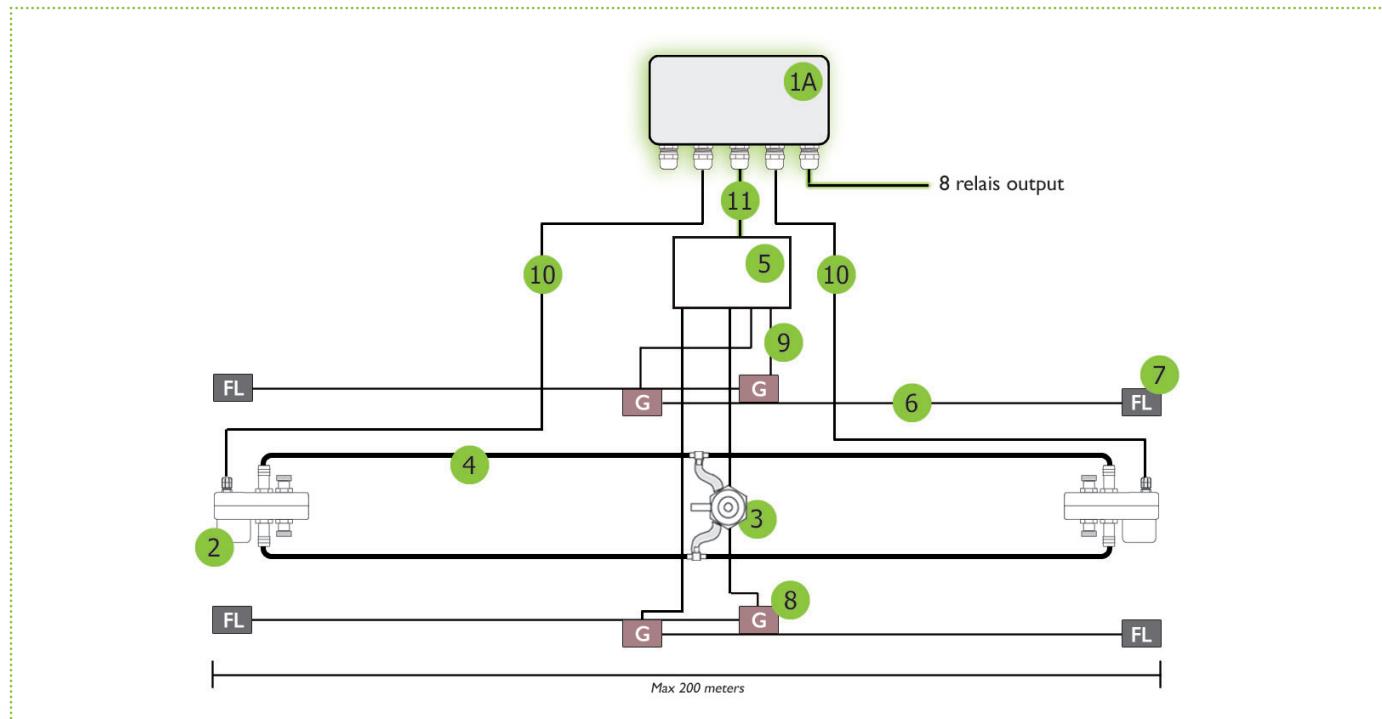
#### Advantages

Two technologies, invisible, is the combination of advantages of two systems: GPS Plus and RFC. DPS has the highest rate of detection and the lowest FAR (False Alarm Rate).

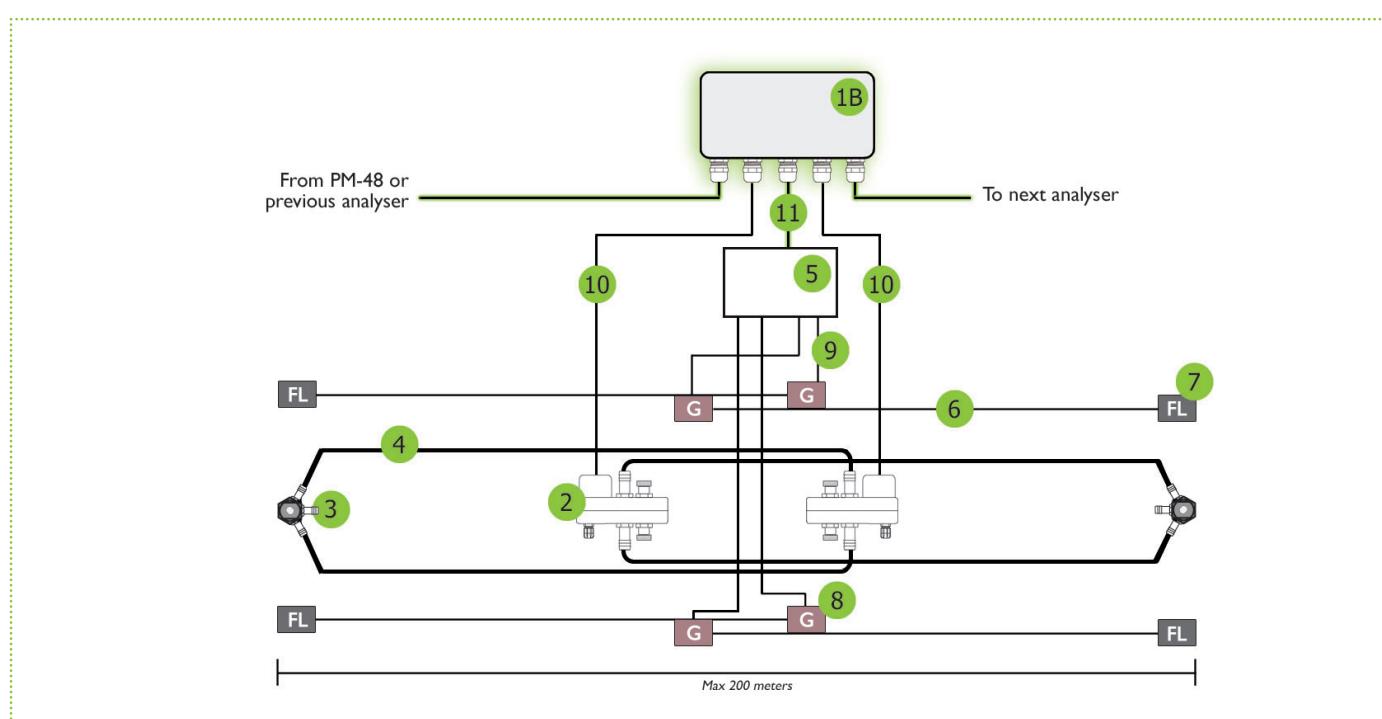
### Versions

<b>PDPS2002/SA</b>	Stand Alone analyser, USB communication, power supply 12 Volt
<b>PDPS2002</b>	Multiplex analyser, COM115 communication, power supply 55 Volt
<b>PDPS2002/12</b>	Multiplex analyser, COM115 communication, power supply 12 Volt
<b>PDPS2002/485/12</b>	Multiplex analyser, RS485 communication, power supply 12 Volt
<b>PDPS2002/485</b>	Multiplex analyser, RS485 communication, power supply 55 Volt

## TYPICAL scheme - DPS STAND ALONE version



## TYPICAL scheme - DPS MULTIPLEX version



## Components



## Accessories





## DPS Multiplex system composition tutorial

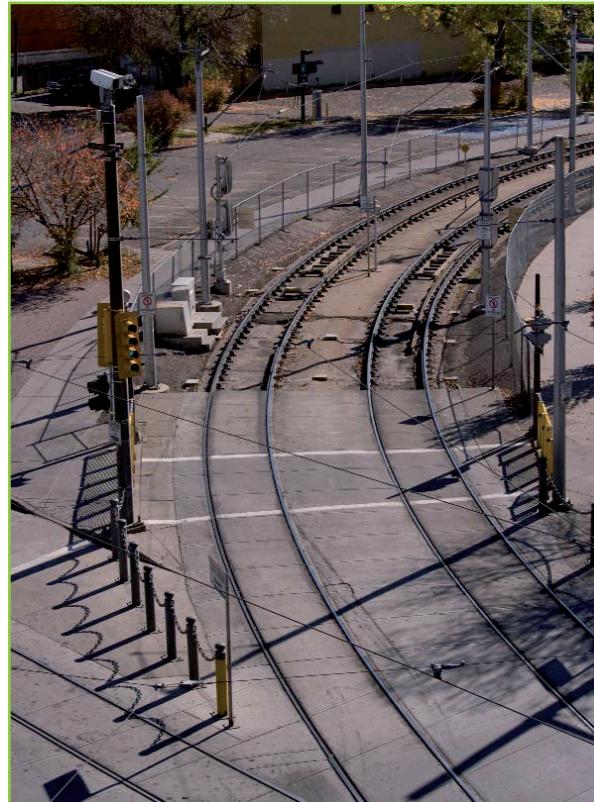
Protection lenght - in meters	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>PM-48</b> MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-12</b> MIND unit (12V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AC115</b> COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>PM-AC485</b> RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AR</b> Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AP1</b> 1 Slot Front Panel	5	5	5	4	4	4	4	3	3	3	3	2	2	2	2	1
<b>PMA-KSR</b> Mounting kit for 2 relay cards	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
<b>PM-AA4812</b> Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PDPS2002</b> DPS analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PGPS2001/3</b> GPS Plus sensor	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PGPS242</b> Valve	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PUCP2005</b> Single relay board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
<b>PUCP2006</b> Double relay board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
<b>PUCP2117-B</b> Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b> Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
<b>PUCP2114</b> Cable between analyser and sensors	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
<b>PUCP2116</b> Cable between analyser and mixer	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
<b>PGPS606</b> Anti-freeze liquid (Kg)	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275	1360
<b>PGPS195</b> GPS tube (m)	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400
<b>PGPS197E</b> Electric pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PGPS-APM2</b> Manual pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PGPS236</b> Cable ties kit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
<b>PRFC2005</b> Mixer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PRFC2001</b> RFC sensitive cable	440	880	1320	1760	2200	2640	3080	3520	3960	4400	4840	5280	5720	6160	6600	7040
<b>PDPS2120</b> Non-sensitive cable	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640
<b>PRFC2006</b> Termination kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
<b>PRFC2007</b> Junction kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
<b>PMSW</b> Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOLS LEGEND

- ( ) for RS485 communication
- F optional
- not necessary
- \* to be used for the connection between MIND and peripheral for distance higher than 3000m
- \*\* to be used for the connection between MIND and peripheral for distance less than 3000m
- \*\*\* to be used for the connection between PGPS2001/3 and PDPS2002
- \*\*\*\* to be used for the connection between Mixer and PDPS2002



## DPP system



### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	400 m	12800 m
Parameter Set-Up	Local using PC	Local using PC
PC connection	USB	USB/COM115/RS485/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container IP68	Metal container IP68
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 kg.	2 kg.
Operating temperature	-30° +70°C	-30° +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc (12V nom.)	24-55Vcc (48V nom.)
Current max.	220mA@12Vcc	60mA@48Vcc



#### Operation

It detect volumetrics changes generated in electromagnetic field and pressure changes in the surface area caused by running, walking, jumping, etc.

#### Installation

Can be installed under any kind of surface (sand, grass, gravel, paving, asphalt, etc.)

#### Length

From 20m to 200m (Stand Alone) / 12.8 Km (Multiplex). The detection zone is from 1.5m to 3.0m wide

#### Alarm zone

Max 2 zones (Stand Alone), 20 zones per 200m (Multiplex)

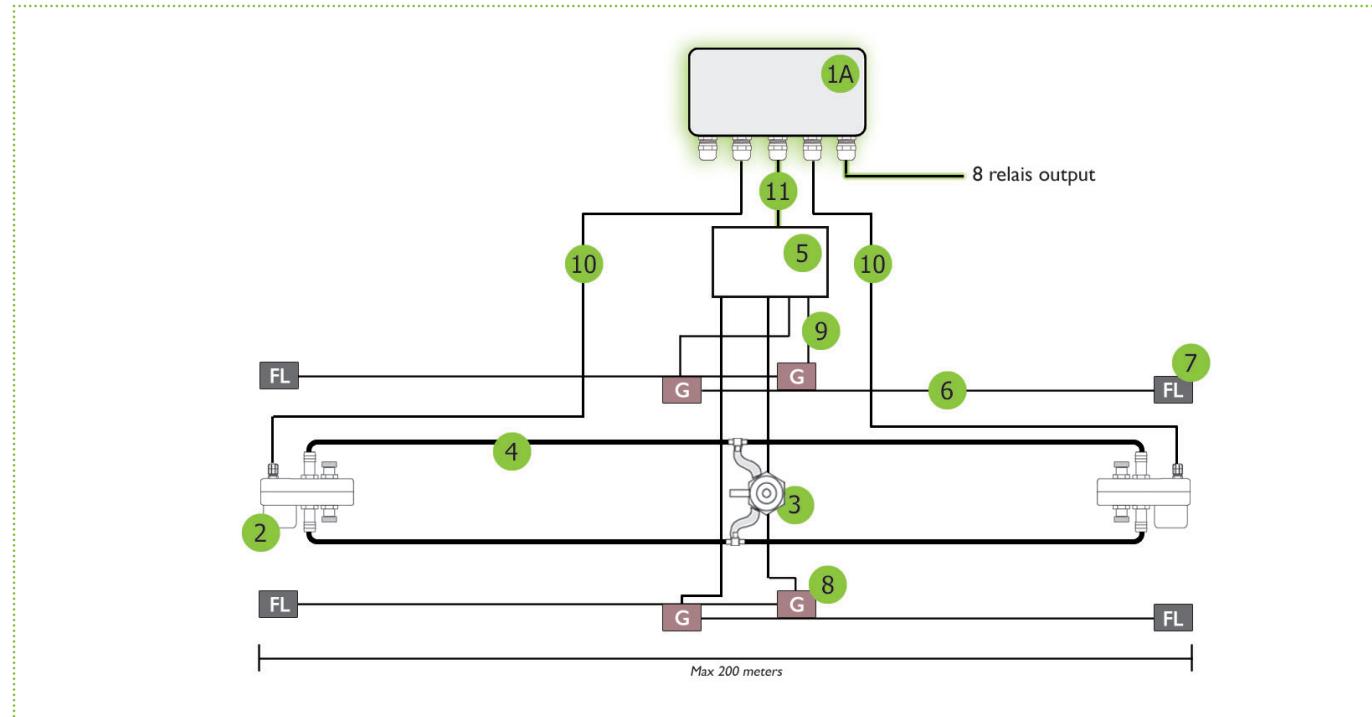
#### Advantages

Two technologies, invisible, is the combination of advantages of two systems: PPS and RFC  
DPP has the highest rate of detection and the lowest FAR (False Alarm Rate).

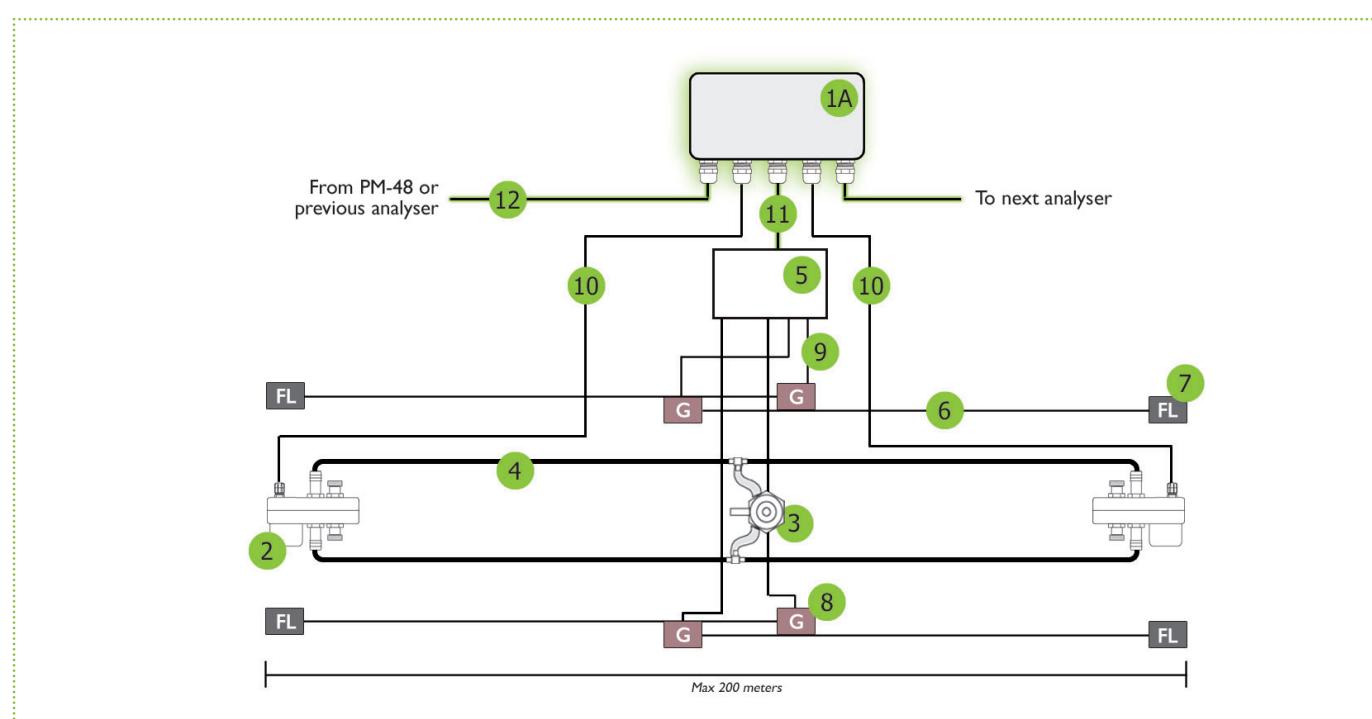
### Versions

<b>PDPP2002/SA</b>	Stand Alone analyser, USB communication, power supply 12 Volt
<b>PDPP2002</b>	Multiplex analyser, COM115 communication, power supply 55 Volt
<b>PDPP2002/12</b>	Multiplex analyser, COM115 communication, power supply 12 Volt
<b>PDPP2002/485/12</b>	Multiplex analyser, RS485 communication, power supply 12 Volt
<b>PDPP2002/485</b>	Multiplex analyser, RS485 communication, power supply 55 Volt

## TYPICAL scheme - DPP STAND ALONE version



## TYPICAL scheme - DPP MULTIPLEX version



## Components



## Accessories

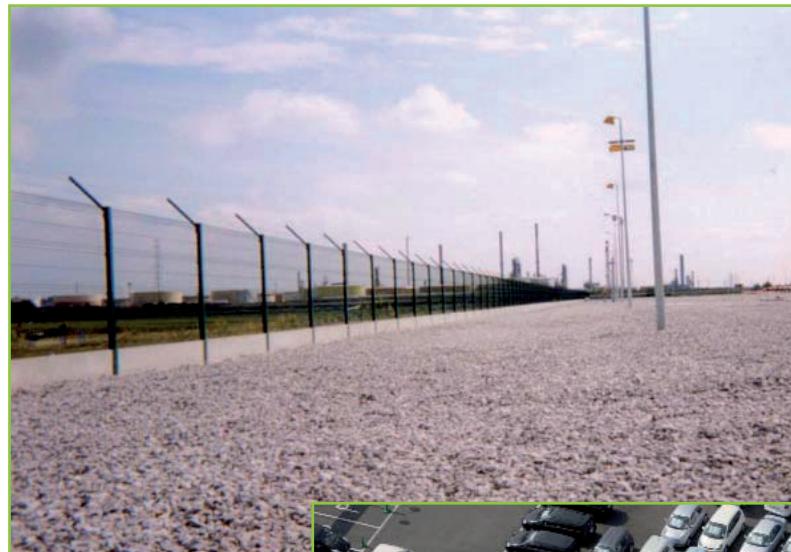


## DPP Multiplex system composition tutorial

Protection lenght - in meters	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
PM-48 MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PM-AC115 COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PM-AC485 RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM-AR Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PM-AP1 1 Slot Front Panel	5	5	5	4	4	4	4	3	3	3	3	2	2	2	2	1
PMA-KSR Mounting kit for 2 relay cards	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5
PM-AA4812 Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PDPP2002 DPP analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PGPS2001/3 GPS Plus sensor	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
PGPS242 Valve	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PPPST3 T connection kit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PUCP2005 Single realy board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
PUCP2006 Double realy board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
PUCP2117-B Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PUCP2117-A Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
PUCP2114 Cable between analyser and sensors	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
PUCP2116 Cable between analyser and mixer	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
PGPS606 Anti-freeze liquid (Kg)	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275	1360
PGPS195 GPS tube (m)	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400
PGPS197E Electric pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PGPS-APM2 Manual pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PGPS236 Cable ties kit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
PRFC2005 Mixer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRFC2001 RFC sensitive cable	440	880	1320	1760	2200	2640	3080	3520	3960	4400	4840	5280	5720	6160	6600	7040
PDPS2120 Non-sensitive cable	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640
PRFC2006 Termination kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
PRFC2007 Junction kit	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
PMSW Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOLS LEGEND

- ( ) for RS485 communication
- F optional
- not necessary
- \* to be used for the connection between MIND and peripheral for distance higher than 3000m
- \*\* to be used for the connection between MIND and peripheral for distance less than 3000m
- \*\*\* to be used for the connection between PGPS2001/3 and PDPP2002
- \*\*\*\* to be used for the connection between Mixer and PDPP2002



## CPS Plus system

### Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage	300 m for zone	300 m for zone
Nº zones	2/4 max	2/4 max
Parameter set-up	Local using PC	Remote using PC
PC connection	USB	COM115/RS485/USB/Ethernet
Auxiliary alarm inputs	8	8 optional
Local relay outputs	8	8 optional
Cabinet	Metal container IP68	Metal container IP68
Dimensions (WxHxD)	260x160x90 mm	260x160x90 mm
Weight	2 Kg.	2 Kg.
Operating temperature	-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity	90%	90%
Power supply	10-16Vcc	24-55Vcc
Current max.	220mA@12Vcc	60mA@48Vcc



#### Operation

The microphonic cable analyser mechanical stresses produced by an attempted intrusion such as climbing, lifting or cutting the fence and such us drilling and piercing of perimeter walls.

#### Installation

Structures like: fences, cement and brick walls, roof

#### Length

From 10m up to 4x300m (Stand Alone) / 38.4 Km (Multiplex)

#### Alarm zone

Max 300 meters for channel (up to 4). Double loop of 150m max for channel if the fence is over 2 meters high

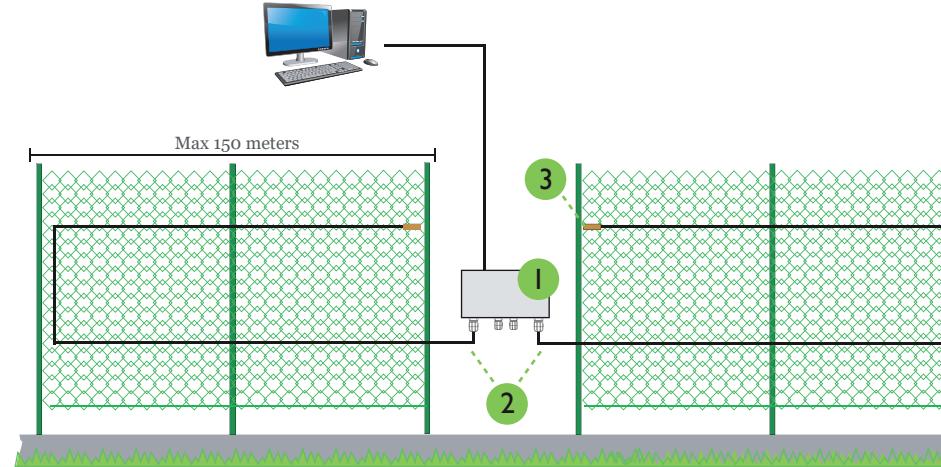
#### Advantages

Easy to install on fences, walls or roof. Digital signal analysis with recognition and categorization of different type of intrusion, that makes the detection extremely reliable. Low cost.

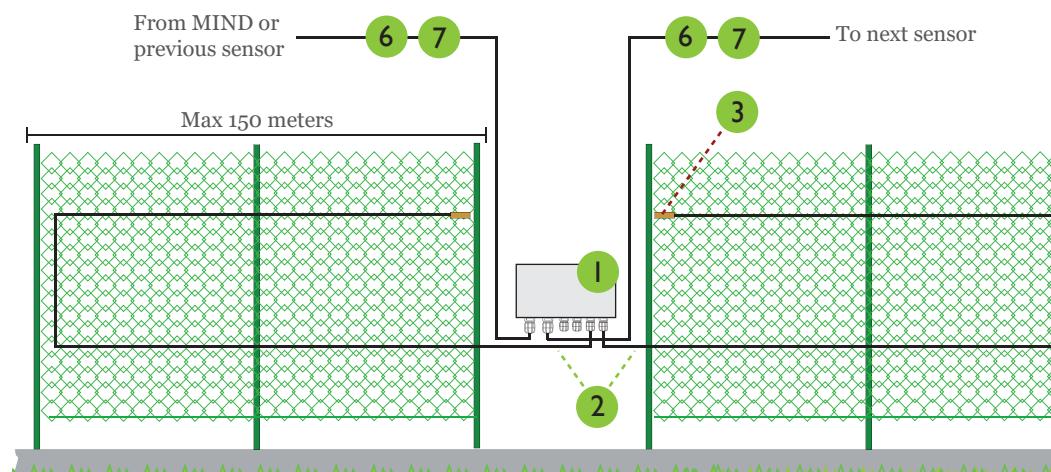
### Versions

<b>PCU-2000 / PCU-4000</b>	2/4 zones Stand Alone analyser, USB communication, power supply 12 Volt
<b>PCU-2005 / PCU-4005</b>	2/4 zones Stand Alone analyser, RS232 communication, power supply 12 Volt
<b>PCU-2003 / PCU-4003</b>	2/4 zones Stand Alone analyser, COM115 communication, power supply 12 Volt
<b>PCU-2001 / PCU-4001</b>	2/4 zones Stand Alone analyser, RS485 communication, power supply 12 Volt
<b>PCU-2202 / PCU-4202</b>	2/4 zones Multiplex analyser, COM115 communication, power supply 48 Volt
<b>PCU-2201 / PCU-4201</b>	2/4 zones Multiplex analyser, RS485 communication, power supply 12 Volt
<b>PCU-2204 / PCU-4204</b>	2/4 zones Multiplex analyser, RS485 communication, power supply 48 Volt

## TYPICAL scheme - CPS Plus STAND ALONE version



## TYPICAL scheme - CPS Plus MULTIPLEX version



## Components

<b>1A</b>	<b>PCU-2000/PCU-4000</b> CPS Plus Stand Alone analyser, USB communication	<b>1A</b>	<b>PCU-2005/PCU-4005</b> CPS Plus Stand Alone analyser, RS232 communication	<b>1A</b>	<b>PCU-2003/PCU-4003</b> CPS Plus Stand Alone analyser, COM115 communication
<b>1A</b>	<b>PCU-2001/PCU-4001</b> CPS Plus Stand Alone analyser, RS485 communication	<b>1B</b>	<b>PCU-2202/PCU-4202</b> CPS Plus Multiplex analyser, COM115 communication	<b>1B</b>	<b>PCU-2201/PCU-4201</b> CPS Plus Multiplex analyser, RS485 communication
<b>1B</b>	<b>PCU-2204/PCU-4204</b> CPS Plus Multiplex analyser, RS485 communication, power supply 48Volt	<b>2</b>	<b>PCPS313</b> Microphonic cable	<b>3</b>	<b>PCPS320/N</b> Termination kit
<b>4</b>	<b>PCPS321/2</b> Junction kit	<b>5</b>	<b>PCPS110/V</b> 100 cable ties kit	<b>6</b>	<b>PUCP2117-A</b> Special cable for BUS connection
<b>7</b>	<b>PUCP2117-B</b> Special cable for BUS connection				

## Accessories

<b>VCVRG59</b> Non sensitivity cable RG59	<b>PCPS2002</b> 8IN 8OUT local relay
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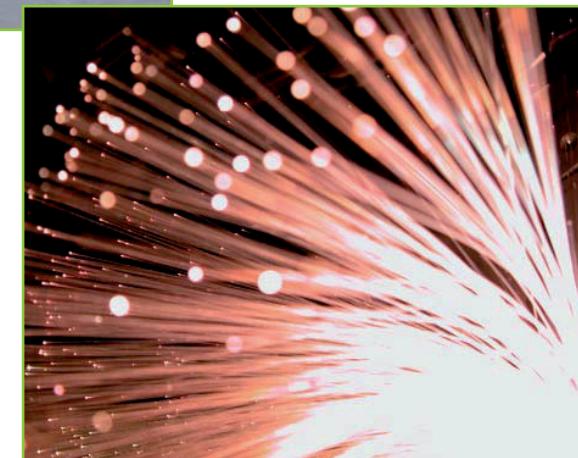
## CPS Plus Multiplex system composition tutorial

	600	1200	1800	2400	3000	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000	9600
	300	600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800
<b>PM-48</b>	MIND unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AC115</b>	COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>PM-AC485</b>	RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AR</b>	Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AP1</b>	1 Slot front panel	5	5	5	4	4	4	3	3	3	3	2	2	2	2	1
<b>PMA-KSR</b>	Mounting kit for 2 realy cards	1	1	1	2	2	2	3	3	3	3	4	4	4	4	5
<b>PM-AA4812</b>	Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PCU-2202</b>	CPS Plus analyser	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>PCPS313</b>	Microphonic cable	600	1200	1800	2400	3000	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
<b>PCPS320/N</b>	Termination kit	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
<b>PCPS321/2</b>	Junction kit	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
<b>PCPS110</b>	Cable ties	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
<b>VCVRG59</b>	Non sensible cable RG59	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
<b>PUCP2005</b>	Single relay board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
<b>PUCP2006</b>	Double relay board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
<b>PUCP2115</b>	Bus connection cable with audio	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b>	Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
<b>PUCP2117-B</b>	Bus connection cable	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
<b>PMSW</b>	Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOLS LEGEND

- ( ) for RS485 communication
- F optional
- not necessary
- \* to be used for the connection between MIND and peripheral for distance up to 5000m, with audio connection
- \*\* to be used for the connection between MIND and peripheral for distance less than 3000m, without audio
- \*\*\* to be used for the connection between MIND and peripheral for distance up to 5000 metri, without audio
- \*\*\*\* to be used for junction between PCPS13 sensitive cable and VCVRG59 non sensitive cable
- \*\*\*\*\* non sensitive cable

# SNAKE system



## Technical characteristics

	<b>SA</b>	<b>MPX</b>
Coverage for unit for channel	2000 m (single passage) 1000 m (double passage)	2000 m (single passage) 1000 m (double passage)
Paramétrage	Local usign PC	Remote using PC
PC connection	USB	USB/RS485/Ethernet
Local relay outputs	4 (1 zone) 6 (2 zones) 10 (4 zones)	-
Cabinet	Metal container	Rack metal container
Dimensions (LxHxP)	220x48x180 mm	220x48x180 mm
Weight	1,5 Kg.	1,5 Kg.
Operating temperature	-30°C ~ +70°C	-30°C ~ +70°C
Relative humidity	90%	90%
Power supply	10,5-16Vcc (12V nom.)	10,5-16Vcc (12V nom.)
Current max.	280mA@12Vcc	150mA@12Vcc



### Operation

Using the opto-phonic technology it detects the intrusion attempts, such as climbing, cutting or the breaking through a fence; in case of indoor application, it warns against potential attempts to break through or penetrate the wall

### Installation

Structures like: fences, cement and brick walls, roof

### Lenght

4x2000m (Stand Alone) / 512 Km (Multiplex)

### Alarm zone

Max 2000m single passage / max 1000m double passage

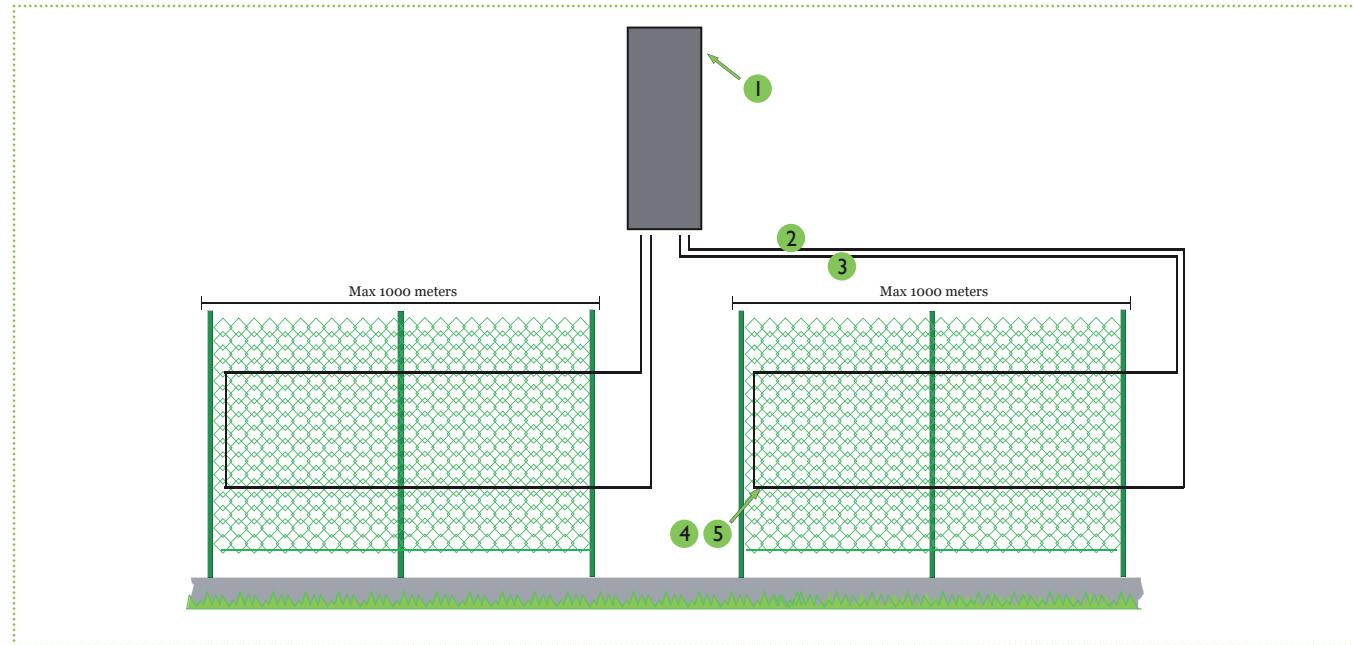
### Advantages

Easy to install on fences, walls or roof. Digital signal analysis with recognition and categorization of different type of intrusion, that makes the detection extremely reliable. Complete immunity to electromagnetic interference. It does not need any power supplies in the field.

## Versions

<b>PFO-SM10</b>	Stand Alone analyser, 1 zone, USB communication, power supply 12 Volt
<b>PFO-SM20</b>	Stand Alone analyser, 2 zones, USB communication, power supply 12 Volt
<b>PFO-SM40</b>	Stand Alone analyser, 4 zones, USB communication, power supply 12 Volt
<b>PFO-SM2000</b>	Multiplex analyser, 2 zones, RS485 communication, power supply 12 Volt
<b>PFO-SM4000</b>	Multiplex analyser, 4 zones, RS485 communication, power supply 12 Volt

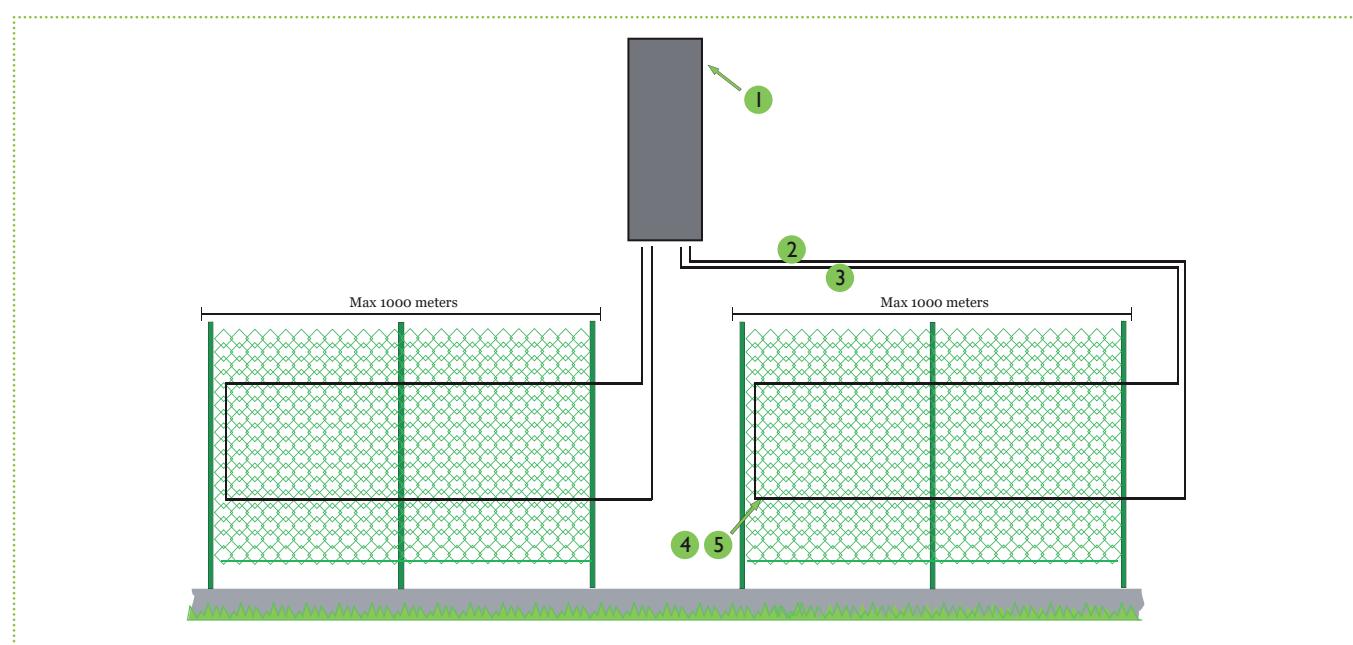
## TYPICAL scheme - SNAKE STAND ALONE version



## Components



## TYPICAL scheme - SNAKE MULTIPLEX version



## Accessories



## SNAKE Multiplex system composition tutorial

	4000	8000	12000	16000	20000	24000	28000		32000	36000	40000	44000	48000	52000	56000	60000	64000
	2000	4000	6000	8000	10000	12000	14000		16000	18000	20000	22000	24000	26000	28000	30000	32000
	2	4	6	8	10	12	14		16	18	20	22	24	26	28	30	32
<b>PM-12</b>	MIND unit (12V)	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
<b>PM-AC485</b>	RS485 communication board	2	2	2	2	2	2		2	2	2	2	2	2	2	2	2
<b>PM-AR</b>	Rack chassis	1	1	1	1	1	1		1	2	2	2	2	2	2	3	3
<b>PM-AP1</b>	1 Slot front panel	4	4	3	3	2	2	0	0	5	5	4	4	3	3	1	1
<b>PM-AA12</b>	Rack power supply	1	1	1	1	1	1		1	2	2	2	2	2	2	3	3
<b>PMA-KSR</b>	Mounting kit for 2 relay card	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3
<b>PFO-SM2000</b>	SNAKE analyser - 2 channels	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
<b>PFO-SM4000</b>	SNAKE analyser - 4 channels	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
<b>PFO-SM</b>	Sensitive fiber optic	4000	8000	12000	16000	20000	24000	28000	32000	36000	40000	44000	48000	52000	56000	60000	64000
<b>PFO-SM/A</b>	Armed sensitive fiber optic	F	F	F	F	F	F		F	F	F	F	F	F	F	F	F
<b>PFO-AP</b>	Joint for PFO-AC Connector	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
<b>PCPS110</b>	Cable ties	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>PFO-SM/B</b>	In insensitive Armed Fiber Optic 8 pairs	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2005</b>	Single relay board	-	-	1	1	-	-	1	1	-	-	1	1	-	-	1	1
<b>PUCP2006</b>	Double relay board	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4
<b>PMSW</b>	Management software	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### SYMBOLS LEGEND

F optional

- not necessary

\* insensitive fiber to be used for the connection between SNAKE analyser and the start and the end of each zones (min. 10m., max 10Km.)



## WPS system

### Technical characteristics

	<b>Sensor</b>	<b>Concentrator</b>	<b>MPX</b>
Power supply	From concentrator	55 Vdc	55 Vdc
Quiescent current	1 mA	20mA@55V	50mA
Operating temp.	-30°C ~+60°C	-30°C ~+60°C	-5°C ~+60°C
Dimensions	80x80x50 mm	125x125x50 mm	5U 19" rack
Weight	400 gr.	800 gr.	2,0 kg.



#### Operation

Wires connected to special sensor poles that create a physical barrier and detect movement or mechanical stresses caused by divergences and displacement of each single wire and their create a physical barrier

#### Installation

It can be used over or behind pre-existing fences/walls or as a self-standing barrier

#### Length

It's a modular system. 300m of wire for each sensor, so the length of the zone depends on its height. 25,6 Km with a perimeter unit MIND (supposing 6 lines of sensitive wire placed at a distance of 15 cm one from the other)

#### Alarm zone

Every 50 meters

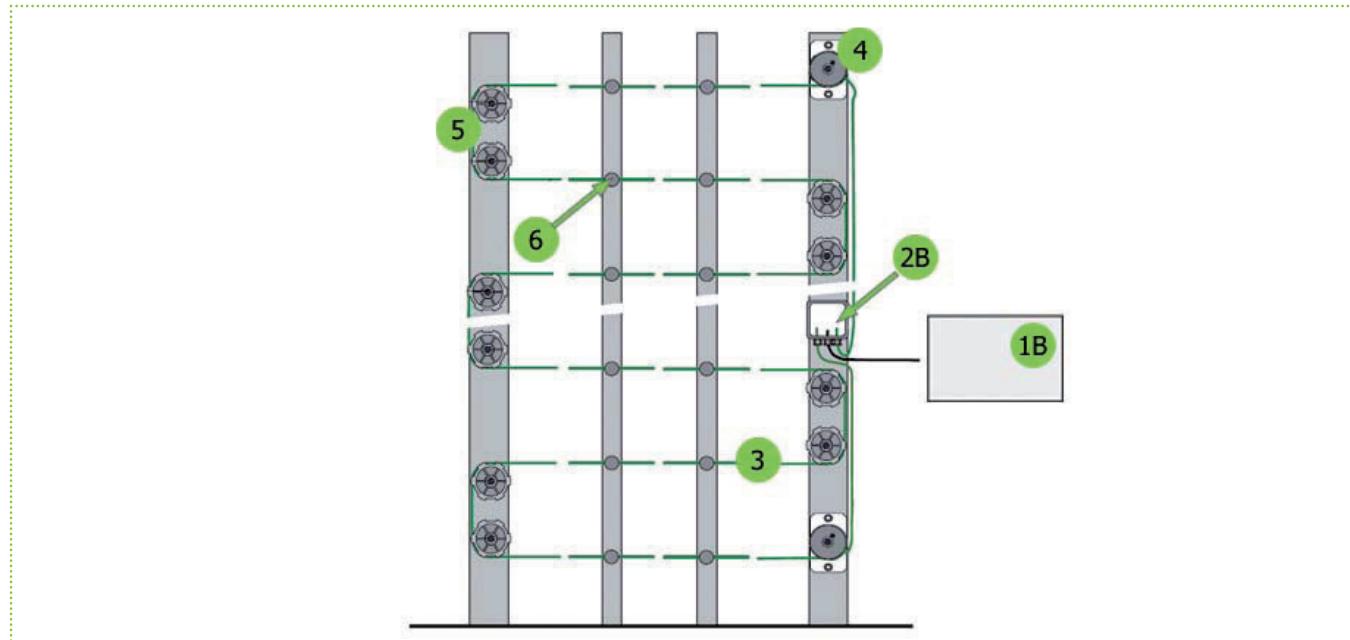
#### Advantages

Physical and sensitive barrier in a single system. Automatic sensitivity control (on the concentrator). Immune to animals and environmental conditions.

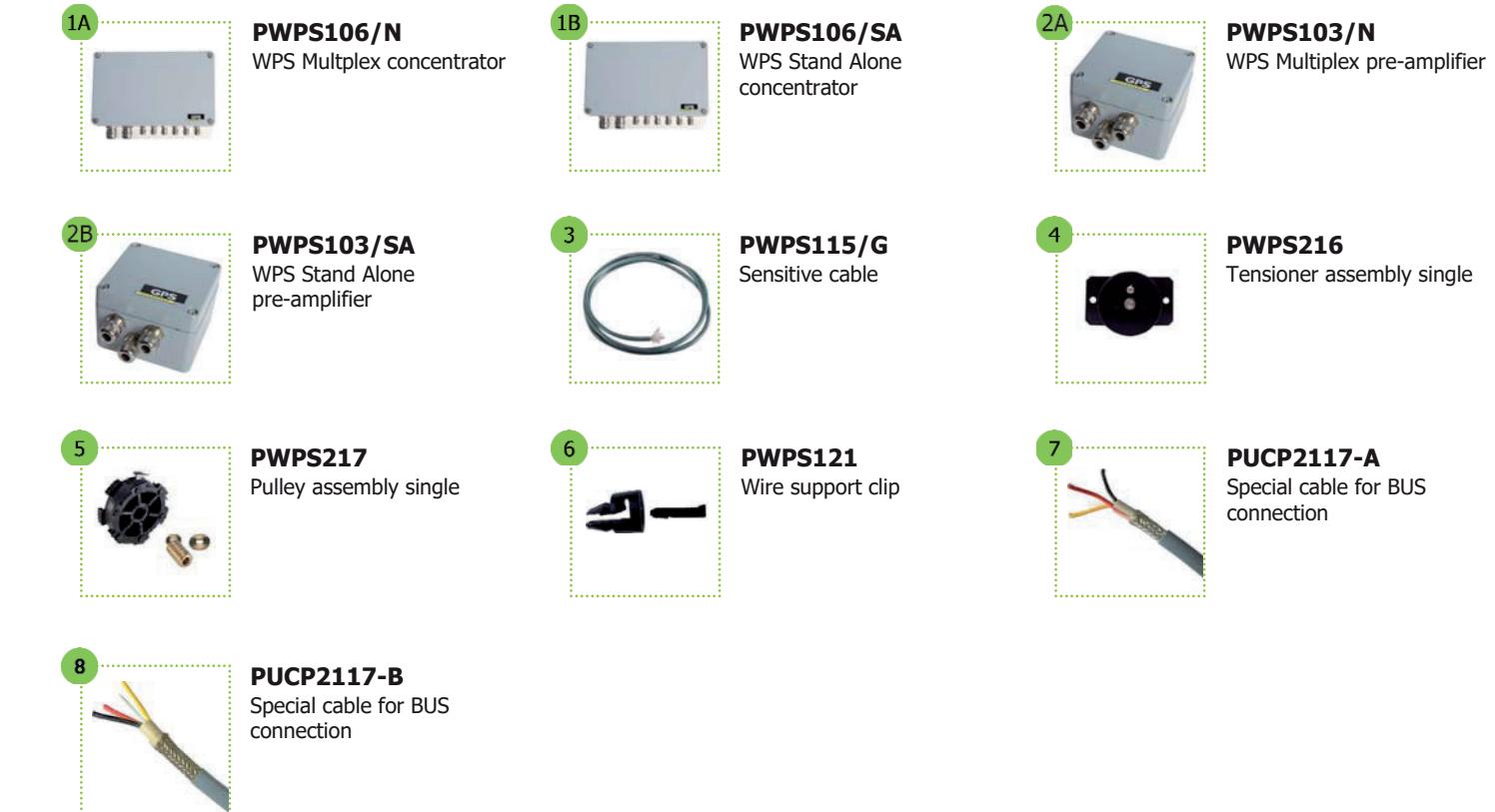
### Versions

<b>PWPS106/N</b>	Concentrator, COM115 communication, power supply 55 Volt
<b>PWPS106/N/12</b>	Concentrator, COM115 communication, power supply 12 Volt
<b>PWPS106/N/485/12</b>	Concentrator, RS485 communication, power supply 12 Volt
<b>PWPS106/N/485</b>	Concentrator, RS485 communication, power supply 55 Volt
<b>PWPS106/SA</b>	Stand Alone concentrator, USB communication, power supply 12 Volt

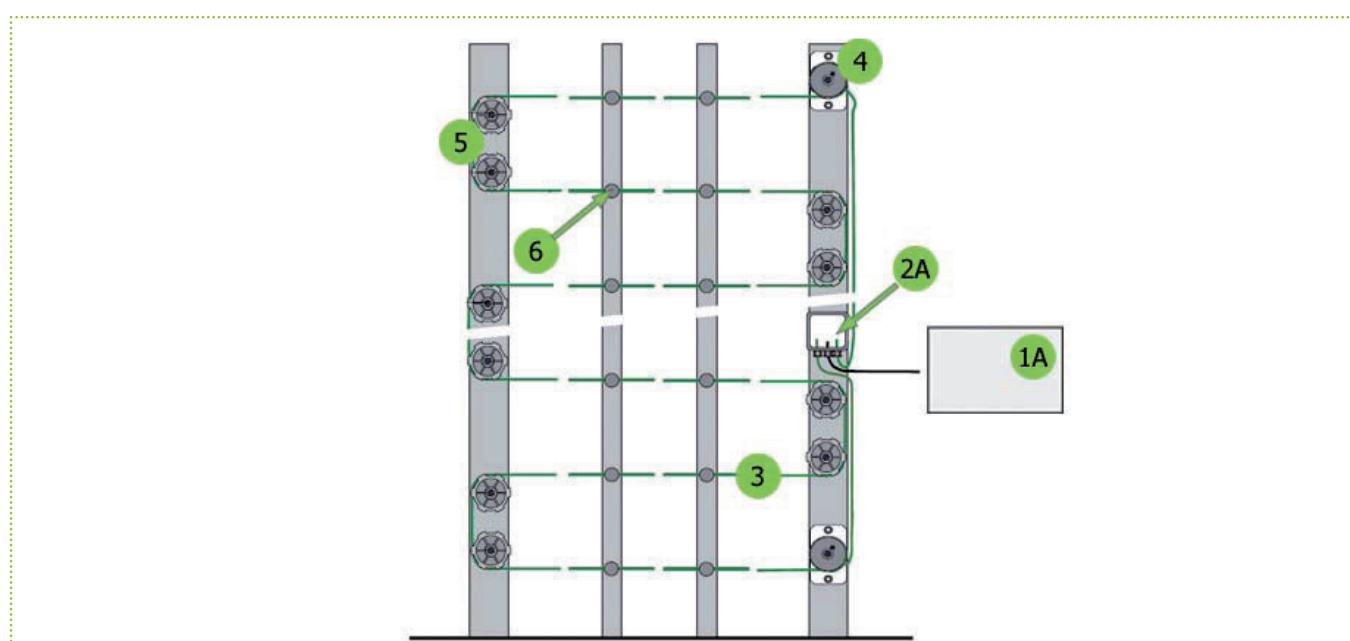
### TYPICAL scheme - WPS STAND ALONE system



### Components



### TYPICAL scheme - WPS MULTIPLEX version



### Accessories



### WPS system composition tutorial

The PWPS106 concentrator can manage up to 8 zones. For each zone it's necessary:

1	PWPS103	Pre-amplifiers WPS
300m	PWPS115	Sensitive wire
2	PWPS216	Tensioner assembly single
2xn° passages-1	PWPS217	Pulley assembly single
N° passages x n°pole inter.	PWPS121	Wire support clip

# TPS system



## Technical characteristics

	<b>Sensor</b> from concentrator	<b>Concentrator</b> 55 Vdc 20mA@55V	<b>MPX</b> 55 Vdc 50mA
Power supply			
Quiescent current	1 mA		
Operating temperature	-30°C ~+60°C	-30°C ~+60°C	-5°C ~+60°C
Dimensions	80x80x50 mm	260x190x95 mm	5U 19" rack
Weight	400 gr.	300 gr.	2,0 kg.



Mechanical - zone alarm for each wire



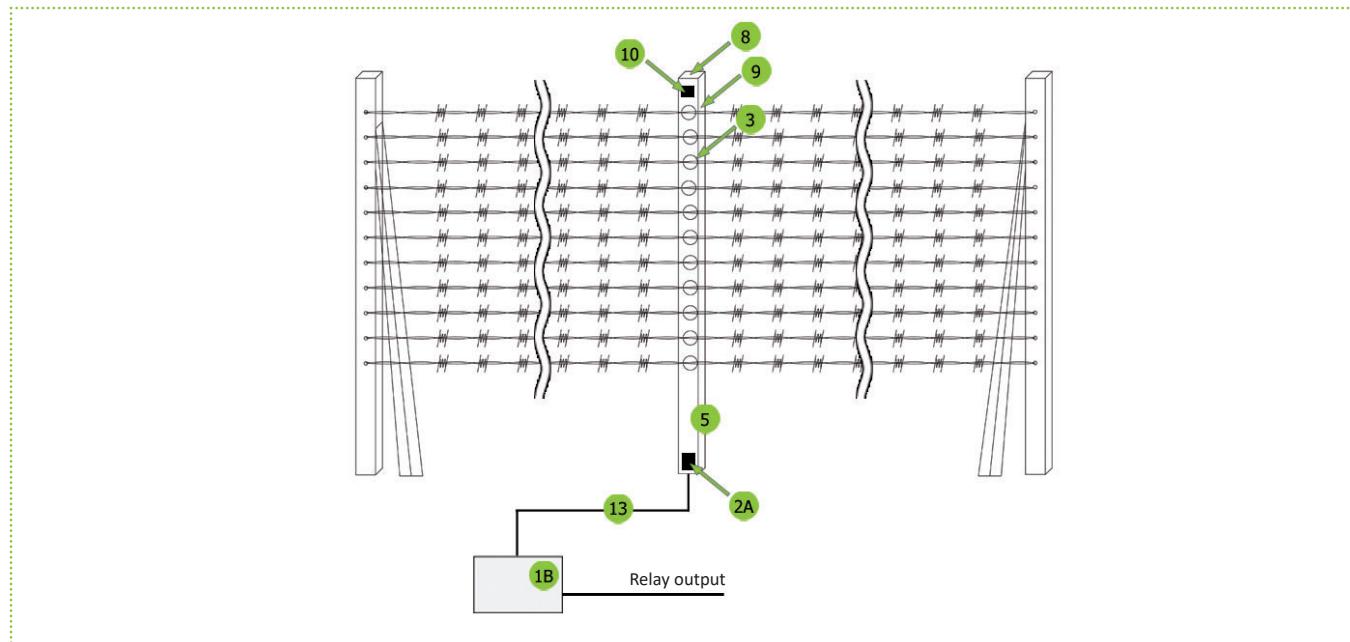
Electronic - zone alarm

<b>Operation</b>	Wires connected to special sensor poles that detect unusual movements and create a physical barrier
<b>Installation</b>	It can be used over or behind pre-existing fences/walls or as a self-standing barrier
<b>Lenght</b>	It's a modul system. From 30m to 31km with a perimeter unit MIND (Multiplex only for electronic TPS version)
<b>Alarm zone</b>	Every 60 meters or less
<b>Advantages</b>	Physical and sensitive barrier in a single system. Barriera fisica e sensibile in un unico sistema. Immune to animals and environmental conditions

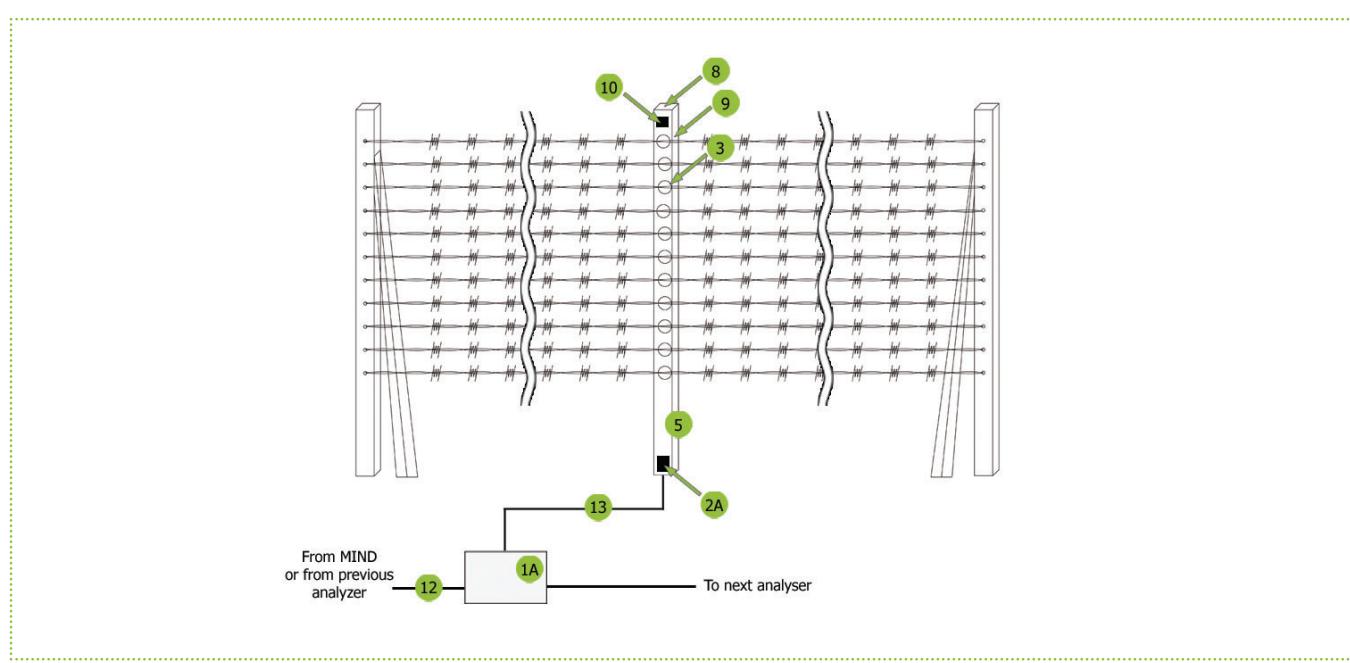
## Versions

<b>PTU-5500</b>	TPS Stand Alone concentrator
<b>PTU-5502</b>	TPS Multiplex concentrator, 48Volt
<b>PTU-5501</b>	TPS Multiplex concentrator, 12Volt, RS485

### Schema TIPICO - versione TPS STAND ALONE



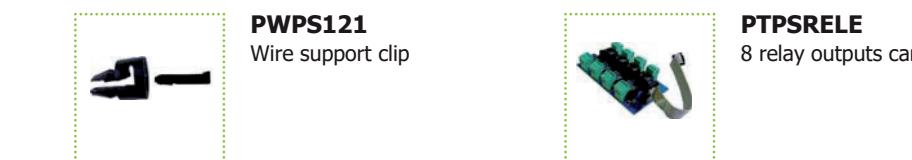
### Schema TIPICO - versione TPS MULTIPLEX



### Components



### Accessories



### TPS system composition tutorial

1 concentrator PTU-5502 can manage up to 8 sensor pole. For each zone (sensor pole) is necessary:  
(the example refers to straight 3 meter pole)

1	PTPS-15	TPS Pre-amplifier
1	PTA-SP30	Sensor post
1	PTA-SPC30	Sensor post cover
3	PTA-CSB	Cover support bracket
2	PTA-IB	Intermediate bracket
3	PTA-T	Tamper
1	PTA-TC	Top cap
1	PTA-BC	Bottom cap
1xbarbed wire	PTA-BW	
1xbarbed wire	2 PTA-I	

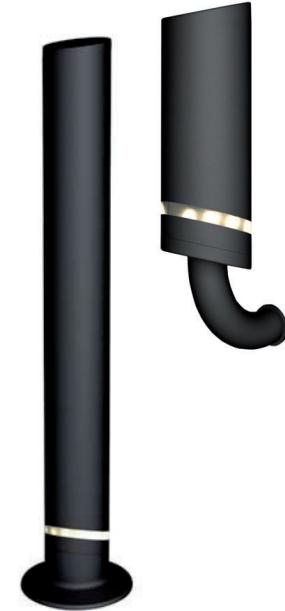


# RADAR BLADE system



## Technical characteristics

	SA	MPX
Performance	80/120M	
Working frequency	24,000÷24.250 GHz	
Maximum power	20 dBmW EIRP	
Modulation	CHIRP	
Accuracy cross point	± 1 m	
Virtual zones	10	
Height	80/90 cm	
Power supply	10.2V (min.) / 12V (nom.) / 13.8V (max)	
Power consumption	175mA@48VDC +6mA for each alarmed relay (min.) 330mA@24VDC +11mA for each alarmed relay (nom.) 550mA@12VDC +20mA for each alarmed relay (max)	
Power consumption	-30°C ~ +55°C	
IP protection	IP65	
Dimensions	wall mount version h 480 mm; Ø 140 mm basement version h 895 mm; base 295 mm; Ø 140 mm	



<b>Operation</b>	Based on CHIRP Radar technology, the system detects volume change in the generated reflective field
<b>Installation</b>	Perimeter protection, Access control
<b>Length</b>	From 12m to 120m
<b>Alarm zone</b>	Up to 10 zones per radar (Crossing point version)
<b>Advantages</b>	Zoning-reflective technology (able/desable , direction of crossing options). Up to 3 simultaneous crossings can be detected. Auto-learning of the environment. All wiring is centred in one location. Aesthetically pleasing.

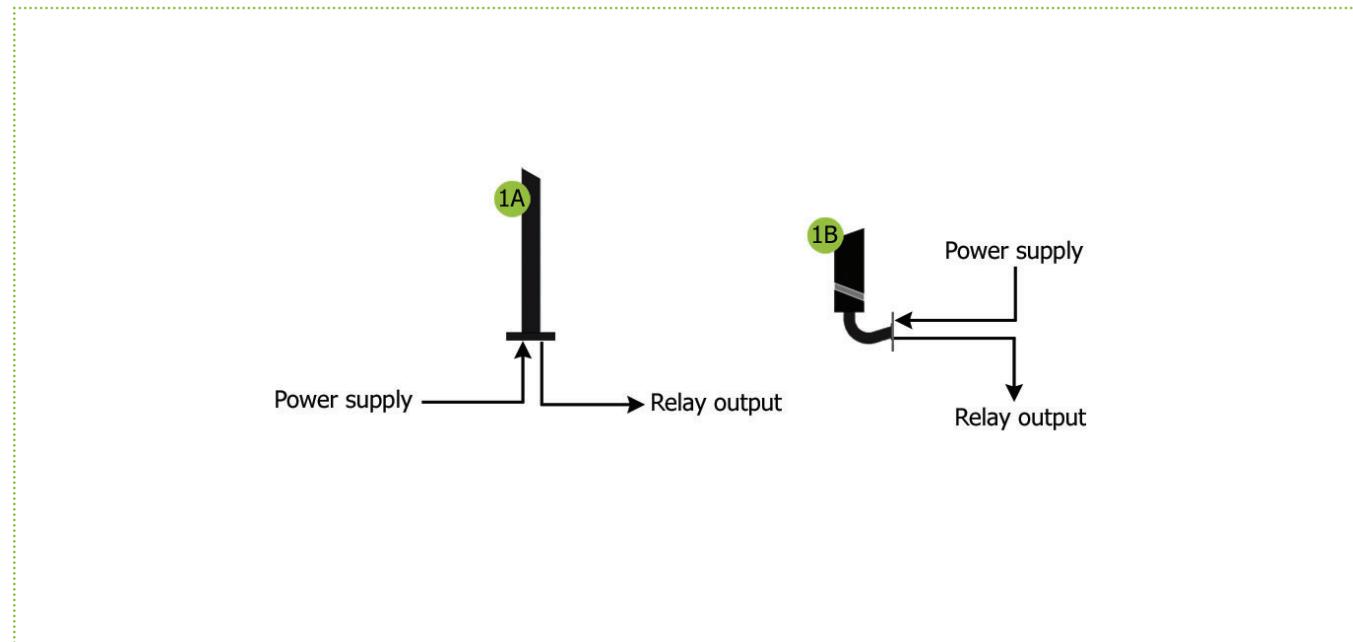
## Versions

<b>PRU-1001x/BL</b>	Radar Blade Stand Alone, USB, 4 relay outputs, version with basement
<b>PRU-1011x/BL</b>	Radar Blade Stand Alone, USB, 4 relay outputs, wall-mount version
<b>PRU-1001xC/BL</b>	Radar Blade Stand Alone, USB, 8 relay outputs, version with basement, with crosspoint
<b>PRU-1011xC/BL</b>	Radar Blade Stand Alone, USB, 8 relay outputs, wall-mount version, with crosspoint
<b>PRU-1201x/BL</b>	Radar Blade Multiplex, version with basement
<b>PRU-1211x/BL</b>	Radar Blade Multiplex, wall-mount version
<b>PRU-1201xC/BL</b>	Radar Blade Multiplex, version with basement, avec crosspoint
<b>PRU-1211xC/BL</b>	Radar Blade Multiplex, wall-mount version, with crosspoint

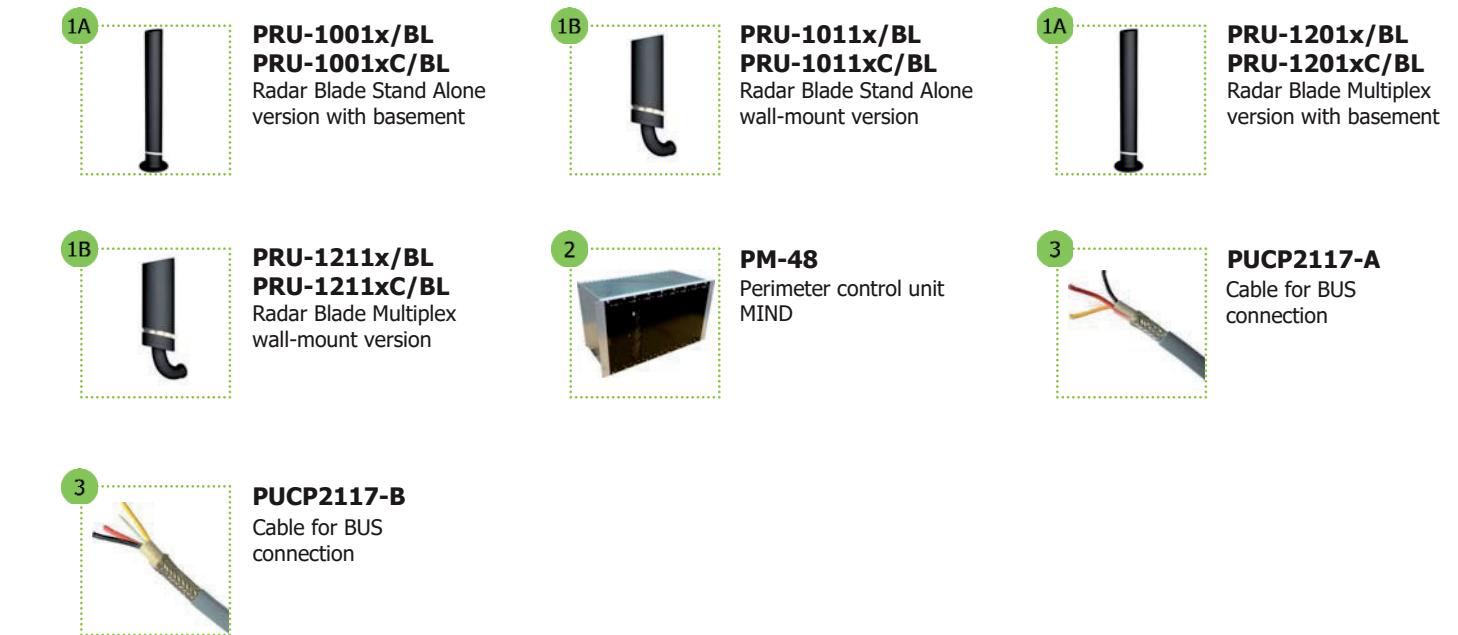
x=1 -> range 80m

x=2 -> range 120m

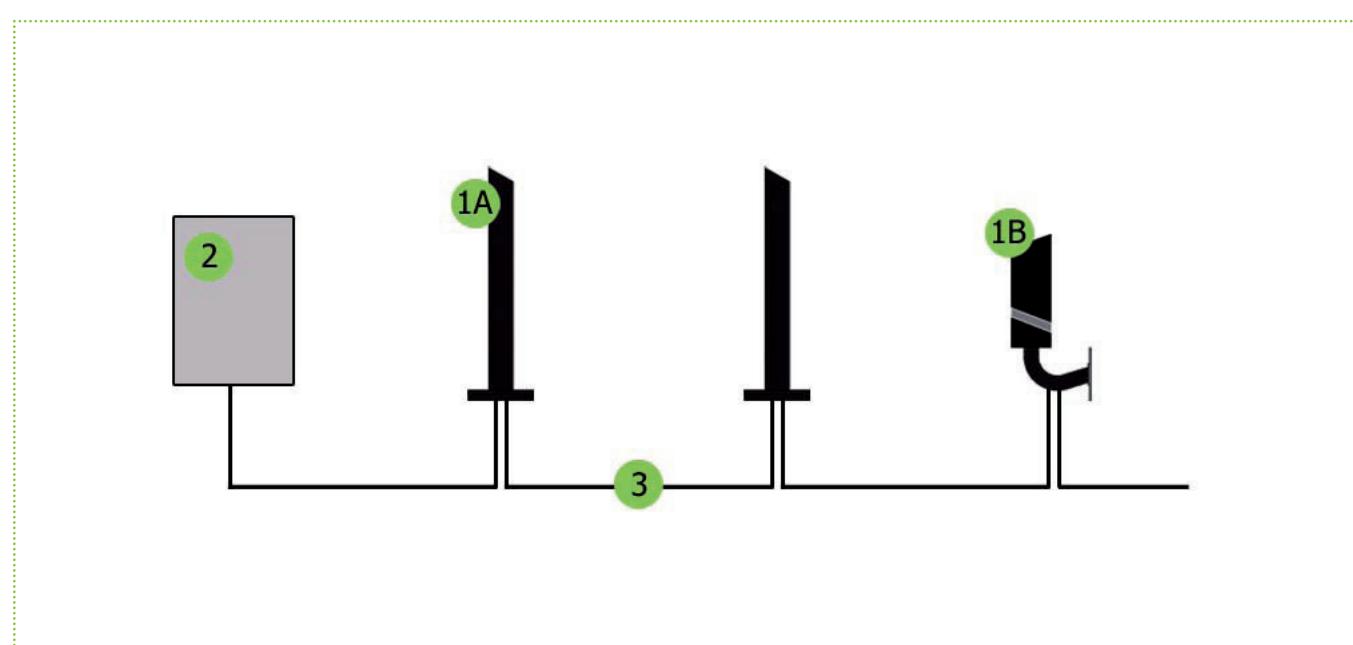
### TYPICAL scheme - RADAR BLADE STAND ALONE version



### Components



### TYPICAL scheme - RADAR BLADE MULTIPLEX version



### Accessories





## RADAR BLADE Multiplex system composition tutorial

Protection lenght - in meters		120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920
<b>PM-48</b>	MIND Unit (48V)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-12</b>	MIND Unit (12V)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AC115</b>	COM115 communication board	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>PM-AC485</b>	RS485 communication board ( )	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>PM-AR</b>	Rack chassis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PM-AP1</b>	1 Slot Front Panel	5	4	4	3	3	2	2	1	1	1	1	1	1	1	1	1
<b>PMA-KSR</b>	Mounting kit for 2 relay cards	1	2	2	3	3	4	4	5	5	6	6	6	6	6	6	6
<b>PM-AA4812</b>	Power supply	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>PRU-12xxxC/BL</b>	Radar Blade	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PUCP2005</b>	Single realy board	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1
<b>PUCP2006</b>	Double realy board	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
<b>PUCP2117-B</b>	Bus connection cable	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>PUCP2117-A</b>	Bus connection cable	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**

### SYMBOLS LEGEND

- ( ) for RS485 communication
- F optional
- not necessary
- \* to be used for the connection between MIND™ and peripheral for distance higher than 3000m
- \*\* To be used for the connection between MIND™ and peripheral for distance less than 3000m



# MILES system

## Technical characteristics

Maximum coverage	Pipeline: 25 Km Fences: 2 Km Buried version: 4 Km
Alarm point approximation	Pipeline: ≤0,5% Fences: ≤1% Buried version: ≤1%
Number of virtual zones	256
Detection configuration	Distributed sensor with a SM fibre optic 9/125
Control Power supply	66W max, 115..230V 50/60Hz
Field Power Supply	None
Controller dimensions	482(19")x175(5U)x420mm
Laser specification	Classe IIIA, max power output 10mW Wavelength 1530/1550
Optical connections	FC/APC
Controller operating system	Windows 10
Alarm interface	Via 10/100 Base-T to SCS software Via Bus 485 to relay card



### Operation

By using optical interferometrics technology it detects all the intrusion attempts such as climbing, butting or the breaking through of a fence; sabotage attempts on pipelines and approaching of intruders in the buried version. The FO cable (single mode 9/125) when subject to mechanical stress (pressure, vibration, motion) changes the transmission characteristics of the coherent light inside the fiber giving the alarm.

### Installation

Fences, Pipelines, Conduits, Terrain strips

### Length

Modular system: from 100m up to 2km for fences, 4 KM for buried version and 25Km for pipelines

### Alarm zone

Up to 256 zones.

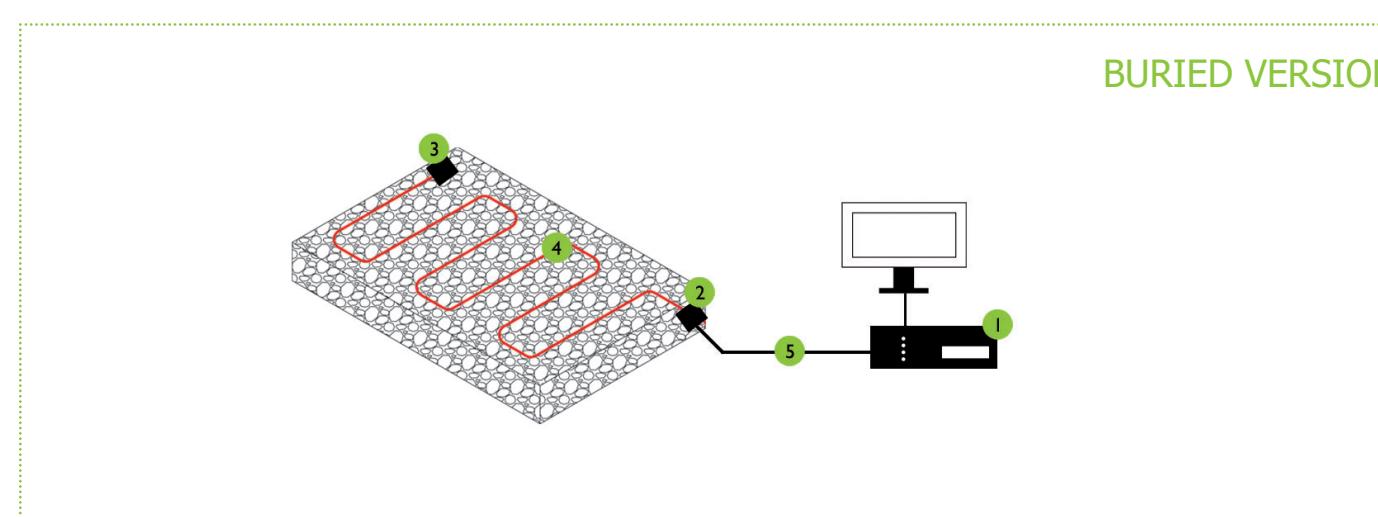
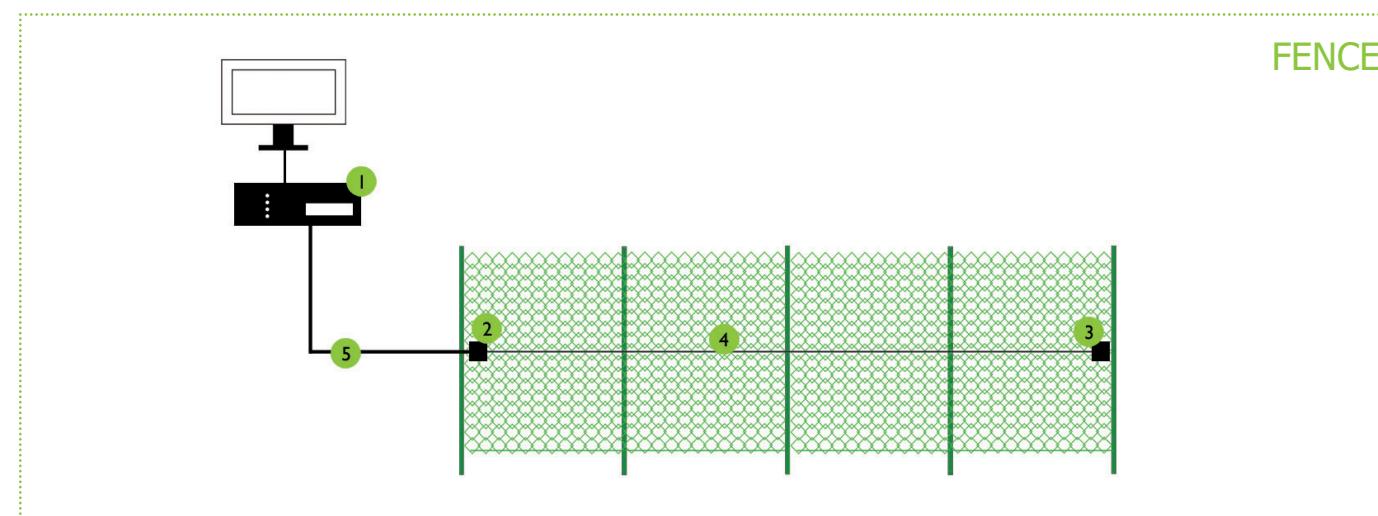
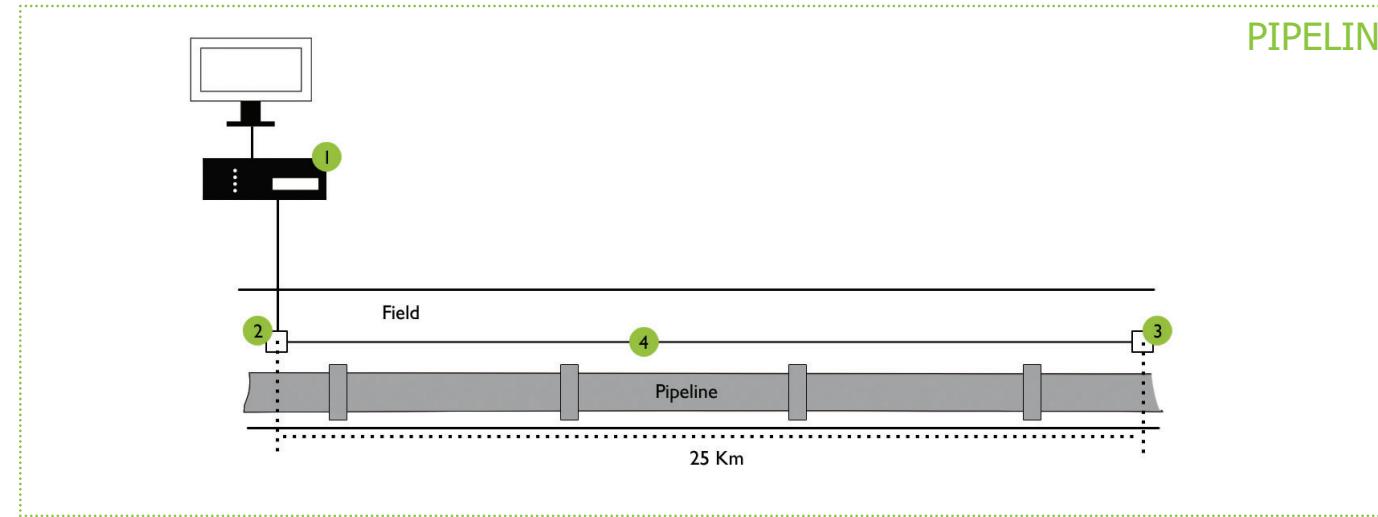
### Advantages

No power supply on the field required. Digital signal analysis with programmable pattern recognition. Filters and masks to change sensibility for every zone. Not affected by electromagnetic disturbs and lightening. Not affected by weather conditions. Point of intrusion with precision of few meters. Existing spare fibers can be used

## Versions

<b>PFO-MFL1</b>	Version for fence with sensitive area of max 1 km
<b>PFO-MFL2</b>	Version for fence with sensitive area of max 2 Km
<b>PFO-MBL1</b>	Buried version with sensitive area of max 1 Km
<b>PFO-MBL2</b>	Buried version with sensitive area of max 2 Km
<b>PFO-MBL4</b>	Buried version with sensitive area of max 4 Km
<b>PFO-MPL10</b>	Version for pipeline with sensitive area of max 10 Km
<b>PFO-MPL25</b>	Version for pipeline with sensitive area of max 25 Km

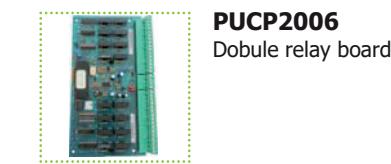
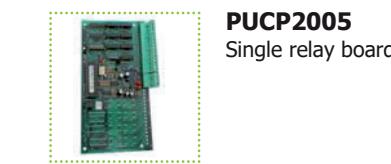
## TYPICAL scheme - MILES system



## Components



## Accessories



## MILES system composition tutorial

*Protection lenght up to 1000 meters*

<b>PFO-MFL1</b>	Miles analyser 1000m	1	
<b>PFO-MSB</b>	Start box sensitive area	1	
<b>PFO-MEB</b>	End box sensitive area	1	
<b>PFO-MFC</b>	Sensitive fiber optic	1000	
<b>PFO-MFC</b>	Insensitive fiber optic	*	
<b>PFA-URC</b>	USB-RS485 converter	1	
<b>PCPS110/N</b>	Cable ties	50	

*Protection lenght up to 2000 meters*

<b>PFO-MFL2</b>	Miles analyser 2000m	1	
<b>PFO-MSB</b>	Start box sensitive area	1	
<b>PFO-MEB</b>	End box sensitive area	1	
<b>PFO-MFC</b>	Sensitive fiber optic	2000	
<b>PFO-MFC</b>	Insensitive fiber optic	*	
<b>PFA-URC</b>	USB-RS485 converter	1	
<b>PCPS110/N</b>	Cable ties	100	

*Nombre de zone*

	4	8	12	16	20	24	28	32
<b>PUCP2005</b>	Single relay board	-	1	-	1	1	-	1
<b>PUCP2006</b>	Double relay board	1	1	2	2	3	3	4
<b>PMA-KSR</b>	Kit for relay board	1	2	2	3	3	4	5
<b>PM-AP1</b>	Slot front panel 10TE	6	5	5	4	4	3	2
<b>PM-AR</b>	19" 6U rack cabinet	1	1	1	1	1	1	1
<b>PM-AA12</b>	12V power supply	1	1	1	1	1	1	1

### SYMBOLS LEGEND

\* distance between analyzer and start box

# SUN system

## Technical characteristics

Coverage per unit	1200 mters
Maximum number of joints	6 (with cold connectors and in-line adaptor)
Power supply	10,5 ÷ 16 Vcc (12 Volt nominal)
Current	Max 50mA @ 12 Vcc
Relay output	1 (C, NC, NA)
Contact rating	100mA @12Vcc
Wavelength	850 nm
Optical connectors	ST
Technology	SMD
Operating temperature	-30° ÷ +70°C
Cabinet	Metallic
Cabinet Dimensions (WxHxD)	87x45x72 mm



### Operation

SUN generates an infrared light that is sent along the fibre optic. At the same time, it analyzes the light that reaches the end of the protected area. The emitted light is appropriately modulated to avoid masking the receiver, placed at the end of the security fibre optic, with another source of light. In real time, SUN analyses of the light received and if this is insufficient, because of an attack, it generates an alarm.

### Installation

SUN protects solar and photovoltaic panels from attempted removal, joining the panels together with a fibre optic cable.

### Length

1200 meters

### Advantages

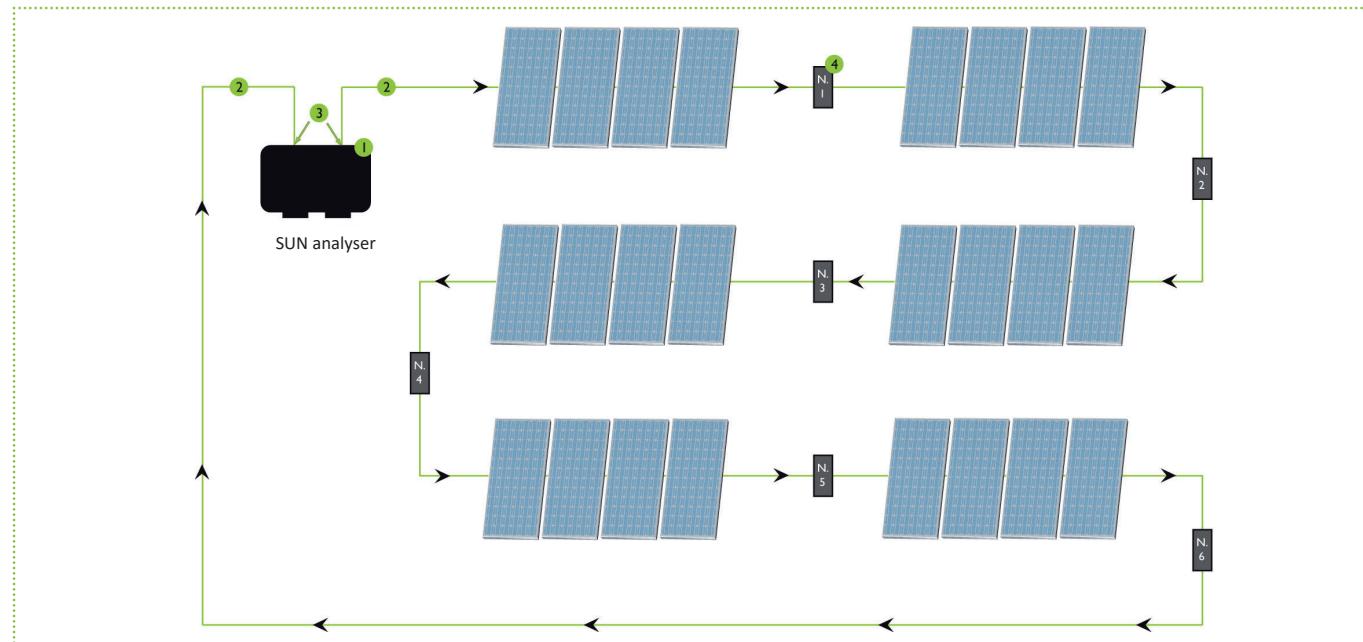
The system allows the protection of very large photovoltaic fields with detection of the area subject to attack.

## Versions

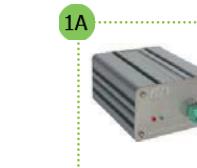
### PFO-S

SUN sensor for 1200 meters de fiber optic

## TYPICAL scheme - SUN



## Components



**PFO-S**  
Sensor or 1200 meters of optical fiber for the protection of solar panels



**PFO-SCMM2**  
Multi-modal single-fiber optic cable 62,5/125, diameter 2 mm



**PFO-SACSTM**  
Multi-modal ST connector, ceramic ferrula 62.5 / 125



**PFO-SAP**  
Loop for ST connectors



**PFO-SAKTC**  
Pincers for connecting fiber optic

## SUN system composition tutorial

Protection length in meters single passage		800	1600	2400	3200	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000	12800
Number of zones		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PFO-S</b>	SUN sensor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>PFO-SCMM2</b>	Multi mode Fiber Optic	800	1600	2400	3200	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000	12800
<b>PFO-SACSTM</b>	ST Multimode Connector	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
<b>PFO-SAP</b>	Loop for ST connector (*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)
<b>PFO-SAKTC</b>	Pincers for connecting fiber optic	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

### SYMBOLS LEGEND

F optional

\* for each SUN detector it is possible to make a maximum number of 6 junctions each with two junctions (PFO-SACTM) and a loop (PFO-SAP)



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