



Cerberus PRO – C-NET devices

Planning Tool

www.siemens.com/cerberus

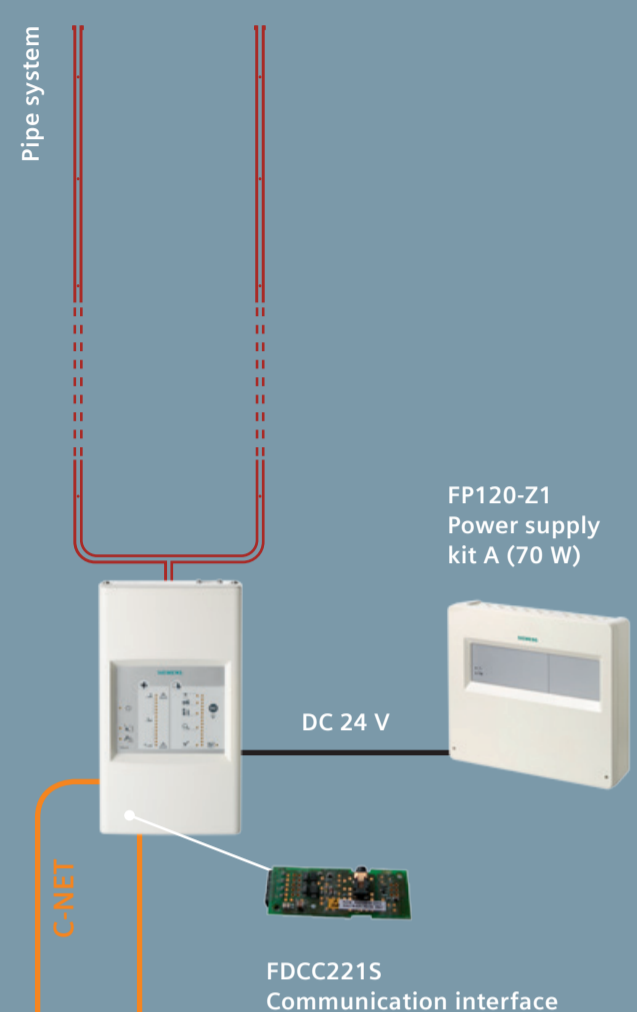
www.siemens.com/cerberus

Aspirating smoke detection

	FDA221	FDA241
Detection modes:	Ultra sensitive Automatic discrimination Robust	✓ ✓ ✓
Communication protocol	FDnet/C-NET	FDnet/C-NET
Operating voltage	DC 19...30 V	DC 19...30 V
Sound level	- High 33 dB - Medium 33 dB - Low 26 dB	- High 37 dB - Medium 33 dB - Low 30 dB
Display	- 3 alarm state indicators - Fault indicator - Bargraph for smoke and airflow level	- 4 alarm state indicators - Purge, dust, fault indicator - Bargraph for smoke and airflow level
Area coverage	Up to 500 m²	Up to 800 m²
Alarm threshold	- Prealarm and fire 1 (5 parameter sets) 0.14...2.0% obs/m - Fire 2 (5 parameter sets) 6.0...20% obs/m	- Info alarm, prealarm and fire 1 (10 parameter sets) 0.03...2.0% obs/m - Fire 2 (10 parameter sets) 2.0...20% obs/m
Air inlet pipe	Metric: 21 mm ID...25 mm OD	Metric: 21 mm ID...25 mm OD
Pipe length	- 30 m (single pipe length) - 2x25 m (branched pipe length)	- 60 m (single pipe length) - 4x25 m (branched pipe length)
Relay outputs	3x2 A / 30 V	4x2 A / 30 V
Terminals	0.2...2.5 mm² (30 - 12 AWG)	0.2...2.5 mm² (30 - 12 AWG)
Dimensions (WxHxD)	155x280x114 mm	155x280x114 mm
Operating current	- 150 mA nominal - 250 mA in alarm	- 150 mA nominal - 250 mA in alarm
Operating temperature	-20...+60 °C	-20...+60 °C
Relative humidity	5...95% rel. (no condensation)	5...95% rel. (no condensation)
Protection category	IP30	IP30
Data sheet	A6V10331032	A6V10331032

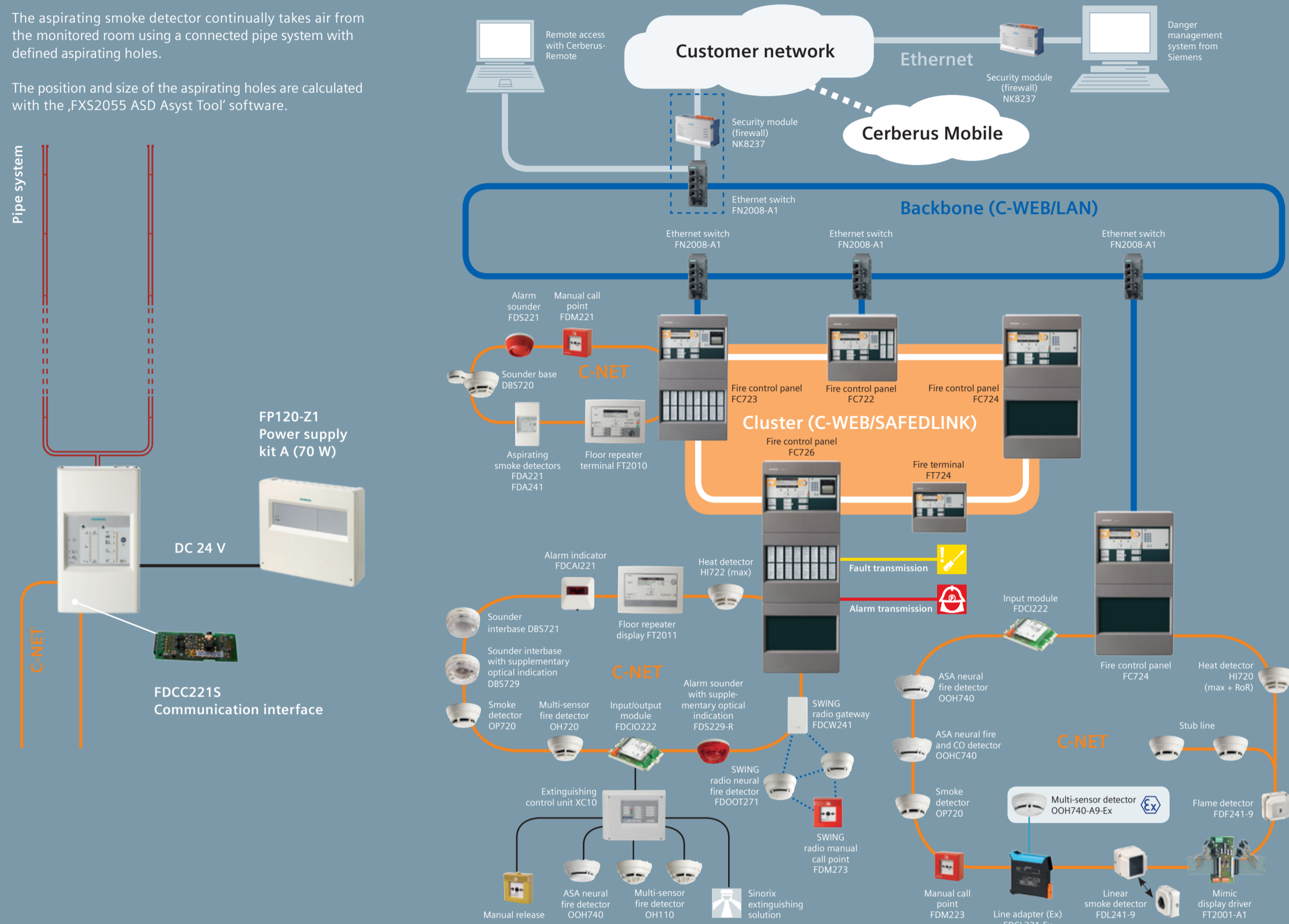
The aspirating smoke detector continually takes air from the monitored room using a connected pipe system with defined aspirating holes.

The position and size of the aspirating holes are calculated with the 'FXS2055 ASD Asyst Tool' software.



Cerberus PRO – enjoy protecting

Powerful control panels, clever fire detectors and smart peripheral devices. This is what our comprehensive Cerberus™ PRO family offers. The brief overview below demonstrates the most important system components.



Alarm sounder tones

No.	Tonality	Frequency pattern Sweep from – to	Pulse pattern	Adjustable FDS221 and FDS239 sound intensity level (typ. values in [dBA/1m]*)		Norm
				at 12 V	at 32 V	
1	Continuous	970 Hz		95 88 81	101 92 82	"Detecto" BS 5839 Part 1 1988
2	Intermittent	950 Hz		96 87 79	100 91 81	"Alert" BS 5839 Part 1 1988
3	Sweep-down	1200 Hz – 500 Hz		96 87 79	100 91 80	DIN-Tone DIN33404 Part 3
4	Slow-whoop Sweep-up, linear	500 Hz – 1200 Hz		97 88 81	101 92 82	NEN2575 (Netherlands)
5	Pulse tone	500 Hz		94 85 75	97 88 75	Swedish Standard SS 03 17 11, No. 1 "Imminent Danger"
6	Intermittent	500 Hz		93 84 75	96 87 75	Swedish Standard SS 03 17 11, No. 6 "Local Warning"
7	Continuous	500 Hz		94 85 76	97 88 76	Swedish Standard SS 03 17 11, No. 4 "All clear"
8	Alternating	560 Hz 440 Hz		94 85 75	98 89 76	"French fire sound" NF S 32-001-1975
9	Intermittent	420 Hz		94 85 76	98 89 77	Australia "Alert" AS 2220 -1978
10	Slow-whoop Sweep-up, linear	500 Hz – 1200 Hz		96 89 81	100 93 82	Australia "Action" AS 2220 -1978
11	Intermittent	970 Hz		99 89 82	102 92 83	ISO 8201 US Temporal Tone LF

* Sound intensity >= 2 dBA
Sound intensity depending on the angle, see 'Operating instruction 008109'

Samples for all alarm sounder tones are available on the Cerberus PRO Web site.

Robust or sensitive? The solution often lies somewhere in between.

High Suppression (PS8)	Suppression (PS5)	Suppression CO (PS12)	High Compensation (PS7)	Robust (PS2)	Balanced (PS4)	Balanced CO (PS10)	Fast Response (PS6)	High Sensitive Fast (PS9)
<p>Application area For operating conditions susceptible to heavy optical deceptive phenomena. Examples include dance floors in discotheques (deceptive phenomena: dry ice) or churches during special services (deceptive phenomena: frankincense).</p> <p>Description In this parameter set, the detector will not create an unwanted alarm. With a rise in temperature of only 8K (open fire), the optical sensors will be further analyzed and if the signal corresponds to a fire, an alarm will be triggered. In addition, the detector will also trigger an alarm as a rate of rise heat detector or if its static temperature limit is exceeded.</p> <p>Expert advice High suppression parameter set is used in traditional concepts where smoke detection is turned off completely and replaced by thermal detection during events where dry ice is used. This parameter set allows much faster detection than switching to purely thermal detection. This enhances safety at critical times where visibility is reduced and large numbers of people are in attendance. Further options include the ability to switch between parameter sets so that a more sensitive detection mode can be used when no dry ice is likely. The detector complies with the norm EN 54-5 and in some jurisdictions heat detector spacing may be applicable.</p>	<p>Application area Difficult environments subject to heavy deceptive phenomena. Application examples include canteen kitchens or manufacturing areas with operational-related deceptive aerosols.</p> <p>Description Highly robust behavior, therefore very suitable for applications with deceptive phenomena such as steam, heavy cigarette smoke or exhaust gases. At the same time, the detector reacts with the ASA parameter set quickly and reliably in case of a real fire due to the dynamic influencing of the parameters.</p>	<p>Application area Difficult environments subject to heavy deceptive phenomena. Application examples include manufacturing areas with operational-related aerosols. Additional separate CO toxic gas detection and environmental monitoring.</p> <p>Description Highly robust behavior, therefore very suitable for applications with deceptive phenomena such as steam, cigarette smoke, etc. At the same time, the detector reacts with the ASA parameter set quickly and reliably in case of a real fire due to the dynamic influencing of the parameters. Sensitivity is also influenced by the CO concentration. Separate CO alarming and control for the detection of unhealthy or dangerous carbon monoxide buildup. Separate signaling of environmental thermal thresholds.</p>	<p>Application area Applications with deposits resulting from excessive dust or dirt over a long-time period. Here, optical detectors usually reach their limit quickly, resulting in a reduced operational lifetime.</p> <p>Description This parameter set is identical to the Robust setting except that the drift compensation is extended. This parameter set is therefore especially suited for rooms in which a lot of dust and other deposits can be expected to build up over a period of time. The detector maintains the set detector sensitivity and resistance to deceptive phenomena. The detector reacts quickly and reliably in case of a real fire.</p>	<p>Application area Difficult environmental conditions. Examples are event locations or underground garages with moderate deceptive phenomena and risks to individuals.</p> <p>Description Designed for robust behavior. This ASA parameter set is particularly suitable for applications with deceptive phenomena such as cigarette smoke, dust and exhaust gases. At the same time, the detector reacts very quickly and reliably in case of a real fire. Compared to the 'Suppression (PS5)' parameter set, the 'Robust (PS2)' parameter set may be used to improve detection speed on higher ceilings while still retaining sufficient resistance to false alarms.</p>	<p>Application area Standard applications. Rooms with moderate deceptive phenomena.</p> <p>Description For use in normal environments. This parameter set has a balanced response characteristic; sensitive in case of a fire but still tolerant of transient deceptive phenomena. Due to its distinct dynamic, the detector reacts quickly to open fires as well as smoldering fires. This ASA parameter set reacts robustly to deceptive phenomena such as cigarette smoke or small amounts of steam.</p> <p>Additional information This parameter set is often used when the system is set in unattended mode (e.g. at night).</p>	<p>Application area Rooms where an increased CO concentration in the event of a fire is possible. Moderate deceptive phenomena.</p> <p>Description Using the three criteria: smoke, heat and CO the device is more sensitive to fires creating CO than the parameter set 'Balanced (PS4)' without the CO signal. The device is robust with deceptive phenomena such as cigarette smoke or a small amount of steam. This parameter also offers early alarming in the event of fires generating a large amount of CO, e.g. mattress fires.</p>	<p>Application area Rooms in which sensitive and quick detection is essential such as rooms with high ceilings, warehouses with flammable material (increased risk of fire) and application areas where adequate life protection can only be ensured by the fastest possible detection. Due to special thermal algorithms, usage at low temperatures is also possible.</p> <p>Description This parameter set reacts in a fast and sensitive manner. It is thus especially suited for rooms without deceptive phenomena, where the priority is on detecting fires as early as possible.</p> <p>Expert advice The high thermal influence from open fires transports the dark smoke particles that are typical for this kind of fire quickly to the ceiling. Due to the backward scattering and the "Fast Response" setting, the detector is sensitive. This makes the detector a perfect replacement in situations where ionization detectors would normally have been considered optimal.</p>	<p>Application area Rooms in which an especially high sensitivity to smoldering and open fires is required. Examples include museums with high ceilings, clean production halls or applications where adequate life protection can only be ensured by the fastest possible detection. Due to special thermal algorithms, usage at low temperatures is also possible.</p> <p>Description This parameter set allows for the fastest possible detection for both open and smoldering fires. It is therefore intended for use in clean environments with no deceptive phenomena.</p>
Complies with the norm EN 54-5	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7	Complies with the norm EN 54-5, EN 54-7
<p>Application examples Multi-purpose halls, theater stages, churches, dance floors in discotheques</p>	<p>Application examples Canteen kitchens, production areas with operational-related deceptive phenomena</p>	<p>Application examples Production areas with operational-related deceptive phenomena</p>	<p>Application examples Paper mills, carpenters workshops, textile production, recycling plants</p>	<p>Application examples Event locations, conference rooms, smoking rooms, gastronomy, industry, production, underground garages</p>	<p>Application examples Offices, open-plan offices, hallways, hotel rooms, out of hours use in harsh environment areas</p>	<p>Application examples Same as for 'Balanced (PS4)', but with increased sensitivity to smoldering fires creating CO gas</p>	<p>Application examples High-ceilinged rooms, storage rooms/warehouses with flammable material, IT rooms and control of extinguishing systems</p>	<p>Application examples Hospital rooms, museums, operating rooms, cold storage, high-ceilinged rooms, when highly sensitive detection is of great importance</p>

Our world is undergoing changes that force us to think "We are the trusted technology partner for energy-efficient, safe and secure buildings and infrastructure."

In new ways: demographic changes, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned.

They manage these challenges. Siemens has the answers. Growing – for our customers, success is defined by how well we serve them. Also, our need for safety and security is constantly increasing. We need to increase comfort for the well-being of users, our need for safety and security is constantly increasing.

© Siemens Switzerland Ltd, 2015 • Order no. 0-92314-en • 01507

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract. The document contains a general product overview. Availability can vary by country. For detailed product information, please contact the company office or authorized partner.

Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Göbelstrasse 22
6301 Zug
Switzerland
Tel: +41 41 724 24 24

Cerberus PRO Planning Tool

C-NET devices

