

TECHNICAL SOLUTION OF ESS

Commercial and Industrial (0.2~2MWh)



Energy Management

Peak shaving
Monitoring and indicating status of battery and other equipment.

Easy Expansion

Modular design for easy capacity expansion.

Standard Interface

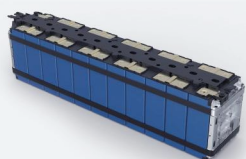
Standard interface for communication and HV connection.

High Safety

Liquid cooling system + long life time LFP cell and multiple protection.

Frequency Regulation

Fast response and high accuracy to provide regulation service for grid.



CATL-LFP-Module

Electrical Safety

Over-current / external short-circuit protection
Insulation monitoring
Equipotential bonding
Electric shock warning

Functional Protection

Overvoltage / undervoltage protection
Overtemperature / low temperature protection
Overcurrent protection
Communication abnormal protection

Chemical Safety

Flameresistant material
Safety requirements of the battery cell
Identification of hazardous substances
Prevent Battery Thermal Runaway

Mechanical Safety

Vibration resistance
Impact resistance
Explosion-proof

Material Selection

Using a 280Ah lithium iron phosphate battery with high safety and long life time.
The life cycle reaches up to **8000** times.



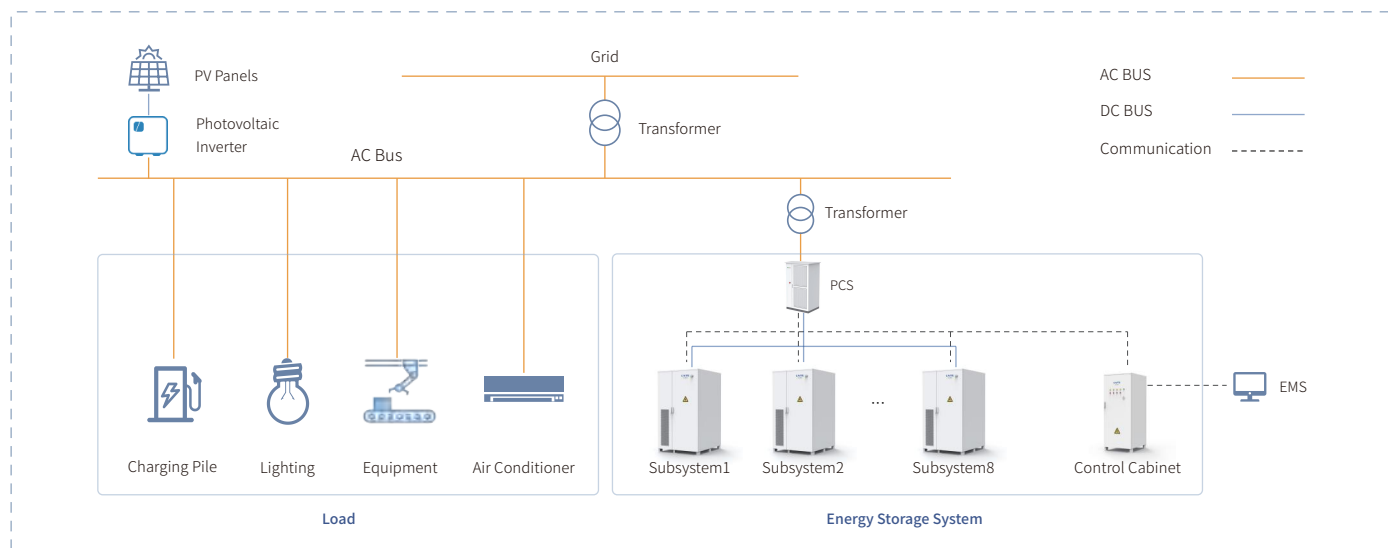
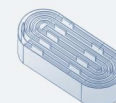
Cell Process

The electrode sheet winding process is not easy to produce burr, decarbonization and metal particles, and it has a low short circuit risk in a long-term cycle.

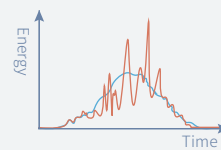
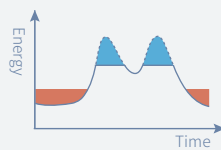
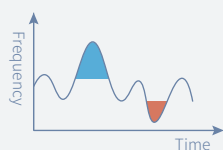


Safety Features

The results of the safety test: no fire, no explosion.
The lithium iron phosphate has high thermal stability, slow heat production rate and less heat production. The lithium iron phosphate does not release oxygen under overcharge and overdischarge.



Application Scenario:





206kWh Battery Cabinet



Control Cabinet



PCS

Max. Number of Racks in Parallel	12
PCS Specifications	500kW
Rated AC Power	500kVA / kW
Rated Grid Voltage	400Vac
Total Harmonic Distortion	<3%
Rated Grid Frequency (Range)	50 Hz / 60 Hz
Peak Efficiency	98%
Power Factor	-1 to 1 , continuously adjustable
ENERGY STORAGE	
Rated Energy DC	206.9kWh*N
Voltage Range (Nominal Voltage)	646.8Vdc ~ 831.6Vdc (739.3Vdc)
Chemistry	LFP
ENVIRONMENTAL	
Operating Temperature Range / Humidity Range	-20~50 °C (PCS derating at 45 to 55 °C)/ 0 to 95% RH non-condensing
Altitudes	<4000m (derating >2000m)
IP Ratings	Battery System IP54 , PCS IP54 , Control Cabinet IP54 , DC Combiner IP54
FEATURES	
Battery Monitoring System	YES – Capable through CNTE monitoring system
Fire Suppression System	Pre-integrated Fire Suppression System with smoke and heat detectors plus aerosols or NVAC1230
COMPLIANCE	
PCS Related Standards	IEC 62477, IEC 61000-6-2, IEC 61000-6-4, EN 50549, G99, AS/NZS 4777.2:2020, NRS 097-2-1:2017
Battery Related Standards	UN 38.3 , UN 3481 , IEC 62619 , IEC 61000-6-2/-4 , IEC 62477-1
DIMENSIONS & WEIGHTS	
System Dimensions (mm, W x D x H)	1500×1150×2450 for PCS, 1295×1500×2280 for each Battery Rack
Weight of Key Components (kg)	600 kg for PCS , 2500 kg per 206.9 kWh Battery Rack

TECHNICAL SOLUTION OF ESS

Commercial and Industrial (Below 1MWh)



Energy Management

Peak shaving
Monitoring and indicating status of battery and other equipment.

Easy Expansion

Modular design for easy capacity expansion.

Standard Interface

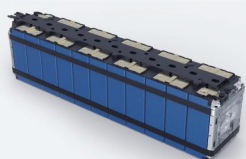
Standard interface for communication and HV connection.

High Safety

Liquid cooling system + long life time LFP cell and multiple protection.

Frequency Regulation

Fast response and high accuracy to provide regulation service for grid.



CATL-LFP-Module

Electrical Safety

Over-current / external short-circuit protection
Insulation monitoring
Equipotential bonding
Electric shock warning

Functional Protection

Overvoltage / undervoltage protection
Overtemperature / low temperature protection
Overcurrent protection
Communication abnormal protection

Chemical Safety

Flameresistant material
Safety requirements of the battery cell
Identification of hazardous substances
Prevent Battery Thermal Runaway

Mechanical Safety

Vibration resistance
Impact resistance
Explosion-proof

Material Selection

Using a 280Ah lithium iron phosphate battery with high safety and long life time.
The life cycle reaches up to **8000** times.



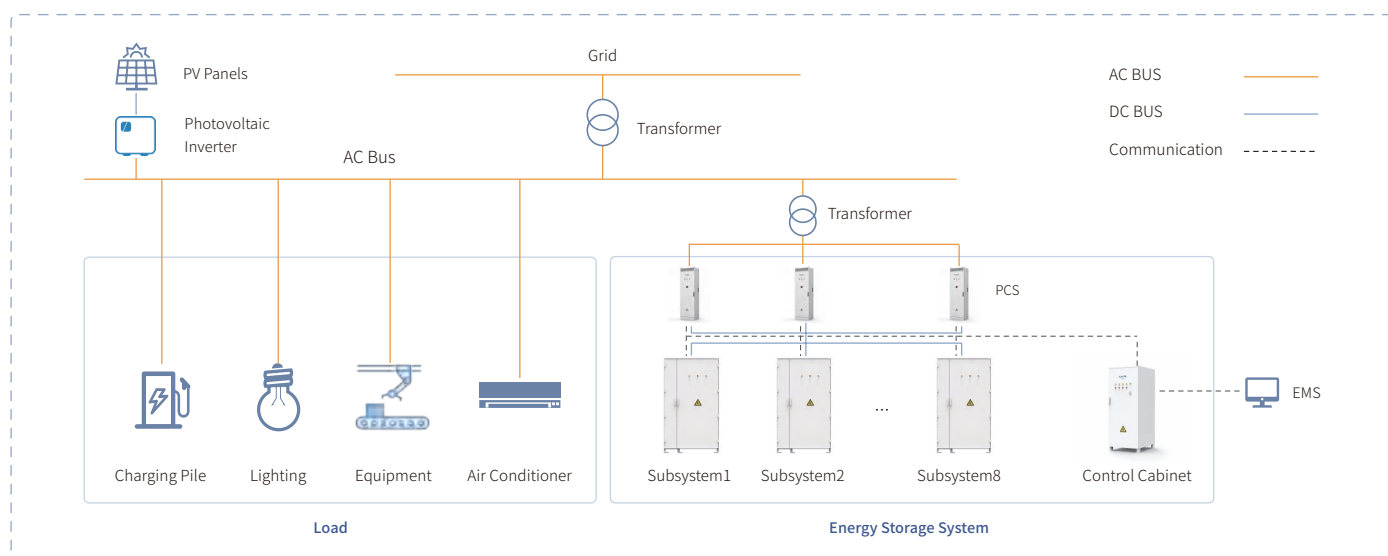
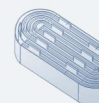
Cell Process

The electrode sheet winding process is not easy to produce burr, decarbonization and metal particles, and it has a low short circuit risk in a long-term cycle.

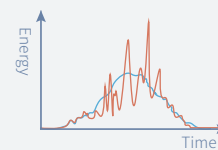
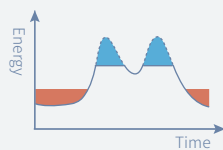
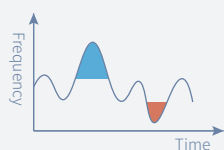


Safety Features

The results of the safety test: no fire, no explosion. The lithium iron phosphate has high thermal stability, slow heat production rate and less heat production. The lithium iron phosphate does not release oxygen under overcharge and overdischarge.



Application Scenario:





ENER One Liquid Cooling Battery Cabinet



Control Cabinet



PCS

Max. Number of Systems in Parallel	8
PCS Specifications	100kW
Rated AC Power	100 kVA / kW
Rated Grid Voltage	400 Vac
Max. Discharge / Charge Current	157A / 151A
Total Harmonic Distortion	<3%
Rated Grid Frequency (Range)	50 Hz
Peak Efficiency	98%
Power Factor	-1 to 1 , continuously adjustable
ENERGY STORAGE	
Rated Energy DC	232.96kWh*N
Voltage Range (Nominal Voltage)	728Vdc ~ 936Vdc(832Vdc)
Chemistry	LFP
ENVIRONMENTAL	
Operating Temperature Range / Humidity Range	-20~50 °C (PCS derating at 45 to 55 °C)/ 0 to 95% RH non-condensing
Altitudes	<4000m (derating >2000m)
IP Ratings	Battery System IP66 , PCS IP54 , Control Cabinet IP54 , DC Combiner IP54
FEATURES	
Battery Monitoring system	YES – Capable through CNTE monitoring system
Fire Suppression System	Pre-integrated Fire Suppression system with smoke and heat detectors plus aerosols
COMPLIANCE	
PCS Related Standards	IEC 62477-1 , EN62477-1 , IEC/EN61000-6-2 , IEC/EN 61000-6-4 IEC 60068-2-6:2007 , AS/NZS 4777.2:2020
Battery Related Standards	UN 38.3 , UN3481 , IEC 62619 , IEC 61000-6-2/-4 , IEC 62477-1 , UL 1973 , UL9540A
DIMENSIONS & WEIGHTS	
System Dimensions (mm, W x D x H)	600×500×2000 for PCS 1300 x 1300 x 2280 for each Battery Rack
Weight of Key Components (kg)	230 kg for PCS , 3500 kg per 232.96 kWh Battery Rack

TECHNICAL SOLUTION OF ESS

Commercial and Industrial (Above 1MWh)



Energy Management

Peak shaving
Monitoring and indicating status of battery and other equipment.

Easy Expansion

Modular design for easy capacity expansion.

Standard Interface

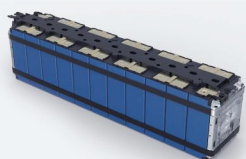
Standard interface for communication and HV connection.

High Safety

Liquid cooling system + long life time LFP cell and multiple protection.

Frequency Regulation

Fast response and high accuracy to provide regulation service for grid.



CATL-LFP-Module

Electrical Safety

Over-current / external short-circuit protection
Insulation monitoring
Equipotential bonding
Electric shock warning

Functional Protection

Overvoltage / undervoltage protection
Overtemperature / low temperature protection
Overcurrent protection
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Chemical Safety

Flameresistant material
Safety requirements of the battery cell
Identification of hazardous substances
Prevent Battery Thermal Runaway

Mechanical Safety

Vibration resistance
Impact resistance
Explosion-proof

Material Selection

Using a 280Ah lithium iron phosphate battery with high safety and long life time.
The life cycle reaches up to **8000** times.



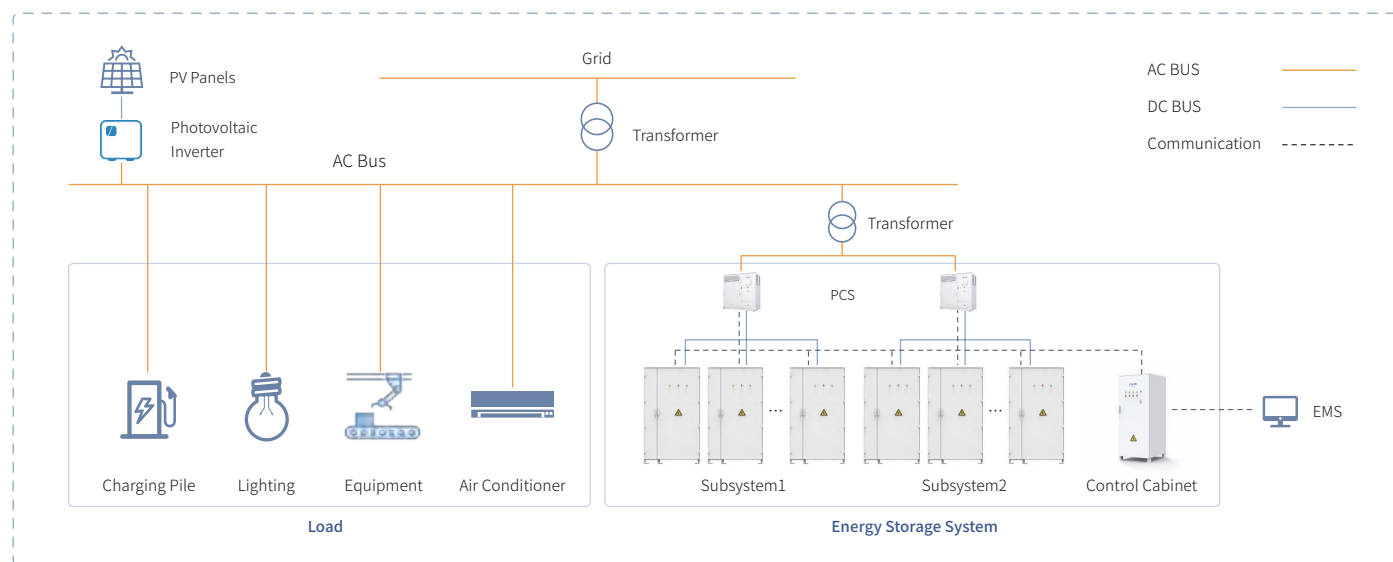
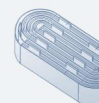
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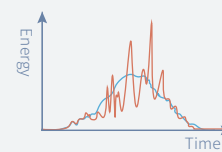
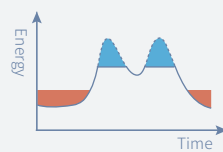
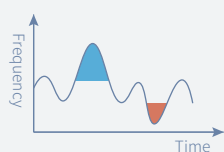


Safety Features

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Application Scenario:





ENER One Liquid Cooling Battery Cabinet



Control Cabinet



PCS

Max. Number of Systems in Parallel	2			
PCS Specifications	1000kW	1200kW	1500kW	1725kW
Rated AC Power	1000 kVA / kW	1200 kVA / kW	1500 kVA / kW	1725 kVA / kW
Rated Grid Voltage	400 Vac	480 Vac	600 Vac	690 Vac
Max. AC Current	1672A			1448A
Total Harmonic Distortion	<3%			
Rated Grid Frequency (Range)	50 Hz /60Hz			
Peak Efficiency	98%			
Power Factor	-1 to 1 , continuously adjustable			
ENERGY STORAGE				
Rated Energy DC	372.736kWh*N			
Voltage Range (Nominal Voltage)	1164.8 ~ 1497.6Vdc (1331.2Vdc)			
Chemistry	LFP			
ENVIRONMENTAL				
Operating Temperature Range / Humidity Range	-20~50 °C (PCS derating at 45 to 55 °C) / 0 to 95% RH non-condensing			
Altitudes	<4000m (derating >2000m)			
IP Ratings	Battery System IP66 , PCS IP54 , Control cabinet IP54 , DC Combiner IP54			
FEATURES				
Battery Monitoring System	YES – Capable through CNTE monitoring system			
Fire Suppression System	Pre-integrated Fire Suppression system with smoke and heat detectors plus aerosols			
COMPLIANCE				
PCS Related Standards	VDE AR-N 4110 , G99 , IEC 62477 , IEC 61000-6-2 , IEC 61000-6-4 IEEE1547:2018 , UL 1741 , UL1741 SB			
Battery Related Standards	UN 38.3 , UN3481 , IEC 62619 , IEC 61000-6-2/-4 , IEC 62477-1 , UL 1973 , UL9540A			
DIMENSIONS & WEIGHTS				
System Dimensions (mm, W x D x H)	2200 x 1100 x 2280 for PCS, 1300 x 1300 x 2280 for each Battery Rack			
Weight of Key Components (kg)	2600 kg for PCS , 3500 kg per 372.736 kWh Battery Rack			

TECHNICAL SOLUTION OF ESS

Utility-Scale (Above 10MWh)



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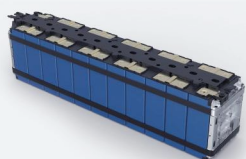
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Material Selection

Using a 280Ah lithium iron phosphate battery with high safety and long life time.
The life cycle reaches up to **8000** times.



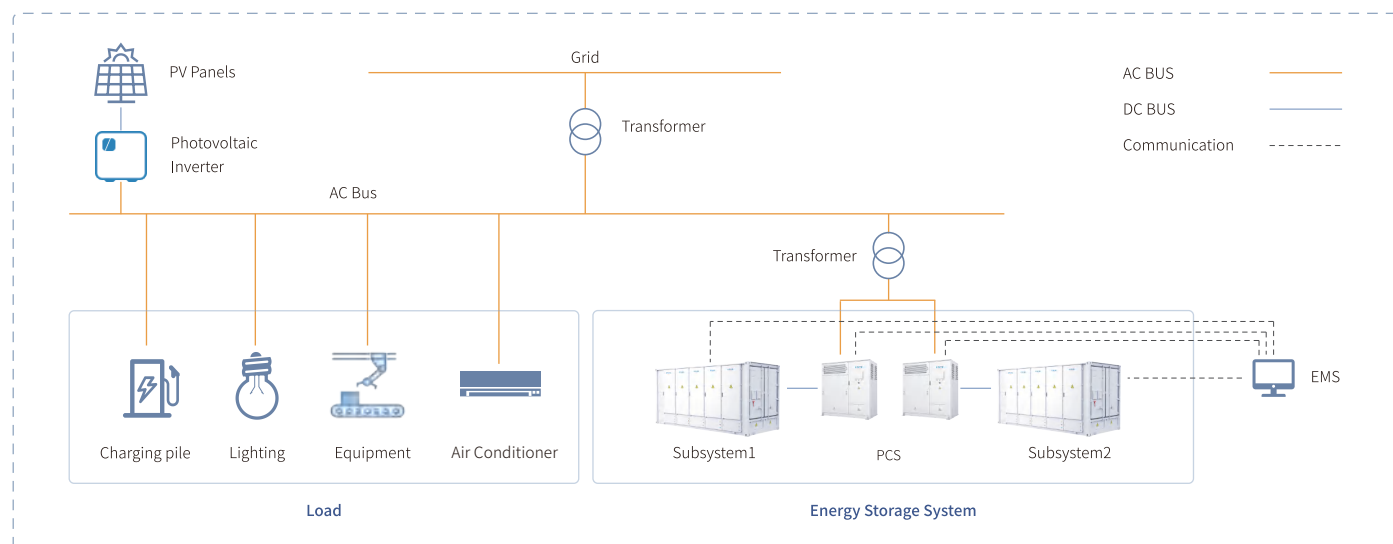
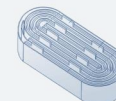
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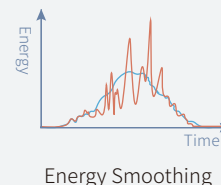
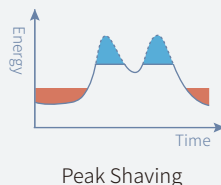
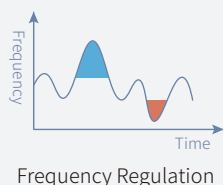


Safety Features

The results of the safety test: no fire, no explosion.
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Application Scenario:





ENER C Liquid Cooling Battery Container



PCS

Max. Number of Systems in Parallel	2			
PCS Specifications	1000kW	1200kW	1500kW	1725kW
Rated AC Power	1000 kVA / kW	1200 kVA / kW	1500 kVA / kW	1725 kVA / kW
Rated Grid Voltage	400 Vac	480 Vac	600 Vac	690 Vac
Max. AC Current	1672A			1448A
Total Harmonic Distortion	<3%			
Rated Grid Frequency (Range)	50 Hz /60Hz			
Peak Efficiency	98%			
Power Factor	-1 to 1 , continuously adjustable			
ENERGY STORAGE				
Rated Energy DC	3727.36kWh			
Voltage Range (Nominal Voltage)	1164.8 ~ 1497.6Vdc (1331.2Vdc)			
Chemistry	LFP			
ENVIRONMENTAL				
Operating Temperature Range / Humidity Range	-20~50 °C (PCS derating at 45 to 55 °C) / 0 to 95% RH non-condensing			
Altitudes	<4000m (derating >2000m)			
IP Ratings	Battery System IP55 , PCS IP54 , Control cabinet IP54			
FEATURES				
Battery Monitoring System	YES – Capable through CNTE monitoring system			
Fire Suppression System	Pre-integrated Fire Suppression system with smoke and heat detectors plus aerosols			
COMPLIANCE				
PCS Related Standards	VDE AR-N 4110, G99, IEC 62477, IEC 61000-6-2, IEC 61000-6-4 IEEE1547:2018, UL 1741, UL1741 SB			
Battery Related Standards	UN 38.3 , UN3536 , IEC 62619 , IEC 62933-5-2, IEC 63056, IEC 62477-1, UL 1973, UL9540A			
DIMENSIONS & WEIGHTS				
System Dimensions (mm, W x D x H)	2200 x 1100 x 2280 for PCS, 2462 x 6058 x 2896 for each Battery Container			
Weight of Key Components (kg)	2600 kg for PCS , 35000 kg per 3727.36 kWh Battery Container			

Legenda toegepaste uitzonderingsgrondslagen

In dit document zijn gegevens definitief geanonimiseerd op grond van:

Wet	Artikel	Omschrijving	Pagina's
Wet open overheid	Art. 5.1 lid 2 sub e	De eerbiediging van de persoonlijke levenssfeer	2, 4, 6, 8