



# Selectiva 4.0

Your charger  
for lead-acid  
batteries

# Fronius Selectiva 4.0



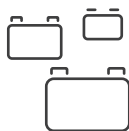
## Intelligent battery charging in intralogistics

With the Selectiva 4.0 charger family, Fronius offers one of the most efficient and advanced solutions on the market for charging lead-acid batteries. Benefit from our innovative charger technology, which not only saves costs, energy and CO<sub>2</sub>, but also offers you sustainable benefits. With the Selectiva 4.0 you are best prepared for your future challenges.



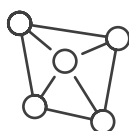
### **Convincing quality taken further**

Fronius products have an exceptionally long life expectancy and are produced by the highest quality standards. This does not only impress us, but also our customers for more than 75 years. We have taken this as an opportunity to offer our end customers an impressive 5-year product warranty.\*



### **Flexible und adaptive**

We know that your daily business can be very demanding. That's why our Selectiva 4.0 chargers are modularly designed, easy to move and can charge all common lead-acid, lead crystal and CSM batteries. Your advantage? A charger that flexibly adapts to your requirements and the different voltages and capacities of your batteries.



### **Charge & Connect**

With Selectiva 4.0, the connectivity solution Charge & Connect can be integrated in your everyday business life. Benefit from new transparency and additional optimization possibilities.



# Your benefits





## 20 years and more

With a life expectancy of up to 20 years and a quality that goes beyond industry standards, we set a new dimension of reliability.

## Reducing costs sustainably

For more than 75 years we have been offering innovative charging systems, intelligent energy management and services to support you to reduce your energy consumption, save on energy costs and lower CO2 emissions. This is what we continue to do. Ideally together with you.

## Rejuvenating your batteries

The particularly efficient and gentle Fronius Ri charging process adapts individually to the condition of the battery and thus ensures a cool charge and extended battery life.

## Digitalization

Ever thought about connecting your charging technology? Increase the transparency of your charging data and keep up-to-date about the condition of your charging infrastructure. Benefit from a new level of predictability to drive your business forward quickly and efficiently.

# We make the difference for you

With the Selectiva 4.0, you benefit from an intelligent and flexible charging technology that can be perfectly tailored to your needs, depending on the application.

We support you as independent energy expert with customized charging solutions.

We are at your service from analysis and consulting to planning and implementation.

# Ri-charging process

Cool charging  
lasts longer

## **Extended battery life**

The Ri charging process provides a cooler battery during charging, extending its life by 10-15% on average.

## **Less energy costs**

With an overall efficiency of up to 84 % from the power connection to the battery, Fronius chargers significantly reduce your power consumption by up to 30 %.

## **Different voltage classes**

The Ri charging process enables you to charge different batteries and voltage classes with one charger.

## **Actively reduce risks**

Overcharging, which leads to faster contamination of the battery and the development of dangerous oxyhydrogen gas, can be reduced with the Ri charging process.

ng

With the Ri charging process, Fronius is offering the best technology for charging lead-acid traction batteries available on the market. Unlike others, this process does not follow a fixed characteristic, but adapts individually to the requirements of each battery. This ensures maximum energy efficiency and a long battery life.

## Energy efficient and gentle on the battery

With the Ri charging process, Selectiva 4.0 battery chargers achieve an overall efficiency of up to 84 percent.

This allows to charge batteries more effectively and also reduce battery damage and maintenance.

In the case of chargers for traction batteries, 50 hertz transformer technology is still widely used. However, this causes high energy consumption and strong heating of the battery during charging, which reduces its service life. Although, the high-frequency technology is more efficient in this respect, but there are major differences, too. With the Ri charging process, Fronius offers one of the most effective and gentle technologies available on the market.

Charging technology	Device efficiency	x	Charging efficiency	=	Overall efficiency
50 Hz	80%	x	70%	=	56%
HF	90%	x	75%	=	68%
AIT	92%	x	80%	=	74%
AIT + RI	93%	x	90%	=	84%

Our charging process does not follow a fixed characteristic but adapts individually to each battery during the charging process. This ensures maximum energy efficiency and a long battery life.



Device efficiency: 93%



Charging efficiency: 90%



**Overall efficiency: 84%**

# Selectiva 4.0

One charger,  
many possibilities

The chargers of the Selectiva 4.0 product family are true all-rounders. You can flexibly charge lead-acid batteries with different voltages and capacities. Benefit from a simple operation, small space requirements and low operating costs.

## Selectiva 1kw



Type: 1kW  
Dimensions B/H/T: 247 x 162 x 88 mm  
Weight including charging and mains leads: 4 kg  
Protection class: IP40

Mains lead: 2 m  
Charging lead: 2,5 m  
Mains voltage: 1 x 230V AC  
(-15%/+15%)

Battery voltage	Device designation	Output			Mains			
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
12V	Selectiva 1020	12V	20A	1	230V	3A	0,3kW	16A
	Selectiva 1030	12V	30A	1	230V	3A	0,4kW	16A
24V	Selectiva 2010	24V	10A	1	230V	3A	0,3kW	16A
	Selectiva 2015	24V	15A	1	230V	3A	0,4kW	16A
	Selectiva 2020	24V	20A	1	230V	4A	0,7kW	16A
	Selectiva 2032	24V	32A	1	230V	8A	1,0kW	16A
	Selectiva 2040	24V	35A	1	230V	8A	1,1kW	16A

## Selectiva 4.0 2kw



Type: 2kW  
Dimensions B/H/T: 341 x 198 x 110 mm  
Weight including charging and mains leads: 6 kg  
Protection class: IP21

Mains lead: 2,5 m  
Charging lead: 3 m  
Mains voltage: 1 x 230V AC  
(-15%/+15%)

Battery voltage	Device designation	Output			Mains			
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
24V	Selectiva 4.0 2040 2kW	24V	40A	1	230V	8A	1,5kW	16A
	Selectiva 4.0 2050 2kW	24V	50A	1	230V	10A	1,9kW	16A
	Selectiva 4.0 2060 2kW	24V	60A	1	230V	12A	2,3kW	16A
	Selectiva 4.0 2070 2kW	24V	70A	1	230V	12A	2,4kW	16A
36/48V	Selectiva 4.0 4020 2kW	48V	20A	1	230V	8A	1,5kW	16A
	Selectiva 4.0 4035 2kW	48V	35A	1	230V	12A	2,3kW	16A

## Selectiva 4.0 3kw



Type: 3kW  
Dimensions B/H/T: 417 x 198 x 110 mm  
Weight including charging and mains leads: 8 kg  
Protection class: IP21

Mains lead: 2,5 m  
Charging lead: 3 m  
Mains voltage: 1 x 230V AC  
(-15%/+15%)

Battery voltage	Device designation	Output			Mains			
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
24V	Selectiva 4.0 2080 3kW	24V	80A	1	230V	15A	3,0kW	16A
	Selectiva 4.0 2100 3kW	24V	100A	1	230V	15A	3,3kW	16A
	Selectiva 4.0 2120 3kW	24V	120A	1	230V	15A	3,3kW	16A
36/48V	Selectiva 4.0 4045 3kW	48V	45A	1	230V	15A	3,3kW	16A
	Selectiva 4.0 4060 3kW	48V	60A	1	230V	15A	3,3kW	16A



## Selectiva 4.0 8kw



Type: 8kW  
 Dimensions B/H/T: 633 x 344 x 180 mm  
 Weight including charging and mains leads: 23 kg  
 Protection class: IP20

Mains lead: 3 m  
 Charging lead: 3 m  
 Mains voltage: 3 x 400V AC  
 (-10%/+30%)

Battery voltage	Device designation	Output		Mains				
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
24V	Selectiva 4.0 2100 8kW	24V	100A	3	400V	7A	3,9kW	16A
	Selectiva 4.0 2120 8kW	24V	120A	3	400V	8A	4,6kW	16A
	Selectiva 4.0 2140 8kW	24V	140A	3	400V	9A	5,4kW	16A
	Selectiva 4.0 2160 8kW	24V	160A	3	400V	10A	6,1kW	16A
	Selectiva 4.0 2180 8kW	24V	180A	3	400V	11A	6,9kW	16A
	Selectiva 4.0 2200 8kW	24V	200A	3	400V	12A	7,6kW	16A
36/48V	Selectiva 4.0 2225 8kW	24V	225A	3	400V	14A	8,6kW	16A
	Selectiva 4.0 4060 8kW	48V	60A	3	400V	7A	4,6kW	16A
	Selectiva 4.0 4075 8kW	48V	75A	3	400V	9A	5,7kW	16A
	Selectiva 4.0 4090 8kW	48V	90A	3	400V	11A	6,8kW	16A
	Selectiva 4.0 4120 8kW	48V	120A	3	400V	14A	9,1kW	16A
	Selectiva 4.0 4140 8kW	48V	140A	3	400V	14A	9,3kW	16A
72/80V	Selectiva 4.0 4160 8kW	48V	160A	3	400V	15A	9,4kW	16A
	Selectiva 4.0 4185 8kW	48V	185A	3	400V	15A	10,0kW	16A
	Selectiva 4.0 8040 8kW	80V	40A	3	400V	8A	5,0kW	16A
	Selectiva 4.0 8060 8kW	80V	60A	3	400V	12A	7,4kW	16A
	Selectiva 4.0 8075 8kW	80V	75A	3	400V	14A	9,1kW	16A
	Selectiva 4.0 8090 8kW	80V	90A	3	400V	14A	9,2kW	16A
	Selectiva 4.0 8110 8kW	80V	110A	3	400V	15A	9,7kW	16A

## Selectiva 4.0 16kw / 18kW



Type: 16kW / 18kW  
 16kW Dimensions B/H/T: 647 x 392 x 247 mm  
 18kW Dimensions B/H/T: 785 x 392 x 247 mm  
 16kW Weight including charging and mains leads: 37 kg  
 18kW Weight including charging and mains leads: 47 kg

Protection class: IP20  
 Mains lead: 3 m  
 Charging lead: 3 m  
 Mains voltage: 3 x 400V AC (-10%/+30%)  
 3 x 220V AC (-10%/+30%)

Battery voltage	Device designation	Output		Mains				
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
24V	Selectiva 4.0 2250 18kW	24V	250A	3	400V	15A	9,7kW	32A
	Selectiva 4.0 2300 18kW	24V	300A	3	400V	16A	9,9kW	32A
	Selectiva 4.0 2350 18kW	24V	350A	3	400V	16A	10,1kW	32A
36/48V	Selectiva 4.0 4120 16kW	48V	120A	3	220V	29A	9,1kW	32A
	Selectiva 4.0 4140 16kW	48V	140A	3	220V	30A	9,4kW	32A
	Selectiva 4.0 4160 16kW	48V	160A	3	220V	30A	9,5kW	32A
	Selectiva 4.0 4210 16kW	48V	210A	3	400V	28A	15,9kW	32A
	Selectiva 4.0 4250 18kW	48V	250A	3	400V	30A	18,7kW	32A
	Selectiva 4.0 4300 18kW	48V	300A	3	400V	31A	19,5kW	32A
72/80V	Selectiva 4.0 4325 18kW	48V	325A	3	400V	31A	19,6kW	32A
	Selectiva 4.0 8120 16kW	80V	120A	3	400V	24A	14,8kW	32A
	Selectiva 4.0 8140 16kW	80V	140A	3	400V	28A	17,3kW	32A
	Selectiva 4.0 8160 16kW	80V	160A	3	400V	30A	18,2kW	32A
	Selectiva 4.0 8180 16kW	80V	180A	3	400V	31A	18,3kW	32A
	Selectiva 4.0 8210 16kW	80V	210A	3	400V	31A	18,4kW	32A

## Selectiva 4.0 30kW



Type: 30kW  
 Dimensions B/H/T: 780 x 1090 x 369 mm  
 Weight including charging and mains leads: 104 kg  
 Protection class: IP20

Mains lead: 3 m  
 Charging lead: 3 m  
 Mains voltage: 3 x 400V AC  
 (-10%/+30%)

Battery voltage	Device designation	Output		Mains				
		Voltage	Current	Phases	Voltage	Current	Power	Fuse
72/80V	Selectiva 4.0 8250 30kW	80V	250A	3	400V	49A	30,5kW	63A
	Selectiva 4.0 8300 30kW	80V	300A	3	400V	52A	31,6kW	63A
	Selectiva 4.0 8375 30kW	80V	375A	3	400V	54A	32,3kW	63A

# Functions

for Selectiva battery  
charging systems

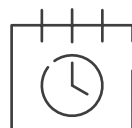
The Selectiva 4.0 product family comes with a wide range of features to help extend the life of your lead-acid batteries. The focus is on optimizing the charging process for each battery, addressing your individual needs and reducing costs at the same time.





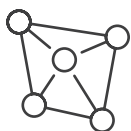
### Ri characteristic

The Ri-charging process adapts to each battery's requirements and delivers exactly the right current for optimal charging.



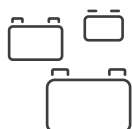
### Calendar function

Charges can be time-controlled using the calendar function. This enables the use of cheaper electricity rates and offers more flexibility.



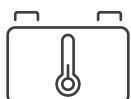
### Charge & Connect

The Selectiva 4.0 enables a connection to the Charge & Connect solution. This creates new possibilities in terms of transparency and control.



### Automatic battery voltage detection

The intelligent charger automatically detects the battery voltage as soon as it is connected.



### Visualization of the coolest battery

A blue LED indicator signals the fully charged, cooled and ready-to-use battery.



### No Monday morning syndrome

A programmable, time-controlled equalising charge ensures that your batteries are fully charged over the weekend and after public holidays.



### Opportunity charging and fast charging

You can set a special characteristic for opportunity charging and fast charging at the push of a button.



### Power peak prevention

Low power consumption and adjustable charge start reduce the required connected load and peak load.



### Deep discharge characteristic

Deep discharge characteristic can be used to fully recharge deep discharged batteries.



### Refresh characteristic

The refresh characteristic increases the performance of a weak battery.

# Options

## Additional hardware and software

The Selectiva 4.0 product line offers an extensive range of additional hardware and software for optimal use in many different areas of application.



## Options assignment

Options	1kW	2kW	3kW	8kW	16kW	18kW	30kW
Gateway Link		•	•	•	•	•	•
Gateway LAN		•	•	•	•	•	•
Gateway WLAN		•	•	•	•	•	•
Aquamatic		•	•	•	•	•	•
External start/stop	•	•	•	•	•	•	•
Remote control system (length 30m)		•	•	•	•	•	•
Relay card/option box		•	•	•	•	•	•
EUW / Air Puls			•	•	•	•	•
Cold Logistics		•	•	•	•	•	•
Power Charging		•	•	•	•	•	•
Charging status indication	•	Standard	Standard	Standard	Standard	Standard	Standard
LED strip		•	•	•	•	•	•
Floor bracket		•	•	•	•	•	Standard
Wall bracket	•	•	•	•	•	•	
Edge protection	•	•	•				
Carrying strap + carrying bar		•	•	•	•		
Common error message	•	•	•	•	•	•	•
USB interface	•	Standard	Standard	Standard	Standard	Standard	Standard
Temperature controlled charging	•	•	•	•	•	•	•
Immobilizer device	•	•	•	•	•	•	•
Air filter		•	•	•	•	•	•
IP 23				•	•	•	
Dealer text		•	•	•	•	•	•
Warranty extension +12 months	•	•	•	•	•	•	•
Warranty extension +36 months	•	•	•	•	•	•	•
Charging plug	We are pleased to offer you charging plugs on request.						
Mains and charging lead	We are happy to offer you power and charging leads in different lengths.						



### Cold Logistics

The Cold Logistics option increases the performance of the cooled battery by raising the temperature. The characteristic curve is adjusted to provide a higher amount of energy to the battery to warm it up.



### Collective error

The collective error function can be used to communicate error messages to thirdparty systems quickly and easily.



### Temperature controlled charging

The charging voltage and thus the power is adapted to the temperature of the battery. This protects the battery in the long term and increases its service life.



### External Start/Stop

If the charging lead is disconnected during charging, the external start/stop function prevents sparking.



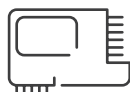
### Aquamatic control

An automatic filling system fills your battery with demineralised water during every charge. This prevents damage that can occur due to insufficient refilling.



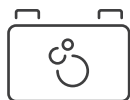
### Power Charging

With the power charging option, it is possible to increase a low lead-acid battery level in a short time by means of fast or opportunity charging.



### Relay board, Option box

Error messages and additional features such as the aquamatic control function, external air pump and refill indicator can be displayed.



### Air-Puls (ECS)

The pneumatic electrolyte circulation system (ECS) guarantees a fast and gentle charge for your traction batteries.

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### LED strip, Charging status indication

Indicates from a distance which traction battery is being charged, is already fully charged, or is cooled down and ready for use.

### Air filter

This provides effective protection against dirt for the interior of your battery charger and avoids short circuits.

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### Remote display

Ideal for controlling and monitoring battery chargers even over larger distances. The user interface can be placed up to 30 m away from the device.

### Charging plug

DIN-compliant charging plugs from REMA or Schaltbau, as well as tab connectors, are part of our standard product portfolio. Special plugs are available upon request.

# Ideal character- istics

Perfectly  
tailored to  
your  
batteries

## **PZQ/PSQ** characteristic

PzQ or PsQ batteries are often used, especially in heavy-duty applications. In order to charge these batteries optimally, our battery chargers have a specially tuned characteristic curve. This can also be combined with the Power Charging option.

## **CSM** characteristic

Forklift trucks which are equipped with the CSM battery can be charged in the best possible way using our Selectiva 4.0. With these types of battery the Power Charging option – a feature for fast charging and opportunity charging – can also be used.

## **PzS** characteristic

The PzS battery is the most widely used traction cell, thanks to its universal applicability. By means of a PzS characteristic curve, the battery can be supplied with energy in a particularly efficient and gentle way.



# Your choice

The right charger for your battery and charging time

Battery voltage	Pb-WET (PzS, GiS), Pb-CSM-WET* capacity [Ah]					Pb-GEL (PzV, GiV) capacity [Ah]		Device
	Ri, I-Puls		Ri, IUI, I-Puls			IUI		
	5 - 6	6 - 7	7 - 8	8 - 9	9 - 10	10h	12h	
12V	110	135	165	195	225	120	140	Selectiva 1020
	160	190	240	300	345	180	200	Selectiva 1030
24V	52	65	80	95	110	55	70	Selectiva 2010
	80	100	125	150	170	80	100	Selectiva 2015
	110	135	165	195	225	120	135	Selectiva 2020
	180	210	260	320	360	190	215	Selectiva 2032
	200	230	290	345	395	220	235	Selectiva 2040
	225	290	355	415	445	225	270	Selectiva 4.0 2040 2kW
	280	365	440	520	555	280	335	Selectiva 4.0 2050 2kW
	340	440	530	630	665	335	400	Selectiva 4.0 2060 2kW
	395	510	630	725	780	390	470	Selectiva 4.0 2070 2kW
	450	580	700	830	890	445	535	Selectiva 4.0 2080 3kW
	560	730	880	1020	1110	560	670	Selectiva 4.0 2100 3kW
	560	730	880	1040	1110	560	670	Selectiva 4.0 2100 8kW
	620	805	970	1145	1220	620	740	Selectiva 4.0 2120 3kW
	670	870	1060	1250	1335	670	800	Selectiva 4.0 2120 8kW
	800	1000	1250	1450	1555	780	935	Selectiva 4.0 2140 8kW
	930	1150	1420	1650	1780	890	1070	Selectiva 4.0 2160 8kW
	1010	1305	1595	1875	2000	1000	1200	Selectiva 4.0 2180 8kW
	1120	1450	1770	2080	2220	1110	1335	Selectiva 4.0 2200 8kW
	1260	1630	2000	2330	2500	1250	1500	Selectiva 4.0 2225 8kW
	1400	1810	2210	2500		1400	1670	Selectiva 4.0 2250 18kW
1680	2180	2500			1670	2000	Selectiva 4.0 2300 18kW	
1760	2260				1950	2330	Selectiva 4.0 2350 18kW	
36V / 48V	110	135	165	195	225	110	135	Selectiva 4.0 4020 2kW
	185	240	290	345	395	195	235	Selectiva 4.0 4035 2kW
	250	325	400	465	500	250	300	Selectiva 4.0 4045 3kW
	310	405	485	575	620	310	365	Selectiva 4.0 4060 3kW
	340	440	530	630	665	335	400	Selectiva 4.0 4060 8kW
	420	545	660	780	845	420	500	Selectiva 4.0 4075 8kW
	505	655	795	935	1010	500	600	Selectiva 4.0 4090 8kW
	670	870	1060	1250	1335	670	800	Selectiva 4.0 4120 8kW
	800	1000	1250	1450	1555	780	930	Selectiva 4.0 4140 8kW
	870	1105	1345	1590	1720	860	1035	Selectiva 4.0 4160 8kW
	935	1200	1470	1730	1860	1025	1230	Selectiva 4.0 4185 8kW
	1180	1530	1865	2175	2350	1170	1400	Selectiva 4.0 4210 16kW
	1400	1810	2210	2500	2500	1400	1670	Selectiva 4.0 4250 18kW
	1680	2180	2500			1670	2000	Selectiva 4.0 4300 18kW
1780	2300				1820	2160	Selectiva 4.0 4325 18kW	
80V / 72V	225	290	335	415	445	225	270	Selectiva 4.0 8040 8kW
	340	440	530	630	665	335	400	Selectiva 4.0 8060 8kW
	420	545	660	780	845	420	500	Selectiva 4.0 8075 8kW
	505	655	795	935	1010	485	580	Selectiva 4.0 8090 8kW
	560	730	880	1020	1110	560	670	Selectiva 4.0 8110 8kW
	670	870	1060	1250	1335	670	800	Selectiva 4.0 8120 16kW
	800	1000	1250	1450	1555	780	935	Selectiva 4.0 8140 16kW
	930	1150	1420	1650	1780	890	1070	Selectiva 4.0 8160 16kW
	1010	1305	1595	1875	2000	970	1170	Selectiva 4.0 8180 16kW
	1090	1380	1660	1950	2125	1170	1400	Selectiva 4.0 8210 16kW
	1400	1810	2210	2500	2500	1400	1670	Selectiva 4.0 8250 30kW
	1680	2180	2500			1670	2000	Selectiva 4.0 8300 30kW
	2125	2500				2080	2500	Selectiva 4.0 8375 30kW

Charging times are valid for normal usage (Pb-WET, Pb-CSM-WET: DoD 70%)

\*CSM batteries can only be charged with the IUI characteristic.



# Thinking Beyond Charging

## Complete solutions

We offer a comprehensive portfolio for your charging infrastructure - from useful charging and safety modules to intelligent information and management systems - tailored to your requirements.

## Charge & Connect

Fronius Charge & Connect offers a variety of new opportunities to increase the efficiency and performance of your charging infrastructure. All charging data, such as charging states and processes, are transmitted and visualized in real time. The resulting transparency offers new potential and optimization possibilities to operate a cost-efficient overall system.

## Sustainable charging solutions

As environmental regulations and laws are becoming stricter, sustainable technologies are increasingly in demand - especially for energy supply. We support you in getting your company fit for the future: Through a switch to electrified industrial trucks, the use of efficient charging devices or the combination of battery charging technology and photovoltaics.

## Further information:

[www.fronius.com/ri-charging-process](http://www.fronius.com/ri-charging-process)

[www.fronius.com/intralogistics](http://www.fronius.com/intralogistics)

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