

Delta Service Software DSS

New design for more flexibility

V6.0





Firmware Update Preparation

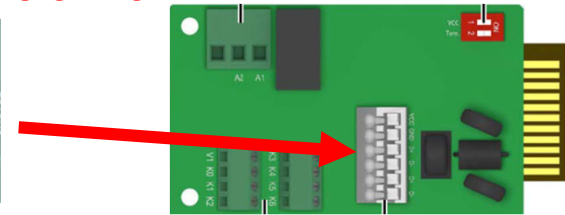
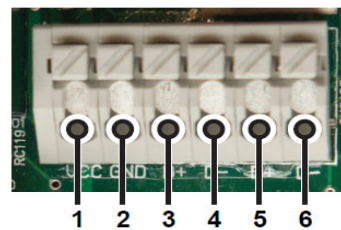
Vorbereitung

1. Connect the RS485 data line of the inverter to adapter.

Please separate the existing monitoring system.

RS485 Datenleitung der Wechselrichter mit dem Adapter verbinden.

Das bestehende Monitoring System bitte trennen.



WR RS 485 connection 3 or 5 to RS 485 adapter connection A/D +
WR RS485 Connection 4 or 6 to RS 485 Adapter connection B/D-

2. Connect USB / RS485 adapter to computer and detect occupied COM port.

USB/RS485 Adapter mit dem Computer verbinden und belegten COM Port ermitteln

Windows 10

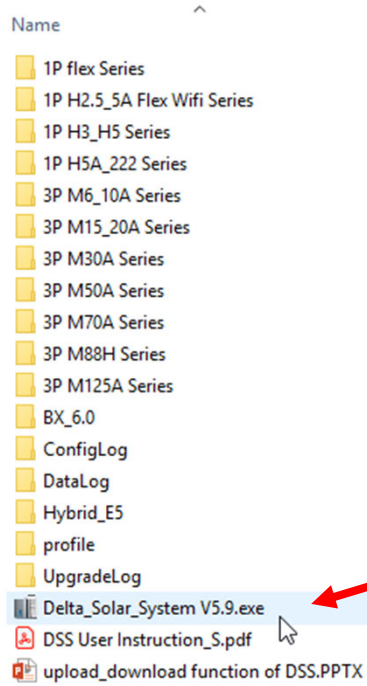


Bluetooth & other devices

B-SERIAL CH340 (COM8)

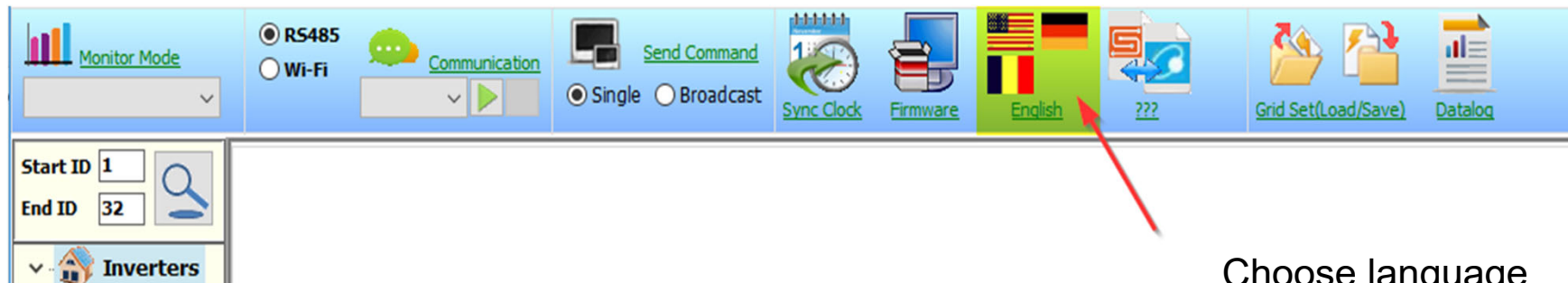


Start DSS-Software



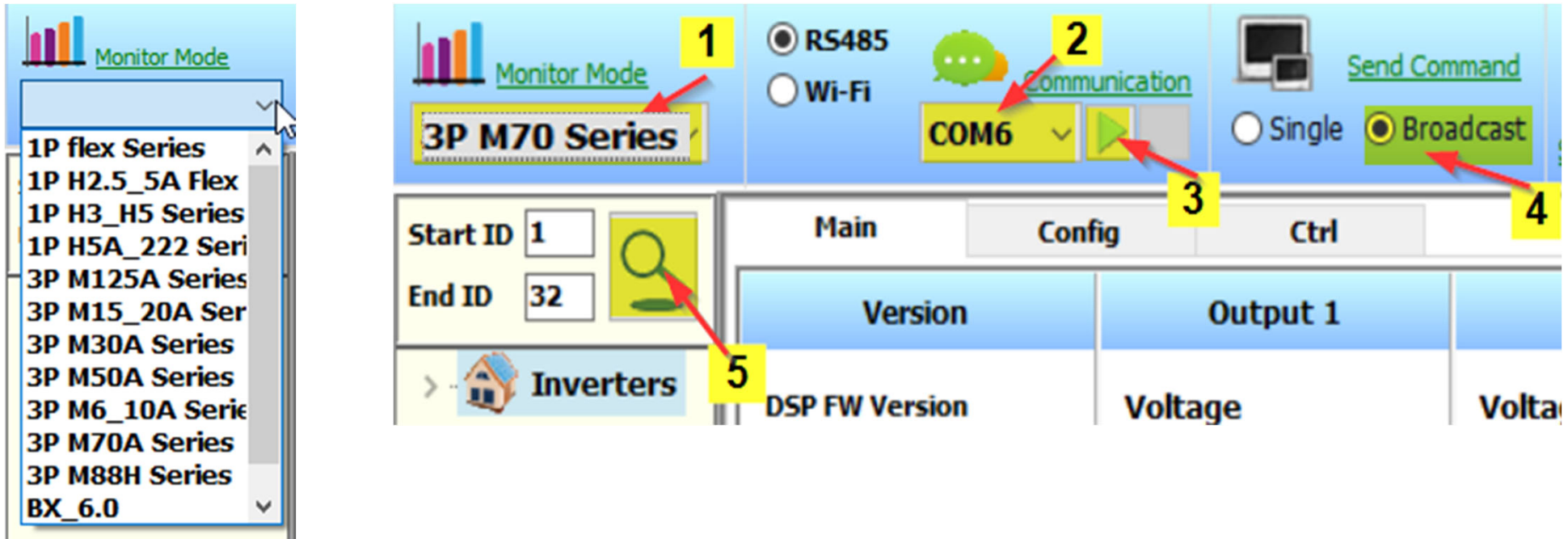
.exe double click

.exe doppelklicken



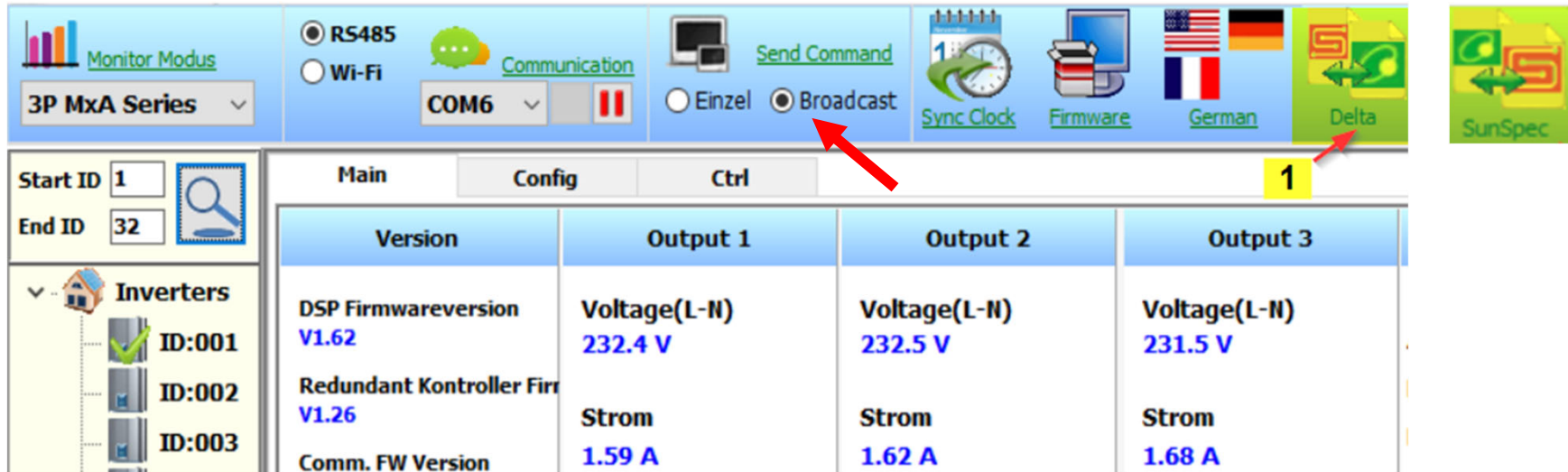
Choose language

Sprache auswählen



Please follow steps 1 to 5

- 1 Select inverter type Wechselrichtertyp auswählen
- 2 Select the occupied COM port of the RS485 / USB adapter
Belegter COM Port des RS485/USB Adapter auswählen
- 3, 4 and 5 Activate button! After the search, all Inverter are displayed
Nach dem Suchlauf werden alle WR angezeigt



Version	Output 1	Output 2	Output 3
DSP Firmwareversion V1.62	Voltage(L-N) 232.4 V	Voltage(L-N) 232.5 V	Voltage(L-N) 231.5 V
Redundant Kontroller Firt V1.26	Strom 1.59 A	Strom 1.62 A	Strom 1.68 A
Comm. FW Version			

1. To use the service software, the **Delta Protocol** must be selected.
Please set the protocol used for the monitoring here after the update.
*Für die Verwendung der Service Software muss das **Delta Protokoll** ausgewählt werden.
Bitte nach dem Update das ursprüngliche für das Anlagen Monitoring verwendete
Protokoll hier einstellen.*

When "**Broadcast**" is selected, all inverters (IDs) execute the commands in parallel.
*Wenn „**Broadcast**“ ausgewählt wird, führen alle Wechselrichter (ID's) die Befehle parallel aus*



DSS-Software „Main“

Monitor Mode

3P M70A Series

☒ RS485
☐ Wi-Fi

Communication

Send Command

☒ Single
☐ Broadcast

Sync Clock

Firmware

English

Delta

Grid Set(Load/Save)

Datalog

Start ID 1

End ID 5

Inverters

ID:001

Main

Config

Ctrl

Version	Output 1	Output 2	Output 3	Temperature 1	Max Input Value	String Current
DSP FW Version V1.18	Voltage(L-N) 0.0 V	Voltage(L-N) 0.0 V	Voltage(L-N) 0.0 V	Now Max Ambient 0 °C 50 °C	Vdc1: 360.7 V Vdc2: 616.4 V	1: 0.00 A 2: 0.00 A
Redundant FW Version V1.07	Current 0.00 A	Current 0.00 A	Current 0.00 A	Boost-1 0 °C 47 °C	Idc1: 3.72 A Idc2: 26.25 A	3: 0.00 A 4: 0.00 A
Comm. FW Version V1.20	Power 0 W	Power 0 W	Power 0 W	Boost-2 0 °C 0 °C	Pdc1: 1010 W Pdc2: 10280 W	5: 0.00 A 6: 0.00 A
ARC FW Version V1.12	Freq. 0.00 Hz	Freq. 0.00 Hz	Freq. 0.00 Hz	Inverter-S 0 °C 47 °C	Vdc3: 360.6 V Vdc4: 200.3 V	7: 0.00 A 8: 0.00 A
					Idc3: 4.91 A Idc4: 0.00 A	9: 0.00 A 10: 0.00 A
					Pdc3: 1010 W Pdc4: 0 W	11: 0.00 A 12: 0.00 A
					Vdc5: 614.4 V Vdc6: 200.5 V	13: 0.00 A 14: 0.00 A
					Idc5: 26.15 A Idc6: 0.07 A	15: 0.00 A 16: 0.00 A
					Pdc5: 10280 W Pdc6: 10 W	17: 0.00 A 18: 0.00 A
					Vdc7: 0.0 V Vdc8: 0.0 V	19: 0.00 A 20: 0.00 A
					Idc7: 0.00 A Idc8: 0.00 A	21: 0.00 A 22: 0.00 A
					Pdc7: 0 W Pdc8: 0 W	23: 0.00 A 24: 0.00 A
Serial Number 08X19900075WA	Input 1	Input 2	Inverter Time	Output Energy		
Model Name M70A_260	Voltage 0.0 V	Voltage 0.0 V	Clock 2020/09/01 11:43:36	Today Wh 0.000 KWh		
	Current 0.00 A	Current 0.00 A	Installation 2020/06/15	Runtime 0:0:0		
	Power 0 W	Power 0 W		Life Wh 19.100 KWh		
				Lifetime 28:17:15		
Status	Input 3	Input 4		Bus Voltage		
Remote <input checked="" type="radio"/> ON <input type="radio"/> OFF	Voltage 0.0 V	Voltage 0.0 V		PBus 0.0 V		
State No Dc(3)	Current 0.00 A	Current 0.00 A		NBus 0.0 V		
Countdown 0 s	Power 0 W	Power 0 W				
Max Power 77,000 W						
Grid unlock						

Max Output Value

Vac1: 237.3 V
Iac1: 15.24 A
Pac1: 3400 W
Fac1: 50.04 Hz
Vac2: 238.0 V
Iac2: 14.93 A
Pac2: 3360 W
Fac2: 50.04 Hz

DC1/2 Enable (M88H)



DSS-Software „Main“

Monitor Mode

3P M70A Series

☒ RS485
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Communication

COM6

☒ Single
☐ Broadcast

Send Command

Sync Clock

Firmware

English

Delta

Grid Set(Load/Save)

Datalog

Start ID 1
End ID 5

Inverters
ID:001

Main

Config

Ctrl

Output 3

Temperature 1

Max Input Value

String Current

Error Event

ge(L-N)

ent

A

er

Hz

Inverter Time

09/01 11:51:22

ation

06/15

Now Max

Ambient 0 °C 50 °C

Boost-1 0 °C 47 °C

Boost-2 0 °C 0 °C

Inverter-S 0 °C 47 °C

Output Energy

Today

Wh 0.000 KWh

Runtime 0:0:0

Life

Wh 19.100 KWh

Lifetime 28:17:15

Bus Voltage

PBus 0.0 V

NBus 0.0 V

Vdc1: 360.7 V

Vdc2: 616.4 V

Idc1: 3.72 A

Idc2: 26.25 A

Pdc1: 1010 W

Pdc2: 10280 W

Vdc3: 360.6 V

Vdc4: 200.3 V

Idc3: 4.91 A

Idc4: 0.00 A

Pdc3: 1010 W

Pdc4: 0 W

Vdc5: 614.4 V

Vdc6: 200.5 V

Idc5: 26.15 A

Idc6: 0.07 A

Pdc5: 10280 W

Pdc6: 10 W

Vdc7: 0.0 V

Vdc8: 0.0 V

Idc7: 0.00 A

Idc8: 0.00 A

Pdc7: 0 W

Pdc8: 0 W

Max Output Value

Vac1: 237.3 V

Iac1: 15.24 A

Pac1: 3400 W

Fac1: 50.04 Hz

Vac2: 238.0 V

Iac2: 14.93 A

Pac2: 3360 W

Fac2: 50.04 Hz

1: 0.00 A

2: 0.00 A

3: 0.00 A

4: 0.00 A

5: 0.00 A

6: 0.00 A

7: 0.00 A

8: 0.00 A

9: 0.00 A

10: 0.00 A

11: 0.00 A

12: 0.00 A

13: 0.00 A

14: 0.00 A

15: 0.00 A

16: 0.00 A

17: 0.00 A

18: 0.00 A

19: 0.00 A

20: 0.00 A

21: 0.00 A

22: 0.00 A

23: 0.00 A

24: 0.00 A

DC1/2 Enable (M88H)

Time

Code

00. 2020/09/01 05:04:09 E09- No Grid

01. 2020/08/31 15:55:24 E09- No Grid

02. 2020/08/26 12:32:02 E09- No Grid

03. 2020/08/20 04:28:20 E09- No Grid

04. 2020/08/19 13:38:47 E09- No Grid

05. 2020/06/24 13:46:53 E02- AC Freq Low

06. 2020/06/23 09:10:20 F24-Ground Cur. High

07. 2020/06/08 11:15:54 E11- AC Volt High

08.

09.

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.



DSS-Software „Main“

Monitor Mode

3P M70A Series

☒ RS485
☐ Wi-Fi

Communication

COM6

Send Command

☒ Single
☐ Broadcast

Sync Clock

Firmware

English

Delta

Grid Set(Load/Save)

Datalog

Start ID 1
End ID 5

Inverters
ID:001

Main

Config

Ctrl

Derating Records for OPV		Derating Records for OPV_Lo		Derating Records for PM		Derating Records for Ramp Up	
Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time
01.		01.		01.		01. 2020/08/26 12:57:52	92 sec
02.		02.		02.		02. 2020/08/26 12:47:02	17 sec
03.		03.		03.		03. 2020/08/26 12:24:39	17 sec
04.		04.		04.		04. 2020/08/26 10:00:46	17 sec
05.		05.		05.		05. 2020/08/26 09:25:01	17 sec
06.		06.		06.		06. 2020/07/04 10:22:13	17 sec
07.		07.		07.		07. 2019/12/23 06:06:52	14 sec
08.		08.		08.		08. 2019/12/23 00:14:16	14 sec
09.		09.		09.		09. 2019/12/23 13:55:11	13 sec
10.		10.		10.		10. 2019/12/23 12:31:03	14 sec
11.		11.		11.		11. 2019/12/23 10:19:50	14 sec
12.		12.		12.		12. 2020/06/15 05:51:45	13 sec

Derating Records for Vin		Derating Records for Thermal		Derating Records for PF		Derating Records for Others	
Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time
01. 2020/08/26 13:31:05	8 sec	01.		01.		01. 2020/08/26 13:16:50	858 sec
02. 2020/08/26 12:52:07	21 sec	02.		02.		02. 2020/08/26 12:57:52	76 sec
03. 2020/08/26 12:26:19	600 sec	03.		03.		03. 2020/08/26 12:52:07	21 sec
04. 2020/08/26 10:03:33	1161 sec	04.		04.		04. 2020/08/26 12:26:19	600 sec
05. 2020/08/26 09:43:14	9 sec	05.		05.		05. 2020/08/26 10:03:33	1161 sec
06. 2020/07/04 11:56:32	6841 sec	06.		06.		06. 2020/07/07 08:13:38	9 sec



DSS-Software „Config“

Monitor Mode
3P M70A Series

RS485
Wi-Fi
Communication
COM6

Send Command
Single Broadcast

Sync Clock
Firmware
English
Delta

Grid Set (Load/Save)
Datalog

Start ID 1
End ID 5

Inverters
ID:001

Main **Config** Ctrl

For this settings you need a password that you ask here.
Delta Support Hotline +497641 455 549
E-mail: support@solar-inverter.com

*Für diese Einstellungen benötigen Sie ein Passwort, dass Sie bitte hier erfragen.
Delta Support Hotline 0800 8009323
E-Mail: support@solar-inverter.com*

Input Password Please

Password

OK Cancel



DSS-Software „Config“

Monitor Mode

3P M70A Series

☒ RS485
☐ Wi-Fi

Communication

COM6

Send Command

☒ Single
☐ Broadcast

Sync Clock

Firmware

English

Delta

Grid Set(Load/Save)

Datalog

Start ID 1

End ID 5

Inverters

ID:001

Main

Config

Ctrl

Country Set

Country DE_400V_4105_18

Language English

Reclosure Time 60.00 sec

Inverter ID 1

RS485 Baud rate 19200

Insulation

CTRL: ☒ ON ☐ OFF

R Limit 250

R_Leakage(kohm)

	Now	Max	Min
R1	0	0	0
R2	0	0	0

DC Injection

CTRL: ☒ ON ☐ OFF

Amp 1.00 A

Time

Uac Protection

U High Off: 287.5 V

U High Off Time: 0.20 Sec

U High On: 253.0 V

U High Off Slow: 253.0 V

U High Off Slow Time: 600.00 Sec

U High On Slow: 248.0 V

U Low Off: 103.5 V

U Low Off Time: 0.30 Sec

U Low On: 195.5 V

U Low Off Slow: 184.0 V

U Low Off Slow Time: 3.00 Sec

U Low On Slow: 195.5 V

Freq. Protection

F High Off: 51.50 Hz

F High Off Time: 0.20 Sec

F High On: 50.10 Hz

F High Off Slow: 51.50 Hz

F High Off Slow Time: 0.20 Sec

F High On Slow: 50.10 Hz

F Low Off: 47.50 Hz

F Low Off Time: 0.20 Sec

F Low On: 47.55 Hz

F Low Off Slow: 47.50 Hz

F Low Off Slow Time: 0.20 Sec

F Low On Slow: 47.55 Hz

Comm Protection

Mode ☐ ON ☒ OFF

Disconnection time 300 Sec

AC Terminal

Type ☒ 3P4W ☐ 3P3W



DSS-Software „Ctrl“

Monitor Mode
3P M70A Series

RS485
Wi-Fi
Communication
COM6

Send Command
Single Broadcast

Sync Clock
Firmware
English
Delta

Grid Set(Load/Save)
Datalog

Start ID 1
End ID 5

Main Config **Ctrl**

Inverters
ID:001

Active Power
Disable
PM (%) 100 %
Ramp Up Power(%) 10 %
Active Power Slope 200 sec

Reactive Power
Mode Disable
Night Mode Disable
Fixed cosφ 1
Fixed Q (%) Cap 0%
Response Time 10.00 sec

Q(U) Ctrl
Q_Vmax Ind 33%
Q_Vmin Cap 33%
Vmax 239.2 V
Vmin 220.8 V
Upper(V2) 230.0 V
Lower(V1) 230.0 V
Q2 0
Q3 0
Lock-in Power 0 %
Lock-out Power 0 %
Hysteresis 0.0 V

P(U) Function
Mode: Disable
Recovery Time(s) 300 sec
P Lock-in(%) 20 %
Lower Power(%) 5 %
V Lock-in(Vac) 253.0 V
V Lock-out(Vac) 248.4 V
Start Voltage 253.0 V
Stop Voltage 253.0 V
Pend 5 %
V recover 248.4 V

Q by Night
Const.Q_Percent 0 %
Q(U)_Upper_Limit -44 %
Q(U)_Lower_Limit 44 %
Q(U)_Vmin(V2i) 184.0V
Q(U)_Vmax(V2s) 253.0V
Q(U)_V1(V1i) 230.0V
Q(U)_V2(V1s) 230.0V
Q(U)_P_Lock_in 0 %
Q(U)_P_Lock_out 0 %
Q(U)_Hysteresis 0.0V
Response_Delay 0.00 sec

P-F Control
Frequency
Limit via Current Power
Gradient (%) 40 %

cos(φ) of P Ctrl
Upper Cap 0.95
Lower Ind 0.95

FRT
Dead Band Umin 90 %
Dead Band Umax 110 %
K Factor

Fan Test
Mode ON OFF
Duty

Fan Fail
Internal

Reactive Power
Disable
Constant cos(φ)
cos(φ) of P Control
Constant Q
Q(U) Control
Q(U) CEI021 B
Q(U) Class B
Q(U) Class C
Voltage suppression
Cosphi(U)
Reserved
Reserved
Reserved
Fixed Kvar 24/7
Q(U) 24/7



DSS-Software „Ctrl“

Monitor Mode

3P M70A Series

☒ RS485
☐ Wi-Fi

Communication

Send Command

Sync Clock

Firmware

English

Delta

Grid Set(Load/Save)

Datalog

COM6

Single

Broadcast

Start ID 1

End ID 5

Inverters ID:001

Main

Config

Ctrl

Ctrl

Vmin Cap 33%

nd

min

20.8 V

power(V1)

30.0 V

3

lock-out Power

%

P(U) Function

Mode: Disable

Recovery Time(s) 300 sec

P Lock-in(%) 20 %

Lower Power(%) 5 %

V Lock-in(Vac) 253.0 V

V Lock-out(Vac) 248.4 V

Start Voltage 253.0 V

Stop Voltage 253.0 V

Pend 5 %

V recover 248.4 V

Q by Night

Const.Q_Percent 0 %

Q(U)_Upper_Limit -44 %

Q(U)_Lower_Limit 44 %

Q(U)_Vmin(V2i) 184.0V

Q(U)_Vmax(V2s) 253.0V

Q(U)_V1(V1i) 230.0V

Q(U)_V2(V1s) 230.0V

Q(U)_P_Lock_in 0 %

Q(U)_P_Lock_out 0 %

Q(U)_Hysteresis 0.0V

Response_Delay 0.00 sec

Q(P) for Q by night & Q 24/7

Mode Rated

No of Set Point 5

P0	10.0%		Q0	Cap 0	Ind	
P1	50.0%		Q1	Cap 0	Ind	
P2	60.0%		Q2	Ind 5.0%	Ind	
P3	90.0%		Q3	Ind 33.0%	Ind	
P4	100.0%		Q4	Ind 33.0%	Ind	
P5	100.0%		Q5	Ind 33.0%	Ind	
P6	100.0%		Q6	Ind 33.0%	Ind	
P7	100.0%		Q7	Ind 33.0%	Ind	
P8	100.0%		Q8	Ind 33.0%	Ind	
P9	100.0%		Q9	Ind 33.0%	Ind	

Ctrl

FRT

Fan Test

Fan Fail

Ind 0.95

Dead Band Umin 90 %

Dead Band Umax 110 %

K Factor

Mode ☐ ON ☒ OFF

Duty

Internal



DSS-Software „Ctrl“

Monitor Mode

3P M70A Series

RS485

Wi-Fi

Communication

Send Command

Single

Broadcast

Sync Clock

Firmware

English

???

Grid Set(Load/Save)

Datalog

Start ID 1

End ID 5

Inverters

ID:005

Main

Config

Ctrl

Active Power

Mode ??

PM (%)

Ramp Up Power(%)

Active Power Slope

Reactive Power

Mode ??

Night Mode ??

Fixed cosφ

Fixed Q (%)

Response Time

Q(U) Ctrl

Q_Vmax ?? %

Q_Vmin ?? %

Vmax

Vmin

Upper(V2)

Lower(V1)

Q2

Q3

Lock-in Power

Lock-out Power

Hysteresis

P(U) Function

Mode: ???

Recovery Time(s)

P Lock-in(%)

Lower Power(%)

V Lock-in(Vac)

V Lock-out(Vac)

Start Voltage

Stop Voltage

Pend

V recover

P-F Control

Over Frequency

Mode ??

Gradient (%)

Freq. Start

Freq. Stop

F Recovery

Response Time

Under Frequency

Mode ???

Gradient (%)

Freq. Start

F Recovery

cos(φ) of P Ctrl

Upper ??

Lower ??

Upper(P1)

Lower(P2)

V Lock in

V Lock out

FRT

Dead Band Umin

Dead Band Umax

K Factor

LVRT_Mode

Mode

T1 Time

T2 Time

T3 Time

Uac Fault(Vdrop)

U1

HVRT_Mode

Mode



DSS-Software „Ctrl“

Monitor Mode
3P M70A Series

RS485

Wi-Fi

Communication

Send Command

Single

Broadcast

Sync Clock

Firmware

English

???

Grid Set(Load/Save)

Datalog

Start ID 1
End ID 5

Main

Config

Ctrl

Inverters

ID:005

Active Power

Reactive Power

Q(U) Ctrl

P(U) Function

Q by Night

Q(P) for Q by night & Q 24/7

P-F Control

cos(φ) of P Ctrl

FRT

Fan Test

Fan Fail

Multi-function Relay

Multi-function Relay

Relay 1 Relay 1

0: Disable

Fault/Error/Warning

Fault/Error/warning 1: 0

Fault/Error/warning 2: 0

Fault/Error/warning 3: 0

☐ All Error ☐ All Fault ☐ All Warning

Power Production

0: Disable

External load control

Output Power: 2.00 KW

ON Delay time: 1 min

OFF Delay time: 1 min

Control external Fans

Temperature 1: 40.0 °XC

- 0 : Disable
- 1 : Fault/Error/warning(only 3)
- 2 : Power production
- 3 : External load control
- 4 : Control external Fans



Start Firmware Update

Start the update program by clicking on Button "Firmware"

Das Update Programm wird gestartet durch klicken auf das „Firmware“ Symbol

Monitor Mode
3P MxA Series

Communication
☒ RS485
☐ Wi-Fi
COM6

Send Command
☐ Single
☒ Broadcast

Sync Clock

Firmware (indicated by a red arrow)

Language
English

Start ID 1
End ID 32

Inverters
ID:001
ID:002
ID:003
ID:004
ID:005
ID:006
ID:008

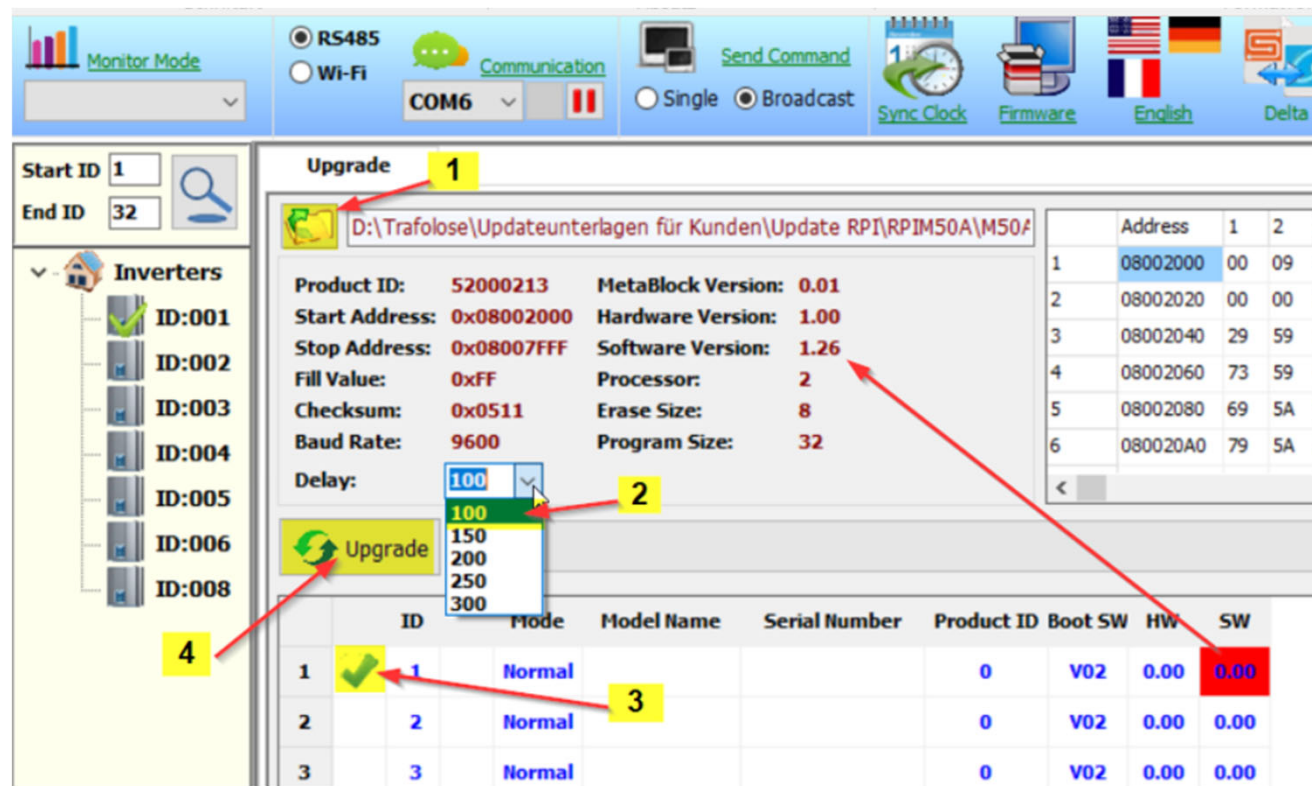
Main **Config** **Ctrl** **Firmwareupdate**

Version	Output 1	Output 2	Output 3
DSP FW Version V1.62	Voltage(L-N) 231.5 V	Voltage(L-N) 232.0 V	Voltage(L-N) 231.1 V
Redundant FW Version V1.26	Current 2.01 A	Current 2.10 A	Current 2.09 A
Comm. FW Version V1.43	Power 374 W	Power 378 W	Power 396 W
ARC FW Version *	Freq. 49.99 Hz	Freq. 49.99 Hz	Freq. 49.99 Hz
SCM FW Version *			
Serial Number 01N15A02871WM			
Model Name RPI-M50A			

Input 1		Input 2		Inverter Time	
Voltage	483.2 V	Voltage	483.4 V	Year	2019
Current	2.74 A	Current	0.01 A	Month	2
Power	1331 W	Power	5 W	Day	1




Total Power	
Input	2.75A 1336W
Output	6.20A 1148W

Status
Remote CTRL ☒ ON
☐ OFF
State On Grid(2)
Countdown 0 s
Max Power 55,000 W

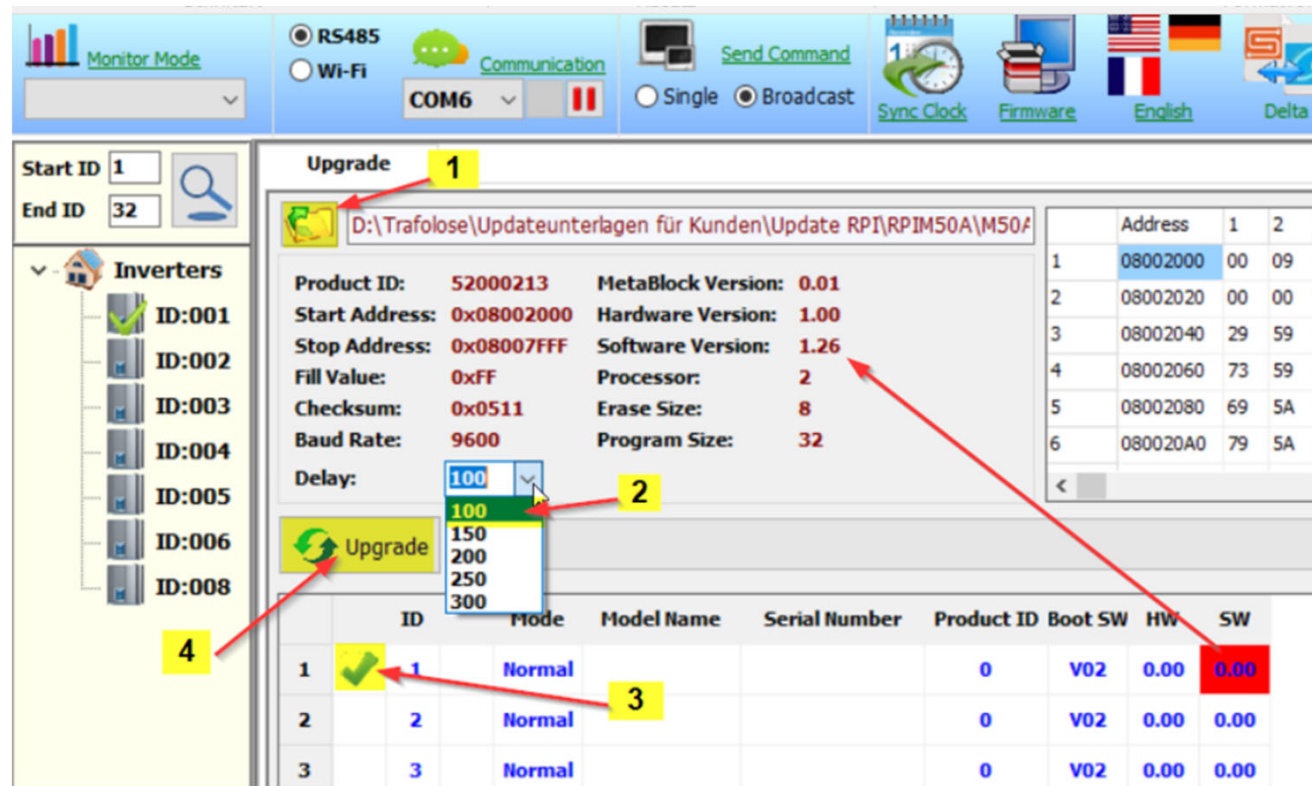


Please do steps 1 to 4

1. Download the RED, COMM, and DSP software that you received from Delta Service one after the other here.
2. Select delay time 100 here
3. Select inverter
4. Start the upgrade


 M50A_12S_COMM_V0143_M1.hex
 M50A_DSP_V0162_D1832_WIFIB3.HEX
 M50A_RED_V0126_D1743_WIFIB4.HEX

deutsch nächste Seite →



Bitte Schritte 1 bis 4 durchführen

1. Die RED-, COMM-, und DSP Software, die Sie von Delta Service erhalten haben nacheinander hier laden.
2. Hier Verzögerungszeit 100 auswählen
3. Wechselrichter wählen
4. Upgrade starten

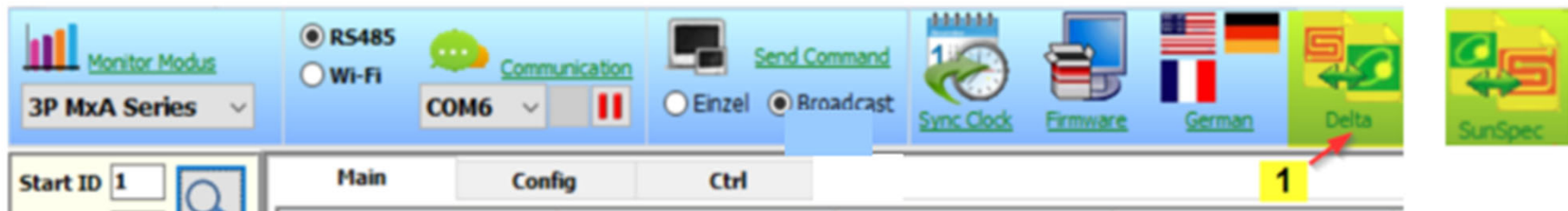
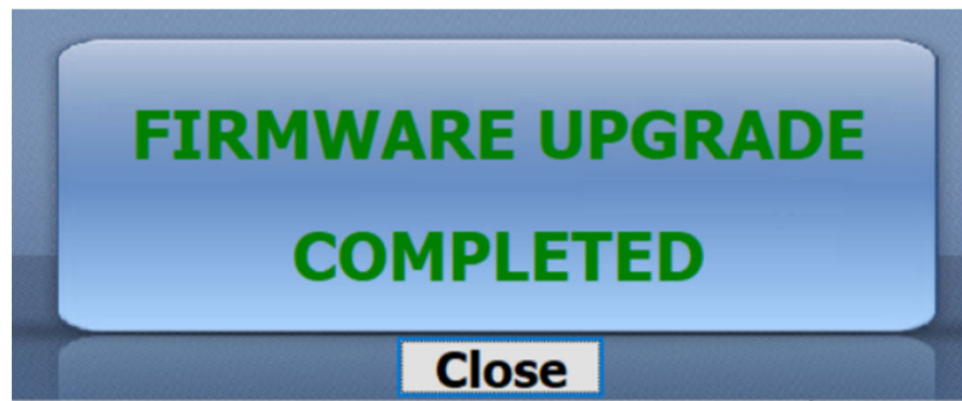
 M50A_12S_COMM_V0143_M1.hex

 M50A_DSP_V0162_D1832_WIFIB3.HEX

 M50A_RED_V0126_D1743_WIFIB4.HEX

After a successful update, you will receive this message

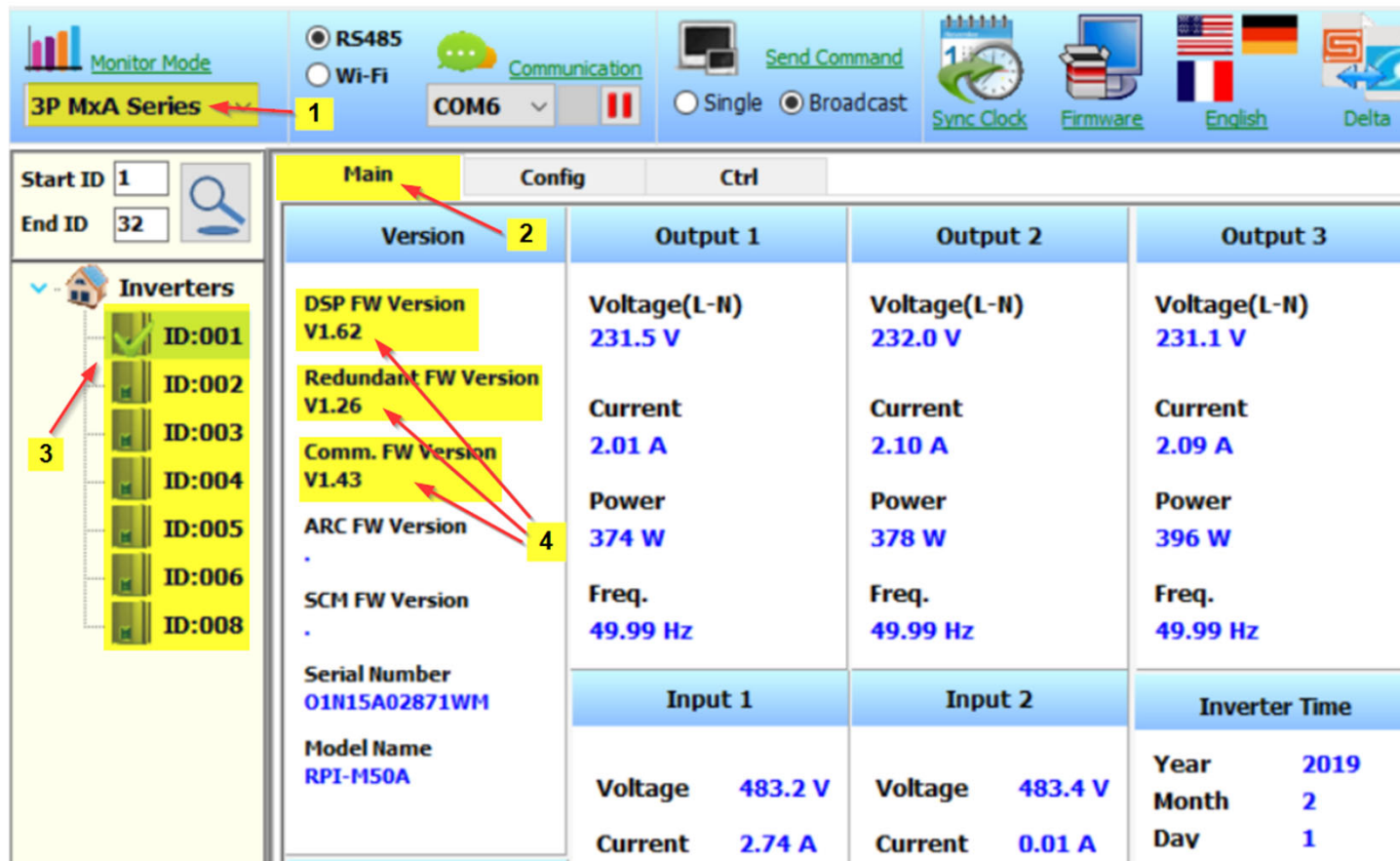
Nach erfolgreichem Update sehen Sie diese Meldung



If "SunSpec" is used for plant monitoring, please switch here.

Wenn das „SunSpec“ Protokoll für das Anlagen Monitoring verwendet wird, bitte hier umstellen.

Firmware update successful?



3P MxA Series 1

Start ID 1 End ID 32

Inverters

3

4

Version	Output 1	Output 2	Output 3
DSP FW Version V1.62	Voltage(L-N) 231.5 V	Voltage(L-N) 232.0 V	Voltage(L-N) 231.1 V
Redundant FW Version V1.26	Current 2.01 A	Current 2.10 A	Current 2.09 A
Comm. FW Version V1.43	Power 374 W	Power 378 W	Power 396 W
ARC FW Version	Freq. 49.99 Hz	Freq. 49.99 Hz	Freq. 49.99 Hz
SCM FW Version			
Serial Number 01N15A02871WM			
Model Name RPI-M50A			
	Input 1	Input 2	Inverter Time
	Voltage 483.2 V	Voltage 483.4 V	Year 2019
	Current 2.74 A	Current 0.01 A	Month 2
			Day 1

Please check the new updated software versions(4) for each ID(3) (steps 1 to 4)
 Bitte für jede ID(3) die aktualisierten Softwarestände(4) kontrollieren (Schritte 1 bis 4)

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