

# GrowSphere<sup>TM</sup> MAX

## Irrigation & Fertigation Controller

## **Quick Start Guide**

► NETAFIM<sup>™</sup> DIGITAL FARMING





Thank you for purchasing the **Grow**Sphere<sup>™</sup> **MAX** Controller, an intuitive and simple-to-use device designed to speak the language of growers.

**Grow**Sphere<sup>™</sup> **MAX** regulates water and fertilizer delivery in a precision irrigation system, activating local and remote devices such as pumps, valves, filters, dosing pumps and other hydraulic components. This ensures that crops receive the optimal amount of water and nutrients at all times.

This GrowSphere<sup>™</sup> MAX quick guide contains basic setup instructions and wiring diagrams for your convenience.

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#### /GrowSphere<sup>™</sup> MAX - Internal Design



Switches the main power on and off
Enable connecting the peripheral components

<sup>3</sup> You can find the connector in the accessories box

\* Subject to product configuration



#### Adaptor features

- AC protection Fuse
- CPU Remote reset
- Controlled by Modem remotely
- Easy visual Indication
- 24AC LED
- 24DC LED
- CPU Reset

#### **Custom ABB controller**

• Memory 80MB

/Remote Access

Teltonika Modem and Sim Card configurations



The Device Serial number is used when adding the MAX controller to your cloud account.

Select the router's SSID on your device's wireless connections and enter the password. Then enter the URL: 192.168.0.10 in your browser

#### /Adding a device to **Grow**Sphere<sup>™</sup> Workspace

- 1) navigate to device management
- 2) click on add device
- 3) click on controller / PLC
- 4) enter the PLC serial number
- 5) click connect



/To access your MAX controller locally, please click on this Icon



/ GrowSphere<sup>™</sup> MAX - Basic Settings click Get started



/ The controller's Home Screen provides a snapshot of current irrigation activity

t Next in Q	ing Shift	Amount 	Pressure	Flow	Irrigation
 Next in Q		-	2		
Next in Q					
Next in Q					Mainline 2
	ig. Shift	Total	Pressure	Flow	rrigation
**				**	-
					Mainline 3
Next in Q	ig Shift	Total	Pressure	Flow	rrigation
					đ
					Mainline 4
	ng Shift 	Total 	Pressure	Flow 	Irrigation Mainline 4

/ Navigate to preferences Click the Gear Icon then Select Preferences

Mainline 1						
Irrigation	Flow	Pressure	Total	Dosing	Shift	Next in Q
	1	1	#		192) 193	(H)
Mainline 2						
Irrigation	Flow	Pressure	Tota)	Dosing	Shift	Next in Q
*	-	~			1997) 1997	
Mainline 3						
Irrigation	Flow	Pressure	Total	Dosing	Shift	Next in Q
	-				(m)	-
Preferences						
Settings	Flow	Pressure	Total	Dosing	Shift	Next in O
Admin			100000	C WEDGE OF LA	100.000	(Acrassins)

/Preferences setings Chose your General Settings and continue to the next step, your selections will be saved automatically

General	General Planine Demicons		mainine Delays		
Language	English	Units		Metric	
Time format	24 hours	First day of the week		Sunday	
итс	+2 ~	Date format		dd/mm/yy	
Current UTC time 🛛 🛃 Auto	18:41	Current date (dd/mm/yy)		07.11.22	
Farm name		Farm name here			
Phone number for alarms	+972-123-456-7890	+972-123-456-7891	+972-	123-456-7891	

Ger	heral		Sys	tem Definitions		Sys	tem Delay	s
Disable Mainline	t;							
Start day time	06:00	End d	lay time 02:0	0				
Pause Mainlin	e on energy save	period						Edit
Sunday	Monday	Tue	sday.	Wednesday	Thursday	Friday		Saturday
20:00- 05:00	~			8	#	-		
Power off recovery								
When electrical powe	r is off for more than	01:00	hh:mm			Reset 🔽	Queue	Irrigation
Add to queue imi	gation programs who	start time	was on power	off period				
Minimal left quantity	for uncompleted irr	nation	(%) 3.0	Minimal	left time for uncompl	eted Irrigation	196)	3.0

/Select Mainline Definitions and enter definitions for each mainline

/Select Mainline Delays and set the desired delays for your system

}	General	Mainline Definitions	Ma	Mainline Delays		
	System Delays		On	off	Unit	
1	Pump/s		00:10	00:00	mm:s	
2.	Main valve delay		00:05	00:00	mm:s	
9	Irrigation valves delay		00:00	00:10	mm:se	
2	Line fill delay	00:00		mm:se		
3	Program Delays					
	Delay between Irrigation shifts			00:00	mm:se	
)	Shift Overlap		00:00	mm:se		
	Valves stanger delav			00.00	mmis	

## /Scroll down to see all Mainline Delays

â	General	General Mainline Definitions			
6	Valves stagger delay		00:00	mm:ss	
00	Normal priority program maximal waiting	g time	00:00	mm:ss	
NPK)	Dosing station				
A	Dosing valve minimal on time		00:00	mm:ss	
-	Dosing valve minimal off time	00:00	mm:ss		
	EC cycle control		00:00	mm:ss	
3	pH cycle control		00:00	mm:ss	
	Main flow stability time		00:00	mm:ss	

## /Click the Gear icon and select Settings

C.	General	Mainline Definitions	Mainline Delays				
<u>E</u>	Valves stagger delay		00:00	mmiss			
es -	Normal priority program maximal waitin	g time	00:00	mm:ss			
	Dosing station						
	Dosing valve minimal on time	00:00	mmiss				
23 2	Dosing valve minimal off time		00:00	mm:ss			
	EC cycle control	00:00	mm:ss				
	Preferences		00:00	mm:ss			
	Settings y time	00:00	mm:ss				

/Navigate to settings Enter the default password: 287451, then select "Continue"

j,	General	General Mainline Definitions		s <u></u>	Mainline Delays	
à	Valves stagger delay	Password protected screens		×	00:00	mm:ss
9	Normal priority program maximal	priority program maximal Enter your password			00:00	mm:ss
×	Dosing station	287451	Hide			
	Dosing valve minimal on time	Continue			00:00	mm:ss
2	Dosing valve minimal off time			-	00:00	mm:ss
	EC cycle control				00:00	mm:ss
2	Preferences				00:00	mm:ss
	Settings y time				00:00	mm:ss
4	Admin					

## /Mainlines settings

Select the Configuration Tab to define the system elements for each Mainline For example- Select Dosing station when there is a Dosing station connected

Configuratio	n Loca	1/0	Remote I/O	Communication	Wiring Diagram
Mainline	Pump Station	Filter Station	Dosing Station	Valves	Other Devices
Mainline					
Valves	5				
Pump			📋 Pump C	verload	
Pump Stati					
💟 Filter Static	'n		📋 Externa	I Filter Station	
Dosing Sta	tion				
🛃 Main Valve					
💟 Main WM				O Local	
Main Broccu	ire sensor			•	

/Valves settings Select the Valves Tab and enter the name, flow rate and irrigated area

ď	Configuratio	on	Local I	/0 R	emote I/O	Commu	nication	Wir	ing Diagram	
2	Mainline	Pu	mp Station	Filter Station	Dosing Station		/alves	Other I	Devices	
	Device type	Device#	Source	Name	Flow	w (m3/s	Area (ha)	Assigned	Module/RTU	DC
6	Valve	1	M. Line 1	VLV_1	2	0.0	300.0	~	1. PM5052	0
3	Valve	2	M. Line 1	VLV_2					1. PM5052	0
7	Valve	3	M. Line 1	VLV_3	1	0.0	300.0	~	1. PM5052	2
3	Valve	4	M. Line 1	VLV_4	1	0.0	300.0	~	1. PM5052	3
	Valve	5	M. Line 1	VLV_5	1	0.0	300.0	~	1. PM5052	4
۶	Valve	6	M. Line 1	VLV_6	1	0.0	300.0	4	1. PM5052	5
	Valve	7	M. Line 1	VLV_7	1	0.0	300.0	~	1. PM5052	6

**Other devices settings** Select the Other Devices tab to enter the name and characteristics of other devices

Configuration	1	Local I	/0 R	Remote I/O Communication			Wiring Diagram		
Mainline	Pu	mp Station	Filter Station	Dosing Station		Valves	Other (	Devices	
Device type	Device#	Source	Name	F	low		Assigned	Module	DC
Pump	1	M. Line 1	PMP_1		10 m3/h		~	1. PM5052	0
Filter	1	M. Line 1	FLTR_1		10 m3/h		~	1. PM5052	0
Dosing channel	1	M. Line 1	DCH_1					1. PM5052	0
Booster pump	1	M. Line 1	B.PMP_1		10 m3/h		~	1. PM5052	0
Alarm output	1	M. Line 1	ALRM_1		10 m3/h		~	1. PM5052	0
EC sensor	1	M. Line 1	EC_1		10 m3/h		~	1. PM5052	0
EC sensor	2	M. Line 1	EC_1		10 m3/h		~	1. PM5052	0

/Local I/O settings Select the I/O tab to define Inputs and Outputs. Double tap to copy device from above I/O

	Configuration	Loca	al I/O		Remote I/O	Communicatio	n	Wiring Diagra
C	Digital output Digital output	Digital intput	Device#	Analog intput Source	Name	Flow	Area (ha)	Assigned
1.	1.PM5052 0	Valve	1	M. line 1	VLV_1	10.0 m3/h	300.0	Unassi
2.	1.PM5052 1	Valve	2	M. line 1	VLV_2	10.0 m3/h	300.0	Unassig
3.	1.PM5052 2	pump	][1	M. line 1	PMP_1	)[•	300.0	Unassi
4.	1.PM5052 3	3 Assign	]-		2	][-	].	Unassi
5.	1.PM5052 4	Assign	]-		-	][-	-	Unassi
6.	1.PM5052 5	Assign	][			]		Unassi
7.	1.PM5052 6	Assign	-			-		Unassi

/Select the Digital Input tab to assign and define local Digital Inputs that are connected by wire to the controller

5		Configur	ation	La	ocal I/O	_ <b>y</b> _	Remote I/O	Communicat	ion	Wiring Diagram
5		Digital out	put	Digital intpu		Analog intput				
		Module	DO#	Device type	Device#	Source	Name	Туре	Rate	Assigned
p	1.	1.PM5052	0	AC Fault	1	System	AC Fault	NC	~ 300.0	Unassign
	2,	1.PM5052	1	Water meter	2	M. line 1	WMTR1.1	LPP	~ 10.00	Unassign
5	3,	1.PM5052	2	Assign	].					Unassign
=	4.	1.PM5052	4	Assign	-			)[-		Unassign
1	5.	1.PM5052	5	Assign	-			][-		Unassign
	6.	1.PM5052	6	Assign				][•		Unassign
24	7.	1 PM5052	7	Assion	٦.		6	16-	16.	Unassian

/Wiring Diagram Will display the modules and the location of each defined devices

Gr	owSphere*	Farm	All M	aînli	ines 🔻	Settings				Su Su	n 05 Mar 2023 14:51:43 🧐
9	Cont	iguration		Lo	ocal I/O	Rem	ote I/O	Cor	nmu	nication	Wiring Diagram
2	PM-5052 ⊕ +	- CPU	DO	-572 0	2 - Output DCH1.2	Al-561	- Analog Input	D	0-573	3 - Output VLV1.1	
9	<ul><li>● 100</li><li>● +</li></ul>		•	C 1	Common DCH1.3	<ul> <li>● A0</li> <li>● ·</li> <li>● *</li> </ul>	EC1.1	•	1 2 3	VLV1.2 VLV1.3	
	<ul> <li>● 101</li> <li>● +</li> <li>● 102</li> </ul>		•	C 2 C	Common DCH1.4 Common	⊕ ↓ ⊕ A1 ⊕ ↓	PH1.1	• •	C 4	Common VLV1.5	
7	<ul> <li>⊕ +</li> <li>⊕ 103</li> <li>⊕ +</li> </ul>			3 C	DCH1.1 Common	⊕ A2 ⊕		•	5 6 7		
E	<ul> <li>€ 104</li> <li>€ +</li> <li>€ 105</li> </ul>		•	4 C 5	Common	⊕ + ⊕ A3 ⊕ ·		•	8 9	Common	
	<ul><li>⊕ +</li><li>⊕ 106</li></ul>		€ (€	C 6	Common	<ul> <li>⊕</li> <li>⊕</li> </ul>		•	10 11 C	Common	
	<ul> <li>              € 107      </li> <li>             € +      </li> </ul>		•	7	Common	•			12 13		•
N	<ul> <li>● 108</li> <li>● +</li> </ul>		œ			٢		<ul> <li>●</li> <li>●</li> <li>●</li> </ul>	14 15 C	Common	

## /The Scada screen will show the running program when it is running



### /Wiring Instructions GrowSphere<sup>™</sup> MAX - CPU



/ GrowSphere<sup>™</sup> MAX - D0573 Module

- 16 normally open relay outputs
- Isolation Groups = 2 (8 channels per group)
- Output current per channel = 2 A
- Indication of output signals 1 yellow LED per ch.



#### / GrowSphere™ MAX - AI561 Module

- 4 Analog Inputs
- Feed (Sourcing) voltage 24 VDC
- Resolution 0-20mA; 4 -20mA; 12 bit
- Channel input resistance 250 ohm



24 Vdc

AI1-AI4

Connecting isolated sensor with current output



Connecting current transmitter



## /Connection of Weather Station – RS232

Gro	wSphere- 7	Mainline 3	Settings		e 18 Apr 2023 10:55:53 🏾 🌳
窳	Configuration	Local I/O	Remote I/O	Communication	Wiring Diagram
备	RS-485	RS-232	overview		
0°	RS-232 - Serial ports		2		3
(NPK)	NetRTU (GW) AI	llocation 🔘 Weather stat	tion		Detect system
$\triangle$					

## RS232 Module



Signal	Descrition
RTS	Request To Send DCE is ready to accept data from the DTE
TxD	Transmit Data (output)
GRD	Common Ground
RxD	Receive Data (input)
CTS	Clear To Send (input) DCE is ready to accept data from the DTE

#### State LEDs

Signal	Color	State	Descrition
TxD	Yellow	ON (blinking)	Transmitting
RxD	Yellow	ON (blinking)	Receiving

## /Connection of RadioNet / SingleNet - RS485

Grou	wSphere* 7	Mainline 3 🔻	Settings		📆 Tue 18 Apr 2023 10:55:34 🗢
⑥	Configuration	Local I/O	Remote I/O	Communication	Wiring Diagram
斋	R5-485	RS-232 RTU ov	erview		
00	RS-485				3
(NPK)	SingleNet Alloca	ation O RadioNet Alloca	ation		Start Allocation
≙	Hydraulic model				
₿				Ex	oort Hydraulic model
0					

## RS485 Module



#### State LEDs

Signal	Color	State	Descrition
TxD	Yellow	ON (blinking)	Transmitting
RxD	Yellow	ON (blinking)	Receiving
120R	Yellow	ON	Bus termination
PUD	Yellow	ON	Pull-up / Pull-down



#### GrowSphere<sup>™</sup> Max

SingleNet Host





#### GrowSphere<sup>™</sup> Max

RadioNet Host



/Dosing Setting Select the Dosing Station Tab and define the elements of the Dosing Station for each Mainline

comgaratio	n	ocal I/C	)	Remo	te I/O		Communic	ation	Wiring Diagr
Mainline	Pump Station		Filter Station		osing Stat	ton 1	Valves		Other Devices
Dosing Station	-								
C Extensive	2 Intensive								
	3								
Dosing Channels	4								
СН	1	2	3	4	5	:6	7	8	
Dosing met	er 🔽		2						
Failure									
	5								
Dosing Boo	ster 6				🔽 Bo	oster Pu	mp O.L.		
		-							

/Select the Analog Input tab to assign and define local Analog Inputs that are connected by wire to the controller

<u>ش</u>	Configuration	L	ocal I/	0	<u>y</u>	Rer	mote I	/0		Commun	nicatio	n:	Wiring Diagram
8	Digital output	Digital intpu	It .	Ana	log int	tput	Manua			Inout		their	Arrived
° (	1.AI561 0 EC Sensor		1	3	ine 1		EC_1			4-20 m	A	рН	AND THE REAL PROPERTY
5	Input range (mA)	-	4								8	st	Unassign
(in c)	4.00 - 2	Tersioneter	(14)	enge massari	(141)	Autor	100)	Characteristics ANTICS		(Star tal more and	(00)	)1.30	
$\triangle$	1.AI561 0 EC Sense	(waterie (waterie (waterie		11 14	1	Annual Sectors		(ateni Arteni	(1) (1)	(If Bighteni	(100)	pН	
_	Input range (mA)	( etc etc m	110	E 1915	mi)	(maret,)	1997)	( Lashappag	141)	(New York Ballyn	(111)	R	Unassign
	4.00 - 2	(Senteror	(001	the learning	(19)	Comet.21	(49)	(invest firme	=	(The holder	(80)	01.30	
	_	(Aprenier	m) (	C Pe contra	(141)	(Amint M	(40)	(the loss he	=	CanCig were united	(00)		
ක	1.AI561 0 A	(area hits	(10)	tt mar-	nts)	(Prose of Cal	102)	(zeohann kena	· (111)		(423)		
9	Input range (mA)	(20'00 \$20m	(m)	Q: sear	100)	(10001)	1000)	Allarsaretiler	_m)	( HEAR BALERIN	)	et	Unassign
		Tonia Seer	(m)	54 kingminister	inu)	(inter	(100)	(main	(H)	Care hand	(00)		

#### /Select the Local I/O tab and then Local analog Inputs Assign an analog input to the pH sensors

		~		
	Configuration Local I/O	Remote I/O	Communication	Wiring Diagram
	Digital output Digital intput Ar	halog intput		
	Module AI# Device type NO# Sou	rce Name	Input Unit	Assigned
	1.AI561 0 General 0-20mA	. line 1 EC_1	4-20 mA pH	
£.	Input range (mA) Output ran	9e	Offset	Unassign
	4.00 - 20.00 = 0	- 10	- 01.30	
	1.AI561 0 General 0-20mA		4-20 mA	
		0	Offset	Unassign
	Number         4         is new (0)         NMM         (0)         NMM         (0) <th(0)< th="">         (0)         (0)         <th(< td=""><td>10</td><td>0.00</td><td></td></th(<></th(0)<>	10	0.00	
1	(mma BI) (Exec BI) (mma BI) (m	The First Date: 12)		-
2	(000 mm (0) (00 mm (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	mermane (12)	Offset	Unassign
		and the second s		1

## /EC and pH settings

				IVEN	iote ijo	communica	RION	winng biagram
ocal digital o	output Local	ligital input	Local a	nalog ing	out			
Module Ai E	Device type	NO.	Source	,	lame	Input	Unit	Assigned
AI561.10	EC	1	M.Line1		EC1.1	4 - 20 m	A	
Input Range (	(mA)	Outp	ut Range			or	fset	Unassign
4	- 20	= 0		- 10		o	.00	
AI561.11	рн	1	M.Linel		PH1.1	4 - 20 m	A	
Input Range (	(mA)	Outp	ut Range			of	/set	Unassign
4	- 20	= 0		• 14		o	.00	
	AI561.11 AI561.11 AI561.11 AI561.11	Al561.10 EC Input Range (mA) 4 - 20 Al561.11 PH Input Range (mA) 4 - 20	Imput Range (mA)     Output       Input Range (mA)     0       Input Range (mA)     0	Al561.10 EC 1 M.Line1   Input Range (mA) Output Range   Al561.11 PH 1 M.Line1   Input Range (mA) Output Range   4 - 20 = 0	Al561.10 EC 1 M.Line1   Input Range (mA) Output Range   Al561.11 PH   Input Range (mA) Output Range   Al561.11 PH   Input Range (mA) Output Range   Input Range (mA) Output Range   Input Range (mA) Imput Range   Imput Range (mA) <t< td=""><td>Input Range (mA) Output Range   Al561.11 PH   Imput Range (mA) Output Range   Al561.11 PH   Imput Range (mA) Output Range   Imput Range (mA) Output Range</td><td>Input Range (mA) Output Range   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Output Range Of   Input Range (mA) Output Range   Input Range (mA) Input Range   Input Range (mA)</td><td>Alsolitii Local analog input     Module Al Device type NO. Source Name Input Unit     Alsolitiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii</td></t<>	Input Range (mA) Output Range   Al561.11 PH   Imput Range (mA) Output Range   Al561.11 PH   Imput Range (mA) Output Range   Imput Range (mA) Output Range	Input Range (mA) Output Range   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Al561.11 PH   Input Range (mA) Output Range   Output Range Of   Output Range Of   Input Range (mA) Output Range   Input Range (mA) Input Range   Input Range (mA)	Alsolitii Local analog input     Module Al Device type NO. Source Name Input Unit     Alsolitiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii

/Select the dosing icon and then select the Tab Channels Settings Active the dosing channels and set the dosing channels parameters

Active       ID       Dosing channel       Channel Type       Minimum Flow L/h       Reaction       Reaction       Rate       Low deviation       High deviation         I       DCH1.1       Venturi Solenoid •       1.0       600.0       EC       0.1 LPP       30       %       40         I       2       DCH1.2       Venturi Solenoid •       1.0       450.0       EC       0.1 LPP       30       %       40         I       3       DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30       %       40         I       Numinus       Passive       EC       0.1 LPP       30       %       40         I       DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30       %       40         Inknown       Venturi Solenoid •       I.0       300.0       Acid •       0.1 LPP       30       %       40         Inknown       Venturi Solenoid •       I.0       300.0       Acid •       I.0       Venturi Solenoid •       EC       I.0       I.0<	Active       ID       Dosing channel       Channel Type       Minimal Flow L/h       Nominal Flow L/h       Reaction       Bosing Mede       Low deviation       High deviation         Image: Section       1       DCH1.1       Venturi Solenoid       1.0       600.0       EC       0.1 LPP       30       %       40         Image: Section       2       DCH1.2       Venturi Solenoid       1.0       450.0       EC       0.1 LPP       30       %       40         Image: Section       3       DCH1.3       Venturi Solenoid       1.0       300.0       Acid       0.1 LPP       30       %       40         Image: Section       3       DCH1.3       Venturi Solenoid       EC       0.1 LPP       30       %       40         Image: Section       Minimal Section       4       1.0       300.0       Acid       0.1 LPP       30       %       40         Image: Section       Venturi Solenoid       Image: Section       Feature Section       Feature Section       Feature Section       1.0       Section       Feature
I       DCH1.1       Venturi Solenoid •       1.0       600.0       EC •       0.1 LPP       30 % 40         I       2       DCH1.2       Venturi Solenoid •       1.0       450.0       EC •       0.1 LPP       30 % 40         I       3       DCH1.3       Venturi Solenoid •       1.0       450.0       EC •       0.1 LPP       30 % 40         I       3       DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Indextra to the low of the	I       DCH1.1       Venturi Solenoid       1.0       600.0       EC       0.1 LPP       30 % 40         I       DCH1.2       Venturi Solenoid       1.0       450.0       EC       0.1 LPP       30 % 40         I       3       DCH1.3       Venturi Solenoid       1.0       300.0       Acid       0.1 LPP       30 % 40         I       3       DCH1.3       Venturi Solenoid       1.0       300.0       Acid       0.1 LPP       30 % 40         I       I       DCH1.3       Venturi Solenoid       1.0       300.0       Acid       0.1 LPP       30 % 40         I       Unknown       Venturi Solenoid       I.0       300.0       Acid       0.1 LPP       30 % 40         Venturi Solenoid       Venturi Solenoid       I.0       300.0       Acid       0.1 LPP       30 % 40
Image: 2 DCH1.2       Venturi Solenoid •       1.0       450.0       EC •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40         Image: 2 DCH1.3       Venturi Solenoid •       1.0       300.0       Acid •       0.1 LPP       30 % 40	Image: Second
3 DCH1.3     Venturi Solenoid     1.0     300.0     Acid     0.1 LPP     30 % 40       Unknown     Passive       Venturi Solenoid     EC	3 DCH1.3     Venturi Solenoid     1.0     300.0     Acid     0.1 LPP     30 % 40       Unknown     Venturi Solenoid     Venturi Solenoid     EC       Venturi Analog     Acid     Acid
Unknown Passive Venturi Solenoid EC	Unknown Passive Venturi Solenoid EC Venturi Analog Add
Yenturi Sciencia EC	Venturi Sciencis         EC           Venturi Analog         Add
Line Andrea	Venturi Analog Add
Venturi Analog	
Electrical Alkaline	Electrical Alkaline
B Hydraulic	Hydraulic

Select the General Settings Tab Select the dosing method to Intensive / Select the require delays

~	Recipes		Overview		General Settings		Channels Settings
邰	- Incoper		- erernan		outerer petange		Contractor occurriges
8	C Extensive	O Intensive					
c°	EC					EC sensors	
	Control Cycle Delta	Fine Tuning	Coarse Tuning	Deadband	Integ time	Control	Avg filter speed
$\wedge$	15,0 Ser 0.2	50.0	50.0	0.0	10.0 Sec	No sensor	• 5 •
_	рН					pH sensors	
	Control Cycle Delta	Fine Tuning	Coarse Tuning	Deadband	Integ time	Control	Avg filter speed
	15.0 Sec 0.2	25.0	50.0	0.1	10.0 Sec	No sensor	▼ 5 ¥
Ø							
	Minimal on time	Minimel off time	Water flow	stebility time	Booster off delay	6	
	1.8 Sec	2.0 Sec	5.0 Sec		5.0 Sec		

Activate the EC and pH control and change the default settings according to your system

manin Farm	Pidrinine L	▼ Dos	sing			05 Mar 2023 - 153
Recipes	Overview Use	er C	Verview Technicia	in Gene	eral Settings	Channels Se
C Extensive	O Intensive					
EC EC					EC sensors	
Control Cycle Del	ta Fine Tuning	Coarse Tuning	Deadband	Integ time	Control	Avg filter spe
15.0 Sec 0.2	50.0	50.0	0.0	10.0 Sec	Sensor 1 👻	5
🔽 рН					pH sensors	
Control Cycle Del	ta Fine Tuning	Coarse Tuning	9 Deadband	Integ time	Control	Avg filter spe
15.0 Sec 0.2	25.0	50.0	0.1	10.0 Sec	Sensor 1 👻	5
Minimal on time	Minimal off time	Water fi	ow stability time	Booster off de	av	
	a summer and summer		an entering ones		28 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	

**/**Dosing Recipes Select the Recipes tab to edit a dosing program. Then choose recipe 1

		Recipes	Overview	General Settings	Channels Settings
	1	Recipe Name Undefined		No Irrigition programs	
0	2	Recipe Name Undefined		No impation programs	
D	3	Recipe Name Undefined		No Irrigation programs	
	4	Recipe Name Undefined		No Irrigation programs	
	5	Recipe Name Undefined		No Irrigation programs	
0	6	Recipe Name Undefined		No Irrigation programs	
0	Ż	Recipe Name Undefined		No Irrigation programs	
	8	Recipe Name Undefined		No Irrigition programs	
	9	Recipe Name Undefined		No Irrigation programs	
	10	Recipe Name Undefined		No Irrigation programs	

## / Dosing Channels

Activate the recipe's dosing channels. Select the methods and quantities for each channel. Set the target EC and pH. Set DM Control to active if required

8	Active	Dosing channel	Nethod	uentity / Time	Value	4 DN1 Control
39		1 DOH1.1	1/1000 💌	Quantity 👻	11 L	0.00
		2 DOH1.2	1/1000 +	Quantity +	B L	0.0
		3 DOH1.3	1/1000 -	Quantity 👻	31	010
3			Bulk Spread 1/1003			
3				-		

Activate the Recipe Select the dosing recipe to active the recipe Repeat this action to other dosing recipes as required

Gro	wSpher	e F	arm	Main line 1	Dosing		Wed 04 Jan 2022 09:54:51	
â			Recipes		Overview	General Settings	Channels Settings	
2		1	Dosing 1			No Irrigation programs		:
5		2	Recipe Name	Undefined		No Irrigation programs		÷
		3	Recipe Name	Undefined		No Irrigation programs		:
		94.5	Recipe Name	Undefined		No Inigation programs		:
ŝ		5	Recipe Name	Undefined		No Irrigation programs		:
		6	Recipe Name	Undefined		No Irrigation programs		:
		7	Recipe Name	Undefined		No Irrigation programs		÷
20		8	Recipe Name	Undefined		No Irrigation programs		÷
		9	Recipe Name	Undefined		No Irrigation programs		1
K		10	Recipe Name	Undefined		No Irrigation programs		(E)

## / Connection of D0572 Module

- 8 triac outputs 24 VAC
- 'C' Shared common
- Output current per channel = 2 A
- 2A Fuse on each channel. Not removable
- Indication of output signals 1 yellow LED per ch.
- The LED is on when output signal is high





/Irrigation Settings Select the irrigation program that you want to activate Get started with Irrigation Programs by clicking on the Irrigation icon

		19 IC 1		
0	1 Program 01	Routine	00:00:00   0 Shifts	
0	2 Program 02	Routine	00:00:00   0 Shifts	
	3 Program 03	Routine	00:00:00 J 0 Shifts	
0	4 Program 04	Routine	00:00:00   0 Shifts	
	5 Program 05	Routine	00:00:00   0 Shifts	
D	6 Program 06	Routine	00:00:00   0 Shifts	
D	7 Program 07	Routine	00:00:00   0 Shifts	
0	8 Program 08	Routine	00:00:00   0 Shifts	
0	9 Program 09	Routine	00:00:00   0 Shifts	
0	10 Program 10	Routine	00-00-00 1 0 Shifts	

#### Enter your desired program definitions for the following: Program Name, Type, Unit, Amount, Date Range, Start Time, and Dosing

J	test	Wating in queue Start
5	Type Routine Amount (shift) 5 m	<sup>3</sup> Factor 100% Total 01:23   25.00 m <sup>3</sup> Last irrigation 23.02.23   15:02
9	Priority Normal	
	Unit Qty Shifts (5)	Dosing Test Settings Next irrigation None
	Date range & time	Schedule
-	27.01.22 V to 05.03.23 No e	nd date Every (X) days 👻 🛛 1 day 👻
3	14:44 6	1
2	00:00	
2	00:00	
	00:00	Water before & after
	00:00	Apply to Unit Before After

/Select Add new shift then select Shift 01

ш (e	)						Reorder shifts	Add new shill
Activ	e.	Shift name	Time (HH:MM	Factor(%)	Dosing	Valves	Duration Left (HH.MM.SS)	
2	1	Shift 01	00:00	100	No recipe	0	00:00:00	
2								
1								
Ð								
-								
3								

Enter Shift Name and select the valves that you want to operate at the same time, for the same duration

002 VLV1.2	🔘 30 m³/h		
003 VLV1.3	🕘 28 m³/h		
004 VLV1.4	🔘 30 m²/h		
005 VLV1.5	🕥 1 mº/h		
006 VLV1.6	🚫 1 m²/h		

/ Select the dosing and irrigation days (1, 2) / Set Water before & after, if required (3) / Select Dosing (4) to select the dosing recipe

a al		
â	Program 01 Valid	Skip Activate
86	Type Routine  Amount (shift) 01:00	Total 01:00   55.00 m <sup>3</sup> Last irrigation 04.01.23   08:00
8	Priority         Normal         •           Unit         HH:MM         •         Factor         100 %         Shifts         1	Dosing 1 Settings Of Water
1	Date range & time	Schedule
_	01.01.23 🗸 to 31.01.23 🖌 🔲 No end date	week days
	08:00	Su Ma Tu We Th Fr Sa
3	00:00	
	00:00	Water before & after
	00:00	Apply To Unit Before After
	E1 00:00	Der shift - HHMMM - 00:00 00:00

#### /Choose the dosing recipe for this irrigation program

命	( F	Program	01	Valid	Skip	Activate
& 8	Type Priority	Ro	Dosing Note! This will overwrite a	my individual shifts selection of reci	ipe.	it irrigation 01.23   08:00
	Unit	H	No dosing	iny change recipes for each shift thr	ough the shifts screen	kt irrigation 01.23   08:00
	Date ra	.01.	O Dosing 1	Recipe Name Undefine	C Recipe Name Undefini	
	08	:00	Recipe Name Undefi	nc 🕜 Recipe Name Undefine	Recipe Name Undefine	5a
Ô	00	:00	Recipe Name Undefi	ne 🔘 Recipe Name Undefine	Recipe Name Undefini	
	00	:00	Recipe Name Undefi	ne.		2 After
_	0.00	-000			Cancel Save	00:00

To turn this program Active, select Active (1) Select the go back icon (2)

- tal		
ඛ	Program 01 Valid	Skip Activate
â	Type Routine  Amount (shift) 01:00	Total 01:00   55.00 m* Last irrigation 04.01.23   08:00
o	Priority Normal 👻	
	Unit HH:MM  Factor 100 % Shifts 1	Dosing Dosing 1 Settings Next Irrigation 06.01.23   08:00
$\wedge$	Date range & time	Schedule
	01.01.23 • to 31.01.23 • No end date	e week days 👻 1 week 👻
	08:00	Su No Tu We Th Fr Sa
6	00:00	
	00:00	Water before & after
	00:00	Apply To Unit Before After

/The program will be active and ready to start according to his start time and date

Gi	amspine	se.	Farm	Main line 1	•	Irrigation			Wed 04 Jan 2023 10:10:01	4
命		1	Program 01	R	outine	01:00:00	1 Shifts	06/01/23 08:00		1
8	D	2	Program 02	R	outine	00:00:00	0 Shifts			
C	٥	3	Program 03	R	outine	00:00:00	0 Shifts			;
	0	4	Program 04	R	putine	00:00:00	0 Shifts			:
$\triangle$	0	5	Program 05	R	outine	00:00:00 (	0 Shifts			1
₿	0	6	Program 06	R	outine	00:00:00 ]	0 Shifts			
~	0	z	Program 07	R	outine	00:00:00 (	0 Shifts			3
ଞ		8	Program 08	R	outine	00:00:00	0 Shifts			÷
	D	9	Program 09	R	outine	00:00:00	0 Shifts			1
GK		10	Program 10	R	outine	00:00:00	0 Shifts			

/When the program is running a green icon indicating that is running will be on the right side

GrowSp	here-	Farm Main	nline 1	•	Irrigation	Δ	Tue 18 Apr 2023	16:43:27 👳
<u>ه</u>	1	Program 01	Routine	16	:00:00   2 Shifts			ł
£	2	Insert Program						÷
9	3	Insert Program						:
(PR)	4	Insert Program						÷
ŝ	5	Insert Program						:
-	6	Insert Program						:
	7	Insert Program						:
3	8	Insert Program						:
	9	Insert Program						1
M	10	) Insert Program						:

GrowSphere<sup>™</sup> MAX Quick Setup - V2 - June 2023

# **GrowSphere**™ Operating System Patatat

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