

TOMMATECH

GmbH

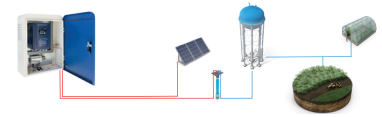
GERMAN-based company ●●●

SOLAR AGRICULTURAL IRRIGATION SYSTEMS





For a cleaner **World**



WHAT IS A SOLAR PUMP INVERTER?

Solar pump inverters are a special inverter series that converts the DC voltage from solar energy into AC to run water pumps operating with 220V/230V single phase or 380V/400V three phase and enables the pump motor to take off with the drive circuit inside.

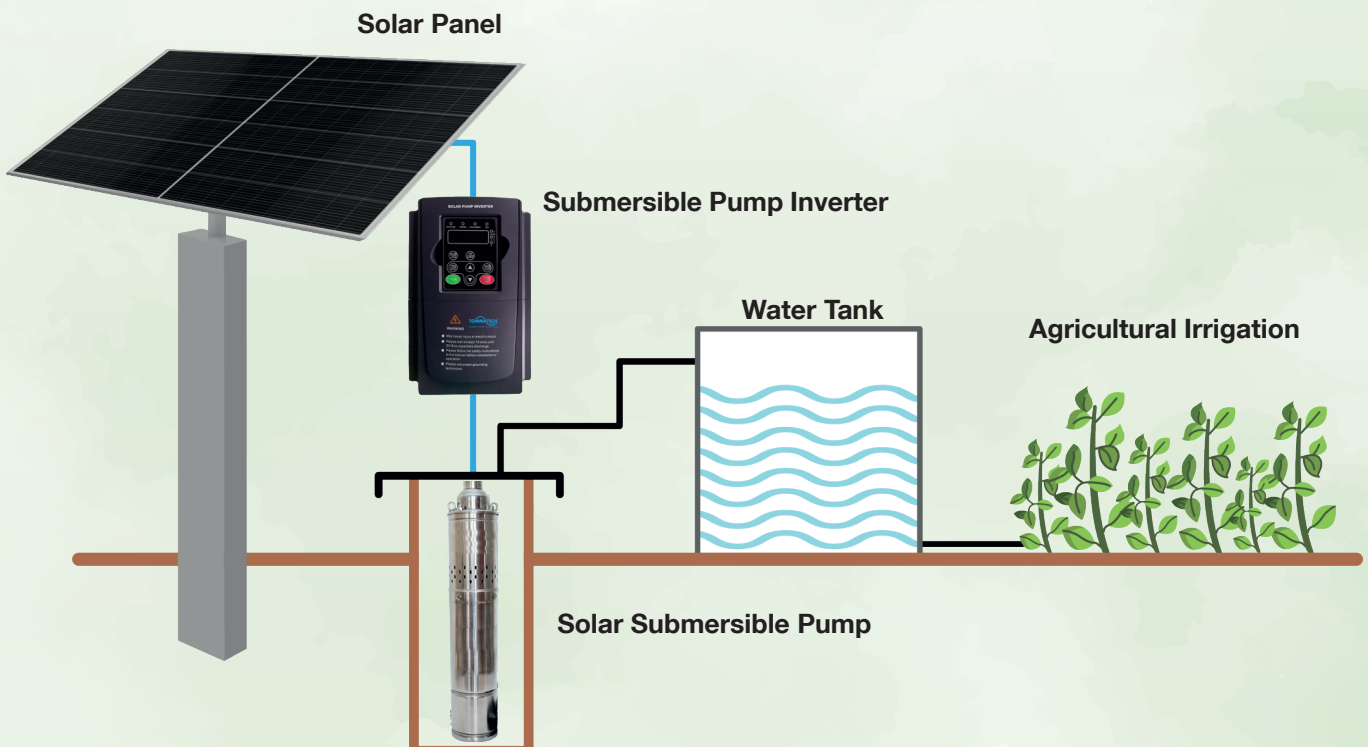
TommaTech solar pump inverters are specially produced for solar irrigation systems and have high MPPT voltage.



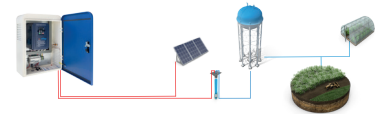
HOW DOES A SOLAR PUMP INVERTER WORK?

The instantaneous power received from the solar panels is converted into the signals required to start the pump motor through the solar pump inverter and transmitted to the motor.

With the driver circuit in the inverter, it changes the rotation moment or the number of revolutions of the pump shaft according to the instantaneous power consumed by the pump and offers low flow water in the morning and evening hours and high flow water at noon. The water drawn from the deep well or surface water can be used immediately, or if desired, it can be accumulated in a suitable volume tank and used for evening or night irrigation with the AC voltage drawn from the network with the AC input of the inverter.



WHAT IS POWER OPTIMIZATION (MPPT)?



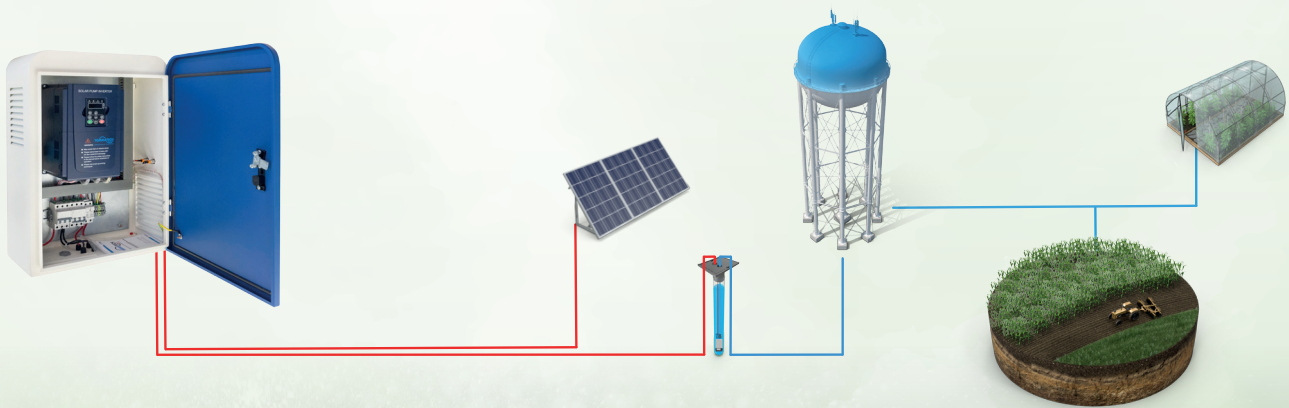
The power curve of a PV module is highly dependent on the radiation intensity and the temperature of the module, i.e. values that change continuously during the day. Therefore, the solar inverter must find and continuously monitor the optimum operating point on the power curve to generate the maximum power from the PV modules in each case. The optimum operating point is called the "maximum power point (MPP) and it is the inverter's task to find and monitor this MPP. MPP monitoring is crucial for the energy production efficiency of the PV plant.

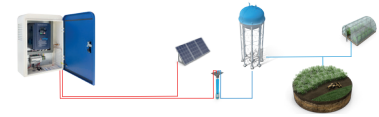
Thanks to the high withstand voltage of TommaTech solar pump inverters, more panel connections can be made than other solar pump inverters.

Thanks to the large MPPT voltage, the number of panels in the strings can be easily increased when designing the system, and the input voltage can be given close to the maximum withstand voltage.

Since the MPPT algorithm is in the range that will not be affected by PV energy fluctuations, it shows high performance even in full overcast weather.

With the MPPT of 550-850V, it provides longer operation even at the highest and lowest irradiance rates.





SOLAR PUMP INVERTER

SPI-Series Solar Pump Inverter



■ SPI-TT-2.2-MF

⋮

■ SPI-TT-250.0-TF

SOLAR PUMP INVERTER

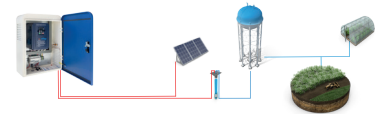


- Protection: IP20
- Operating temperature: -40/+70
- Casing material: ABS plastic up to 18.5kw, metal case after 18.5kw
- Solar pump inverter with drive circuit designed specifically for irrigation projects
- ABS Plastic Case
- Metal Case
- Multifunctional Keypad
- High Quality Components
- Reliable Packaging



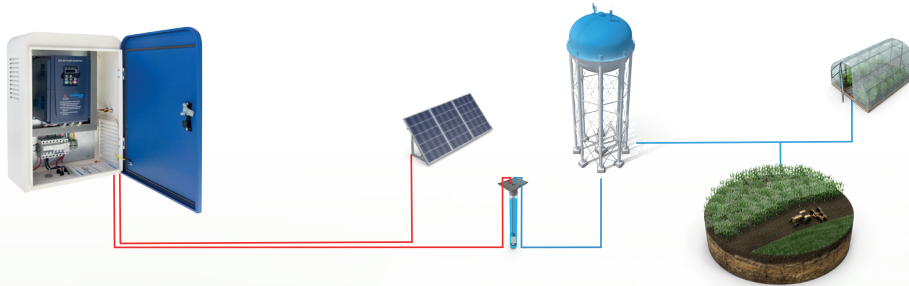
Product Package Contents

- User manual



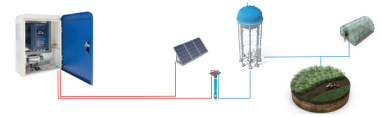
SOLAR PUMP INVERTER

SPI-Series Solar Pump Inverter



Model	230V Solar Pump Inverter	400V Solar Pump Inverter
AC Input Voltage	220V(-15%)	380V(-15%)
Maximum DC	240V(+10%)	440V(+10%)
Input Voltage	450V	900V
Start-Up Voltage	200V	300V
Lowest Working Voltage	150V	250V
DC Input Voltage Range	200V-400V	300V-750V
Recommended MPPT Voltage	330V	550V

Model	INPUT VOLTAGE (V)	RATED POWER (kW)	RATED INPUT CURRENT (A)	RATED OUTPUT CURRENT (A)	COMPATIBLE MOTOR (kW)	
SPI-TT-1.5-MF	1PH 230V	1.5	15.7	10.2	1	
SPI-TT-2.2-MF		2.2	24	14	1.5	
SPI-TT-1.5-TF		1.5	5	4.2	1.1	
SPI-TT-2.2-TF		2.2	5.8	5.5	1.5	
SPI-TT-4.0-TF		4	13.5	9.5	2.2	
SPI-TT-5.5-TF		5.5	19.5	14	4	
SPI-TT-7.5-TF		7.5	25	18.5	5.5	
SPI-TT-11.0-TF		11	32	25	7.5	
SPI-TT-15.0-TF		15	40	32	11	
SPI-TT-18.5-TF		18	47	38	15	
SPI-TT-22.0-TF		22	51	45	18.5	
SPI-TT-30.0-TF		3PH 400V	30	70	60	22
SPI-TT-37.0-TF			37	80	75	30
SPI-TT-45.0-TF			45	94	92	37
SPI-TT-55.0-TF			55	128	115	45
SPI-TT-75.0-TF			75	160	150	55
SPI-TT-90.0-TF	90		190	180	75	
SPI-TT-110.0-TF	110		225	215	90	
SPI-TT-132.0-TF	132		240	250	110	
SPI-TT-160.0-TF	160		290	305	132	
SPI-TT-185.0-TF	185		330	340	160	
SPI-TT-250.0-TF	250	460	480	220		



1.5KW-15KW PLASTIC CASE

18.5KW-132KW METAL CASE

Model No	A (mm)	B (mm)	H (mm)	W (mm)	D (mm)	MOUNTING HOLE (mm)
SPI-TT-1.5-MF	110	70	180	120	154	4
SPI-TT-2.2-MF						
SPI-TT-1.5-TF						
SPI-TT-2.2-TF						
SPI-TT-4.0-TF	148	240	250	161	184	5
SPI-TT-5.5-TF						
SPI-TT-7.5-TF						
SPI-TT-11.0-TF	205	305	320	220	190	6
SPI-TT-15.0-TF						
SPI-TT-18.5-TF						
SPI-TT-22.0-TF	220	455	475	295	245	6
SPI-TT-30.0-TF						
SPI-TT-37.0-TF						
SPI-TT-45.0-TF						
SPI-TT-55.0-TF	230	560	580	375	265	6
SPI-TT-75.0-TF						
SPI-TT-90.0-TF						
SPI-TT-110.0-TF	320	730	755	460	330	6
SPI-TT-132.0-TF						
SPI-TT-160.0-TF						
SPI-TT-185.0-TF	550	-	1200	860	385	vertical base
SPI-TT-250.0-TF						
SPI-TT-250.0-TF	750	-	1400	1020	405	vertical base

SPI-SERIES MPPT PUMP INVERTER

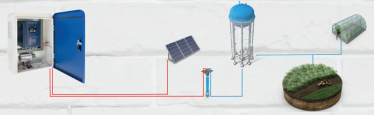


**900V
MPPT
INPUT
VOLTAGE**

**DC AND AC
POWER
SUPPLY**

**2.2KW
250KW
POWER
OPTIONS**

**IP55
CABINETS
FOR
PUMP
INVERTERS**



SOLAR PUMP INVERTER PRODUCT GROUP

HIGH VOLTAGE Solar Pump Inverters

Plastic Case



Metal Case



TommaTech
ABS Case Solar Pump Inverter
Single Phase 2.2kW

TommaTech
ABS Case Solar Pump Inverter
Three Phase 2.2kW-15kW

TommaTech
ABS Case Solar Pump Inverter
18.5kW-250kW



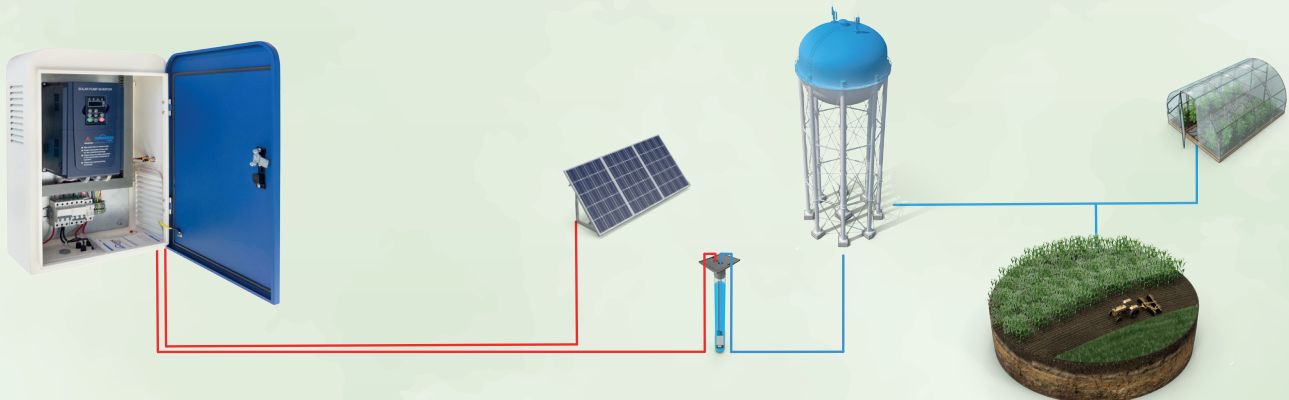


TOMMATECH TT90 4G CONNECTION DEVICE

- Real-time control of inverter performance via RS-485 communication port
- Ability to remotely control and monitor the inverter from mobile devices via web browser or application
- Providing easy integration and instant data transfer to mobile application via GSM Card
- Historical data record stored in centralized PC database
- Simple software update
- Password security protection and remote access



Technical Specifications	
Operating Voltage	9~24VDC
Supported Network Protocols	TCP, UDP, FTP, PPP, DNS, HTTP
Serial Port levels	RS232 / RS485
Serial Port Parameters	Baud Rate: 1200~115200bps Number of Data Bits: 8 Number of Stop Bits: 1
Power Consumption	During communication: <90mA@24V Idle: <35mA@24V
Operating Temperature	-40~85°C
Ingress Protection	IP54
Electromagnetic Compatibility	EMC: Electrostatic discharge noise immunity test level 3 RFEMS: Noise immunity test level 3

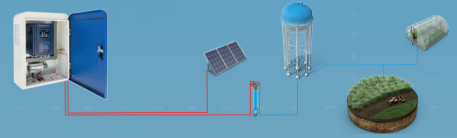




TOMMATECH IOT CLOUD

- Data Backup
- Timed Irrigation Current Advantage
- Remote Parameter Setting
- Voltage, Current, Frequency and Temperature Display
- Support with Static IP 4G Sim Card
- Remote Data Monitoring with Tommatech IOT Cloud Application





OUR REFERENCES



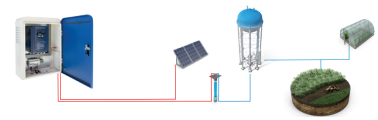
INSTALLED CAPACITY: 163,5 KWP



INSTALLED CAPACITY: 196,2 KWP

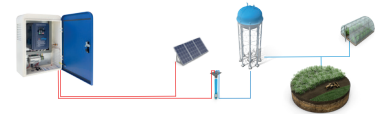
Get water for fields from the

Sun!

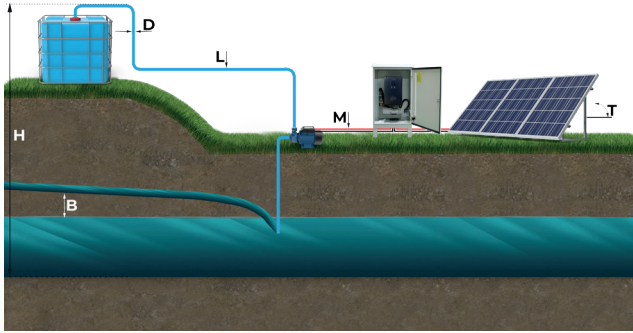


Pump Power (Hp)	Inverter Power (kw)	Inverter Model	Reference Connection Method by Panel Model (Number of Strings x Number of Panels)			
			TT550-108PM12	TT550-144PM10	TT430-108TN10	TT575-144TN10
1 HP (220VAc)	2.2 kw	SPI-TT-02-2.2-MF	1 x 9	1 x 7	1 x 9	1 x 7
1.5HP (220VAc)	2.2 kw	SPI-TT-02-2.2-MF	1 x 9	1 x 7	1 x 9	1 x 7
2 HP (220VAc)	2.2 kw	SPI-TT-02-2.2-MF	1 x 9	1 x 7	1 x 9	1 x 7
3 HP (220VAc)	2.2 kw	SPI-TT-02-2.2-MF	1 x 9	1 x 7	1 x 9	1 x 7
1 HP (380VAc)	2.2 kw	SPI-TT-04-2.2-TF	1 x 15	1 x 12	1 x 15	1 x 12
1.5HP (380VAc)	2.2 kw	SPI-TT-04-2.2-TF	1 x 15	1 x 12	1 x 15	1 x 12
2 HP (380VAc)	2.2 kw	SPI-TT-04-2.2-TF	1 x 15	1 x 12	1 x 15	1 x 12
3 HP (380VAc)	4 kw	SPI-TT-05-4.0-TF	1 x 15	1 x 12	1 x 15	1 x 12
4 HP	4 kw	SPI-TT-05-4.0-TF	1 x 16	1 x 13	1 x 16	1 x 13
5.5 HP	5.5 kw	SPI-TT-06-5.5-TF	1 x 18	1 x 14	1 x 18	1 x 14
7.5 HP	7.5 kw	SPI-TT-07-7.5-TF	1 x 19	1 x 15	1 x 20	1 x 15
10 HP	11 kw	SPI-TT-08-11.0-TF	1 x 22	2 x 14	2 x 18	2 x 13
15 HP	15 kw	SPI-TT-09-15.0-TF	2 x 18	2 x 15	2 x 20	2 x 15
20 HP	18.5 kw	SPI-TT-10-18.5-TF	2 x 21	3 x 14	3 x 18	3 x 14
25 HP	22 kw	SPI-TT-11-22.0-TF	3 x 18	4 x 14	3 x 22	3 x 16
30 HP	30 kw	SPI-TT-12-30.0-TF	3 x 22	4 x 16	4 x 20	4 x 15
35 HP	30 kw	SPI-TT-12-30.0-TF	3 x 23	5 x 15	5 x 19	5 x 15
40 HP	37 kw	SPI-TT-13-37.0-TF	4 x 21	6 x 14	5 x 21	5 x 16
50 HP	45 kw	SPI-TT-14-45.0-TF	5 x 21	7 x 15	6 x 22	6 x 16
60 HP	55 kw	SPI-TT-15-55.0-TF	6 x 21	9 x 14	7 x 23	8 x 15
75 HP	75 kw	SPI-TT-16-75.0-TF	7 x 22	10 x 16	9 x 23	10 x 15
100 HP	90 kw	SPI-TT-17-90.0-TF	9 x 23	14 x 15	13 x 21	13 x 16
125 HP	110 kw	SPI-TT-18-110.0-TF	12 x 22	18 x 15	16 x 21	16 x 16
150 HP	132 kw	SPI-TT-19-132.0-TF	14 x 22	21 x 15	17 x 22	19 x 16
180 HP	160 kw	SPI-TT-20-160.0-TF	16 x 22	22 x 16	21 x 22	CONTACT US
200 HP	185 kw	SPI-TT-21-185.0-TF	18 x 23	29 x 16	24 x 22	CONTACT US
250 HP	250 kw	SPI-TT-22-250.0-TF	25 x 21	33 x 16	31 x 22	CONTACT US

*Reference connection methods are advisory. Numbers and connection methods may vary according to external factors such as static & dynamic water level, radiation rate etc



IRRIGATION SYSTEMS



H (Static Height)

It is the vertical distance from the Dynamic Water Level to the highest point where the water will be transported.

T (Tilt Angle)

The angle of the PV Panel Surface to the flat ground.

M (Motor Cable)

Cable between Controller and Pump.

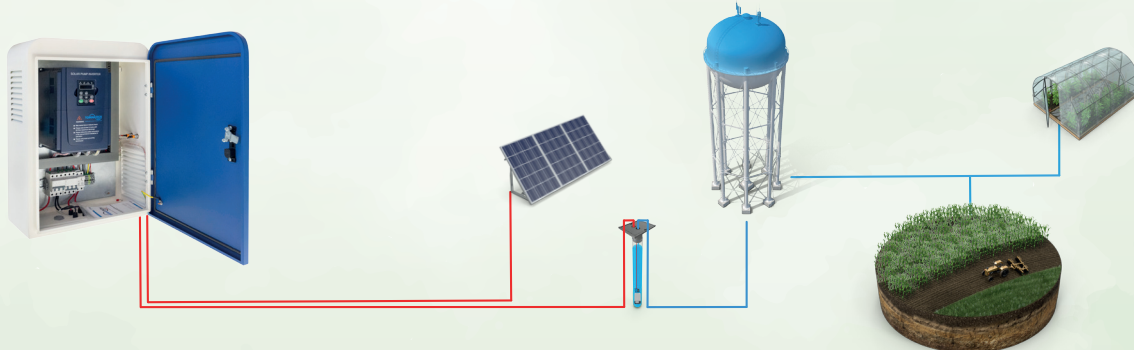
L (Pipeline)

Pipe distance from the pump outlet point to the distance to be delivered. Elbows and armatures should be added to the distance.

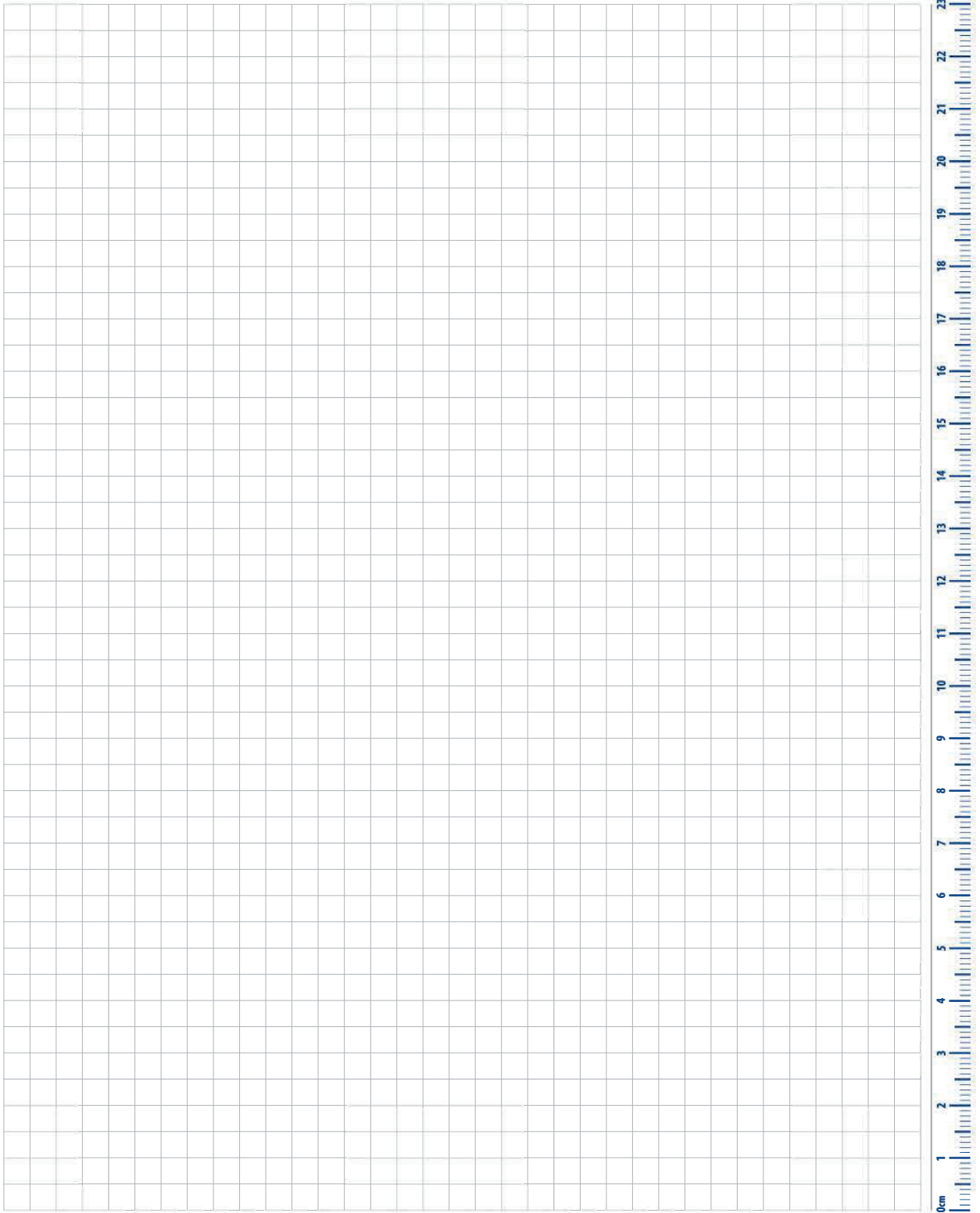
B (Water Level Decrease)

Withdrawal of water according to the flow rate and return of water back to its original level.

D (Pipe Inner Diameter)



HOUR/TON	KW	0,75	1,1	2,2	3	4	5,5	7,5	11	15	18,5	22	30	37	45
	HP	1	1,5	3	4	5,5	7,5	10	15	20	25	30	40	50	60
3 TONS / 8 TONS	H Static Height (m)	36	51	72	78	102	138	192	196	280	380	457	465	-	-
5 TONS / 15 TONS		30	43	61	71	93	126	175	185	270	370	440	450	-	-
7 TONS / 18 TONS		21	31	43	66	79	117	148	176	266	360	430	440	485	566
9 TONS / 20 TONS		14	20	28	43	56	106	106	165	236	322	385	420	470	545
12 TONS / 25 TONS					31	41	56	77	130	186	254	303	400	450	530
15 TONS / 30 TONS									110	157	214	256	350	420	525
20 TONS / 35 TONS													269	400	463
25 TONS / 35 TONS														330	379
30 TONS / 35 TONS														250	300
35 TONS / 35 TONS														180	267
40 TONS / 35 TONS														104	121



TOMMATECH

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- REMOTE MONITORING SYSTEM
- 900V MPPT INPUT VOLTAGE
- DC AND AC POWER SUPPLY
- 2.2KW 250KW POWER OPTIONS
- IP55 CABINET FOR PUMP INVERTERS