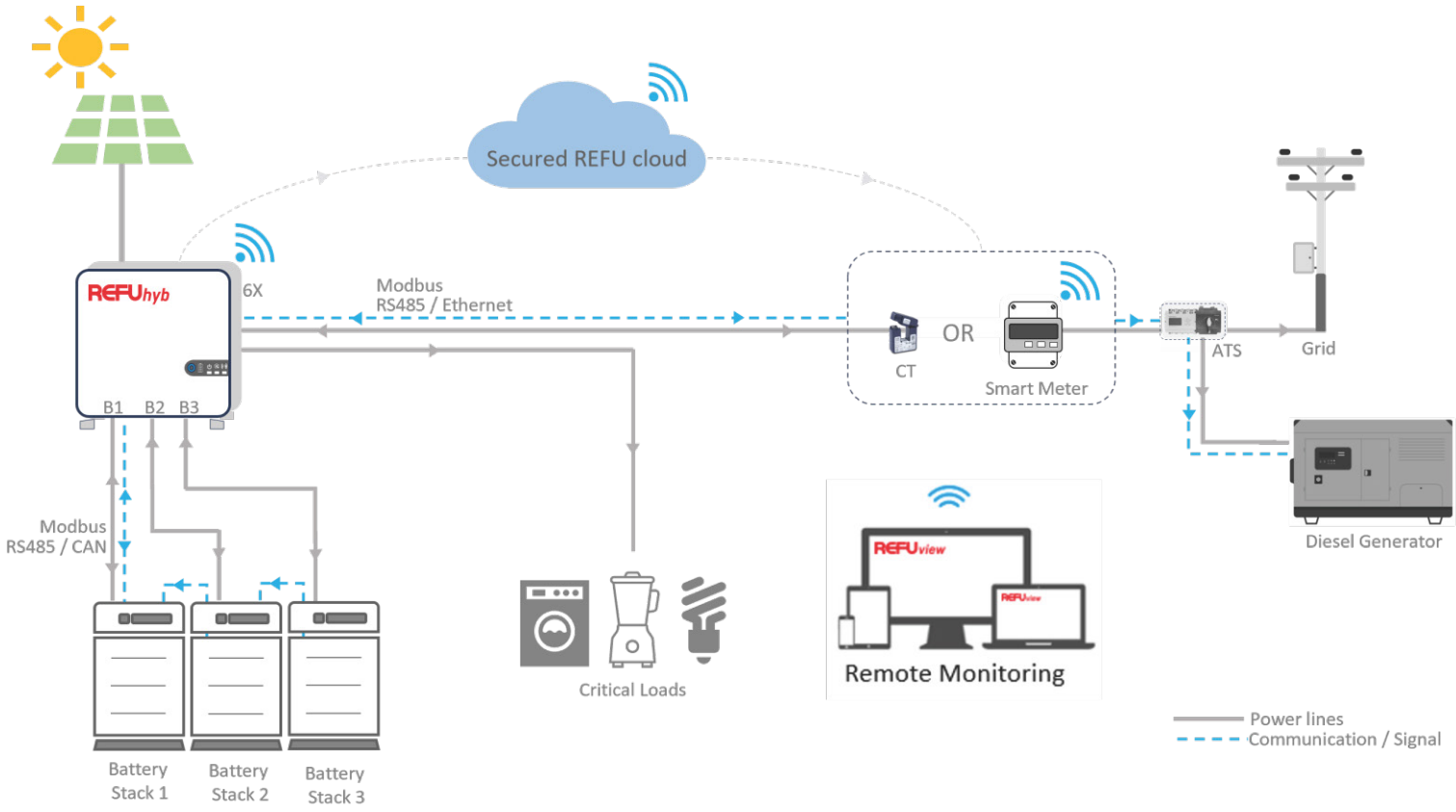
REFUhyb

C&I 3 Phase

Efficient. Reliable. Future Proof.

REFUhyb is a smart hybrid inverter that optimizes PV, battery, and grid/DG to meet your energy needs, in addition it offers flexibility to increase battery storage for various applications.



Profitability & Flexibility

- PV over-sizing possible - upto 2X.
- Multiple MPPTs and higher efficiency.
- More energy storage - 3X battery inputs.

Uninterrupted Power

- Separate connection for critical loads.
- UPS function - switching time<10ms.

Installation & Service

Easy to install with plug & play design

Smart app. - for easy commissioning.

Remote update - service convenience.

Reliability

Designed for harsh environment.

5/10 years warranty.

Technical Data Art. No.	REFUhyb 29.9KH3 690P029	REFUhyb 30KH3 690P030	REFUhyb 40KH3 690P040	REFUhyb 50KH3 690P050
DC DATA - PV SIDE				
Max. recommended PV power (kWp)	38.8	39	52	65
Max. / Rated input Voltage (V)	1000 / 600			
MPPT voltage range (V)	135 – 900			
Number of MPPTs (DC inputs per MPPT)	3 (2)		4 (2)	
Imax. / Isc. Current per MPPT (A)	40/40/40 – 50/50/50		40/40/40/40 – 50/50/50/50	
DC connector type	MC4			
DC DATA - BATTERY SIDE				
Max. Charge / Discharge current (A)	150 / 150			
Number of battery inputs	3			
Max. Charge / Discharge power (kW)	29,9/32,8	30 / 33	40 / 44	50 / 55
Battery voltage range (V)	135 – 800			
AC DATA – GRID SIDE				
Max. input power [charging + load] (kW)**	59.8	60	80	100
Rated output power (kW)	29.9	30	40	50
Rated output current (A)	43.3	43.5	58	72.5
Max. Input current (A)**	90.6	90.9	121.2	151.5
Nominal grid voltage / grid voltage range (V)	3P/N/PE , 220(380), 230(400), 240(415) / 180~300			
Nominal frequency (frequency range) (Hz)	50 (45 – 55) / 60 (55 – 65)			
Active power adjustable range (%)	0.....100%			
Adjustable power factor range***	1(0.8 inductive....0.8 capacitive)			
AC DATA – BACKUP LOAD SIDE				
Rated output power (kW)	29.9	30	40	50
Max. Output apparent power (kW)	32.8	33	44	55
Rated output current (A)	43.3	43.5	58	72.5
Max. output current for 85s (A)	58.9	59.1	78.8	98.5
Nominal voltage / voltage range (V)	3P/N/PE , 220(380), 230(400), 240(415) / 200~253			
Nominal frequency (frequency range) (Hz)	50 (45 – 55) / 60 (55 – 65)			
Total harmonic distortion (%)	<3*			
Changeover time (grid – backup – grid) (ms)	<10			
PERFORMANCE				
Max. / EU / MPPT Efficiency (%)	97.6 / 97 / 99.9			
COMMUNICATION*				
RS485 / USB / CAN	yes / yes / yes			
PROTECTION				
PV input DC switch	Integrated			
Safety protections	DC reverse polarity (PV, Battery), insulation resistor detection, leakage current monitoring, short circuit, output over current, grid monitoring, anti-islanding			
PV monitoring	MPPT level			
Over voltage category / SPD(DC/AC)	3 / DC: Type II / AC: Type II			
GENERAL DATA				
Environmental operating conditions	**Temp(°C):** -30 ... +60 (> 45 derating) ; **Humidity (%):** 0...100 ; **Latitude:** 3000 m			
Dimensions (HxWxD) (mm)	704 X 590 X 290			
Weight(kg)	80			
Enclosure mechanical properties	**Ingress protection:** IP66 / **Cooling:** Active			
Self consumption at night (W)	≤80			
Display / Indications	LED			
Warranty	10 Years			
COMPLIANCE & STANDARDS				
Safety regulations	IEC 62109-1/2			
Grid code compliance	G98/G99, EN 50549/50438, CEI 0-21, AS 4777.2, VDE 4105/0126, RD1699/661/413/244/2019, UNE 206006/206007, NTS Type A, UNE 217002/217001			
Others	EN 61000-6-1/2/3/4			

*THD with Liner load.
***Will change based on country grid code.
*Inverter can communicate with REFUview monitoring portal.
**Max input power and max input current refers to current handling capacity of the inverter to charge the battery and supply critical loads simultaneously.

All technical data mentioned are subject to change without any prior notice. REFU does not assume any liabilities for errors or omissions due to country specific deviations etc. for latest data please contact, REFU Elektronik GmbH | Marktstraße 185 | 72793 Pfullingen | Germany | Tel. +49 7121 145 1888 | info@refu.com | www.refu.com