

RQ-30 ADMS

Contact-free Discharge Measurement System



The RQ-30 ADMS is an all-in-one discharge measurement system, suitable for spot-measurements, temporary applications or stationary long-term installations. It contains the contact-free flow velocity and water level sensors of the RQ-30, Data logger and batteries and applies the same algorithms to compute the water discharge.

The rechargeable batteries allow autonomous operation for several weeks and the integrated charge controller provides for the connection of a solar panel. The data logger of the RQ-30 ADMS offers wireless data transmission up to 4 FTP/FTPS/HTTP/HTTPS servers.

In that way the user can receive the latest data online. The RQ-30 ADMS supports the capability of remotely accessing both its data logger and sensor via mobile internet. This functionality offers a time-saving and convenient solution, enabling users to configure and adjust the RQ-30 sensor and data logger from everywhere.

The RQ-30 ADMS is a complete hydrological station all in one small and convenient housing. It is suitable for long-term measurements with solar power supply as well as autonomous temporary measurement campaigns, powered by battery.



FEATURES

- Contact-free radar method prevents soiling and damage, no sensor maintenance
- Automatic discharge calculation based on hydraulic model with multiple dyn. k-factors.
- Sensor self check with status and error output.
- AI-based machine learning for compensation of environmental influences and early detection of errors.
- 3-point velocity calibration certificate.
- Advanced velocity diagnostics with spectrum display
- Discharge calculation inside the RQ-30 ADMS.
- Water level and velocity sensor, Data logger and batteries all combined in one weather and vandalism proof housing.



- Remote access via mobile internet to Data logger and RQ-30 sensor
- Sommer Messtechnik ANR: advanced noise reduction system

Versions

Art	Version
20786	RQ-30 Automatic discharge measurement system, 15m
20787	RQ-30 Automatic discharge measurement system, 35m

Scope of delivery

Qty	Art	Item
1	-	RQ-30 ADMS in the required version including MRL data logger and planar antenna
1	-	Manual and Q-Commander Software on USB stick
1	20181	RS-232 to USB converter cable with push-pull connector, 1.8 m
1	20629	RQ-30 ADMS/SQ-mobile charger

Accessories

Art	Accessory
10085*	Lead-acid battery LC-RA1212P, 12 VDC/12 Ah
20595	SOMCAM-2W
20629	RQ-30 ADMS/SQ-mobile charger

Art	Accessory
20989	Solar panel 50W with 60-mm tube mount and 5-m cable
22524	Universal extension box for cable extension
-	Radar velocity verifier

* The RQ-30 ADMS requires two batteries

Specifications

Physical and environmental	
Power supply	9...30 VDC; Reverse voltage protection, overvoltage protection Battery capacity 24 Ah/12 V; 20 W solar panel recommended for mid latitudes
Power consumption at 12 VDC	Standby approx. 3 mA Active measurement approx. 120 mA (default 30 sec)
Operating temperature	-40...85 °C (-40...185 °F)
Storage temperature	-40...85 °C (-40...185 °F)
Relative humidity	0...100 %
Protection rating	IP 66
Lightning protection	Integrated protection against indirect lightning with a discharge capacity of 0.6 kW Ppp
Housing material	Powder coated aluminum, vandalism-proof
Mounting bracket	Ø34...48 mm
Size L x W x H	430 x 202 x 419 mm (16.93 x 7.95 x 16.50 in)
Weight	15.5 kg (34.17 lb) plus 7.4 kg (16.31 lb) lead acid batteries

Data logger and communication	
Memory	8 MB internal flash memory (equivalent to approx. 1.000.000 measurement values)
Mobile modem	2G, 4G 4 FTP/FTPS/HTTP/HTTPS servers Functions: IP call, DHCP, fixed IP, time-synchronization via NTP, please refer to datasheets of MRL-8.

Velocity	
Detectable measurement range	0.08...16 m/s practical range (depending on surface water waves) 0.01...20 m/s technical range
Accuracy	± 0.01 m/s (certified by METAS)
Resolution	1 mm/s
Direction recognition	+/-
Measurement duration	5...240 s
Measurement interval	8 s...5 h
Measurement frequency	24 GHz (K-Band)
Radar opening angle	12°
Distance to water surface	0.05...130 m (0.16...426.51 ft)
Noise reduction	Sommer Messtechnik ANR (advanced noise reduction) based on velocity spectrum analysis

Automatic vertical angle compensation	
Vertical inclination	Measured internally
Accuracy	± 1 °
Resolution	± 0.1 °

Water level measurement	15 m	35 m	75 m on request	120 m on request
Measurement range	0...15 m 49.2 ft.	0...35 m 114.8 ft.	0...75 m 246.1 ft.	0...120 m 393.7 ft.
Measurement frequency	80 GHz			
Resolution	1 mm			
Accuracy	± 2 mm			
Level sensor opening angle	8 °	≥ 3 °	≥ 3 °	≥ 3 °

Features	
Self check	Internal self check with code output for each measurement
AI Machine learning	Internal Machine learning for velocity and discharge, outputted with each measurement.
Hydraulic model	Dynamically and automatically calculated k-factors for discharge calculation
Data quality	Internal measurement quality value output with each measurement

