CODAN Syringe Pumps

A616S, A616S Plus
A616S *InCare,* A616S *TCI*

Fact Sheet

Version Mar 2021
For Firmware version 5.50

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Technical Data	Description	Remarks
Performance Data		
Product variants	A616S, A616S Plus, A616S *InCare*, and A616S *TCI*	
Dosing units	g, mg, µg, ng, IU, mmol	Per hour, minute, day, kilogramme
Infusion rate	0.1 to 1,500 ml/h	Steps of 0.1 ml/h, modification without infusion interruption
Infusion volume	0.1 to 999.9 ml/1,000 to 9,999 ml	Steps of 0.1 ml/steps of 1.0 ml
Infusion time	1 min to 99 h 59 min	Steps of 1 min
Programming	Rate in ml/h, volume in ml, duration in h and min	
Automatic rate calculation	On the basis of volume and time	
Bolus administration	Manually or automatically	With/without dose limit, limits via MED DB
Bolus rate	0.1 to 1,500 ml/h	
Bolus volume	0.1 to 50 ml	Depending on syringe size
Purging of the infusion line	0.1 to 1,500 ml/h	Depending on syringe size
	Purge max volume: 1.0 to 5.0 ml/h	See the service manual
Accuracy of delivery rate	±2% (at ≥ 1 ml/h)	With CODAN ARGUS qualified syringes (list on request)
(According to IEC 60601-2-24)	±5% (at ≥ 1 ml/h)	With customer qualified syringes
Error volume	0.5 to 1.2 ml	Depending on the syringe
Keep Vein Open (KVO) rate	Off or 0.1 to 5.0 ml/h	Configurable
Alarm PUMP UNUSED	Off or 1 to 60 min	Time until the alarm is triggered
History and Interface		
History and event log	Up to 1,000 events	With timestamp
Nurse call	Connection to the central system	All A616S variants. 24 V/0.2 A, configurable pulse, potential-free
RS-232 interface	Configuration interface	For use with ARGUS*service*
Communication interface	Connection to docking stations/via docking stations	Connection to Ethernet is possible (i.e. PDMS)
Ethernet and Wi-Fi	Health Level 7 (HL7), IHE Profiles: DEC, CT, SN	A616S Plus only, (Wi-Fi optional, cannot be retro-enabled)
Bluetooth	Secure 1 to 1 connection	For Patient ID scan.
Operation		
Display type	Monochrome LCD, 98.4 x 26.2 mm, 240 x 64 Pixel	Adjustable brightness
Night Mode	A feature to automatically dim the brightness of the device backlight and front panel LEDs.	Night Mode is not available in TCI infusion mode.
Display contents	Flow rate in units and ml/h, infused volume, target volume (VTBI), infusion time, remaining infusion time, battery capacity, pressure level, text and symbols for alarms and pre-alarms, medication name and medication setup, bolus delivery and information menu etc.	
Menu overview	Intuitive and configurable for specific applications	Available in 18 languages, an overview of infusion data
Menu configuration	By means of ARGUS*service* software/temporary settings by the operator	Client-specific configuration possible
Syringes	10 ml, 20 ml, 30 ml, 50/60 ml	Automatic identification of CODAN ARGUS approved syringes, permanent display of the syringe name
Infusion modes	**Standard operation**: adjustable infusion rate, infusion volume, infusion time	
	Dose calculation: infusion based on supported dosing units	Medication database (MED DB) is required
	TIVA (Total Intravenous Anaesthesia): patient weight (if applicable), induction dose (e.g. µg), induction time, maintenance rate (e.g. µg/h)	Medication database (MED DB) is required
	TCI (Target Controlled Infusion): medications, Remifentanil (Minto), and Propofol (Schnider); patient data: gender, age, height, weight	A616S Plus and A616S *TCI* only. Night Mode is not available in TCI infusion mode. TCI cannot be retro-enabled.
Safety		
Pressure release	Automatic pressure release after occlusion	
Alarms, pre-alarms	Visual and audible signals for rapid detection	
Alarm types	Syringe position, empty syringe, pressure too high, empty battery, syringe or battery almost empty, standby, limit exceeded etc.	
DEFI proof	Protection against electrical shock from a defibrillator	
Key lock	Activation/deactivation via numerical code	
Pressure limit for occlusion	200 to 1,200 mbar ±200 mbar (CODAN ARGUS qualified syringes)	Steps of 10 mbar
DERS: Medication database (Dose Error Reduction System)	MED DB for A616S, A616S Plus, A616S *InCare*, and A616S *TCI*	On request
Power Supply		
Battery	1,800 mAh, NiMH	Maintenance-free
Battery operation	9 hours at 5 ml/h, 8 hours at 10 and 25 ml/h	
	7 hours at 5 ml/h, 6.5 hours at 10 and 25 ml/h for the Plus variant	
Battery charging time	< 6 hours in standby mode (at room temperature)	
Mains power supply	100 to 240 V, 25 VA, 50 – 60 Hz	
Product Specification		
Dimensions	320 x 100 x 180 mm (W x L x D)	
Housing	ASA high-performance plastic	Including clamp for pole fixation, expandable for rails
Operating temperature	5°C to 40°C	
Temperature for storage	0°C to 40°C	
Temperature for transport	-20°C to 60°C	
Relative humidity	20% to 90% without condensation	
Atmospheric pressure	Operation:	750 to 1,060 mbar
	Storage and transport:	500 to 1,060 mbar
Weight with battery	2.0 kg	Including power supply unit
Maintenance	Safety Standard Check (SSC): every 24 months	Or after 10,000 operating hours
Compliance		
IP Code	IP22	Protection against ingress of solid foreign objects with a diameter of ≥ 12.5 mm, and ingress of water in a position with 15° inclination.
Wi-Fi and Bluetooth Frequency	Single band 2.4 GHz	
Protection class	II	Electric shock protection according to IEC 60601-1
Applied part type	CF	According to IEC 60601-1
MDD classification	IIb	
Electrical safety	IEC 60601-1, IEC 60601-2-24	
Electromagnetic compatibility	IEC 60601-1-2	
Usability	IEC 60601-1-6, IEC 62366	
Alarm systems/SW life cycle	IEC 60601-1-8, IEC 62304	
Accessories		
Docking stations	CODAN docking stations in 3 sizes for different combinations	Version M: PDMS link + power supply
		Version P: only power supply
Attachment system	Combination clamp	Suitable for pole and rail systems
Software	ARGUS*service*	Program for simple maintenance and configuration

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The decisive connection

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