



CODAN

Infusion technology systems

Innovative infusion therapy solutions



CODAN

Infusion technology systems

Overview of CODAN Syringe pumps

CODAN's user-friendly and precise pumps provide reliable and customisable solutions for everyday infusion therapy treatments in any ward.

Furthermore, the new connectivity technology in the Plus series significantly reduces costs and increases work efficiency by supporting the seamless transfer of patient linked infusion therapy data to a centralised Hospital Information System (HIS) via Wi-Fi or Ethernet.

CODAN A616S Plus - The connected syringe pump for anaesthesia, analgesia and general use



CODAN A616S Plus uses state-of-the-art technology by focusing on the efficient administration of infusion therapies that combines its renowned syringe pump characteristics, fast-reacting Target Controlled Infusion (TCI) algorithm and connectivity.



Ethernet Interface



Wi-Fi Interface*

TCI

Target Controlled Infusion*

* Optional

CODAN A616S - The essential syringe pump for general use

CODAN A616S focuses on the essentials of a reliable infusion. With its precise infusion rates, the syringe pump stands out for a dependable performance. Moreover, the high speed of infusion rates up to 1,500 ml/h likewise enhances patient safety as it allows a fast medication dosage to the patient, especially required in bolus mode.

In addition to the pump's intuitive operation, the automatic syringe detection of commonly used syringe brands simplifies everyday operation.



Overview of CODAN Volumetric infusion pumps

With our proven **Barcode Assisted Infusion (BAI)** technology, CODAN has brought patient and staff safety and the efficient administration of infusion therapies to a new level, especially for critical applications, such as in oncology. Furthermore, the new

connectivity technology in the Plus series significantly reduces costs and increases work efficiency by the seamless transfer of patient linked infusion therapy data to a centralised Hospital Information System (HIS) via Wi-Fi or Ethernet.

CODAN A717V Plus/A718V Plus - The connected volumetric infusion pumps for oncology and general use



CODAN A717V Plus and A718V Plus use state-of-the-art technology by focusing on the efficient administration of infusion therapies that combines its renowned volumetric infusion pump characteristics, innovative BAI workflow, safety package for critical treatments, and connectivity.



Ethernet Interface

Wi-Fi Interface*

Barcode Assisted Infusion (BAI)*

* Optional

CODAN A717V/A718V - The essential volumetric infusion pumps for general use

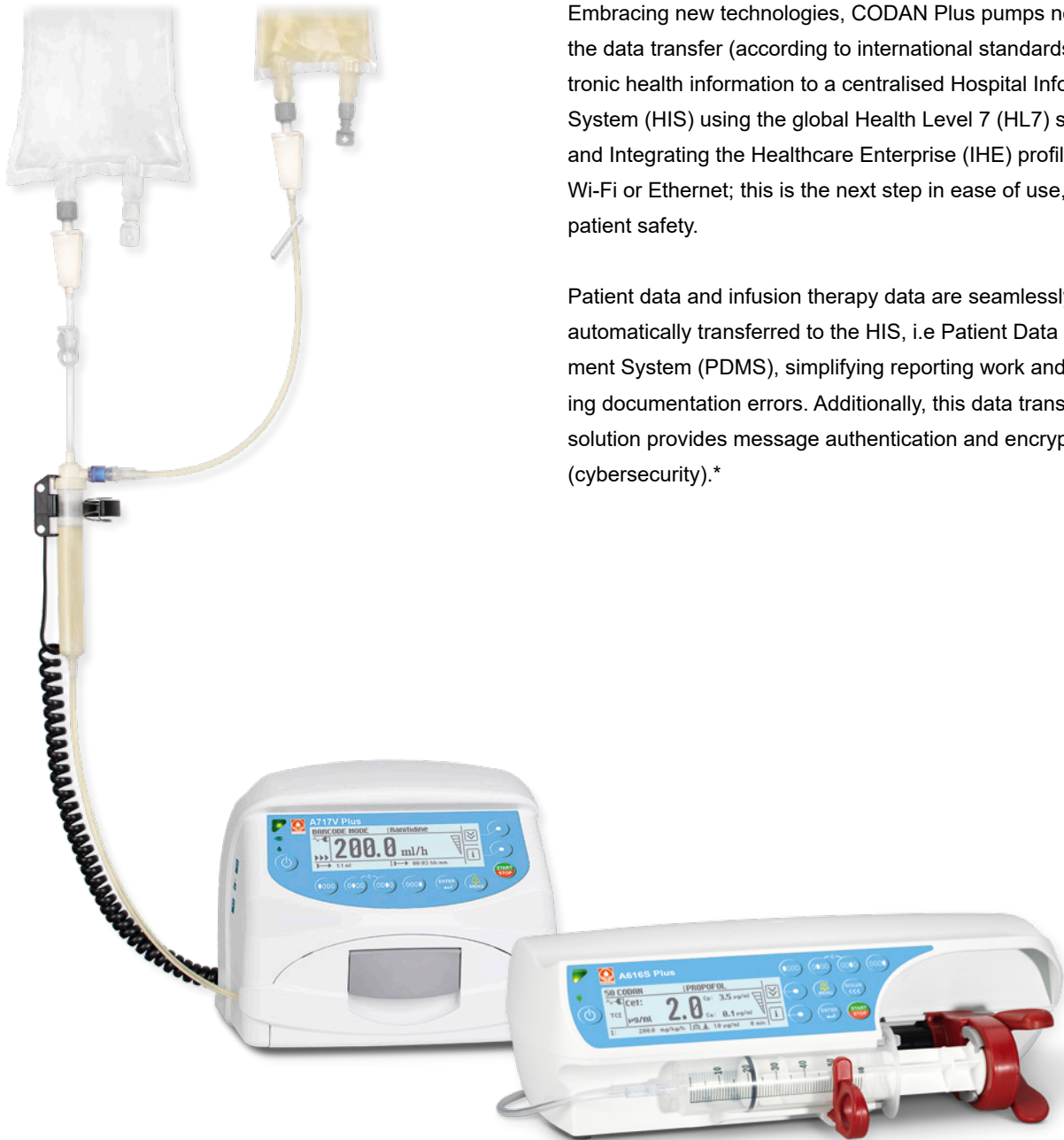
CODAN A717V and A718V stand out for reliable performance making them essential pumps for everyday use.

In addition to the pump's intuitive operation, the robust pumps are customisable according to individual needs by configuring up to four qualified infusion sets each with precisely defined air bubble sizes, the volume of accumulated air bubbles, pressure levels or bolus volume, all leading to enhanced patient safety.



** CODAN A718V Plus/A718V: for use with CODAN IVIP® dedicated infusion set with an Anti-Free-Flow clamp

CODAN's new Plus pumps



Embracing new technologies, CODAN Plus pumps now support the data transfer (according to international standards) of electronic health information to a centralised Hospital Information System (HIS) using the global Health Level 7 (HL7) standard and Integrating the Healthcare Enterprise (IHE) profiles via Wi-Fi or Ethernet; this is the next step in ease of use, and patient safety.

Patient data and infusion therapy data are seamlessly, and automatically transferred to the HIS, i.e Patient Data Management System (PDMS), simplifying reporting work and preventing documentation errors. Additionally, this data transmission solution provides message authentication and encryption (cybersecurity).*



Ethernet Interface

Standard pump features

- Fast and reliable data transmission
- Coherent, structured and encoded healthcare information through HL7/IHE



Wi-Fi Interface

Optional pump features

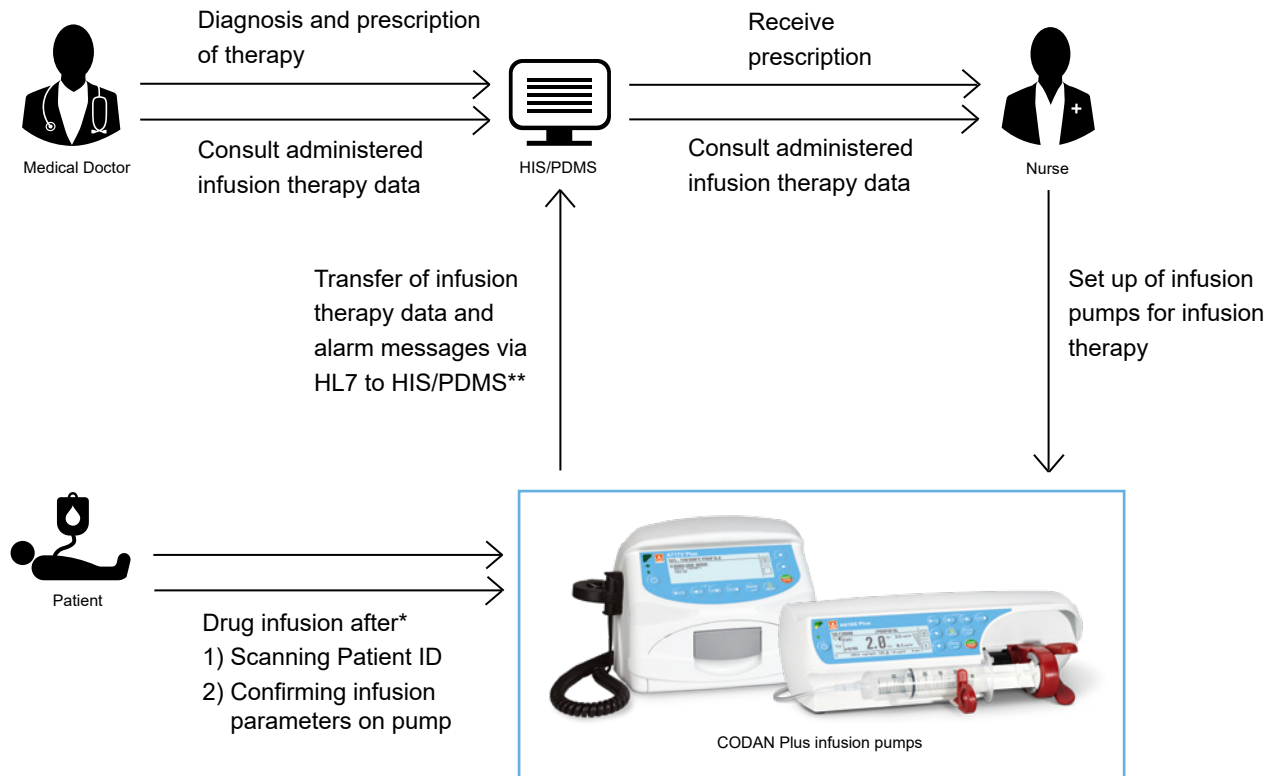
- Optimal pump operation and flexibility
- Enhanced space management in hospital room
- Coherent, structured and encoded healthcare information through HL7/IHE

* Requirement: for connectivity functionality, integration must be completed by the customer's PDMS supplier/integrator

Valuable connectivity workflow

Patient safety, ease of use and optimised workflow continues to be a key focus of CODAN and has been our design and development philosophy for our Plus pump series since the beginning.

Scan the Patient ID barcode, set up and start the infusion. During the infusion therapy the therapy data are seamlessly transferred to the Hospital Information System (HIS) either via Wi-Fi or Ethernet and automatically stored in the corresponding patient record.



* With BAI, Staff ID scan is optional

** Requirement: for connectivity functionality, integration must be completed by the customer's PDMS supplier/integrator

Connectivity workflow advantages at a glance

Enhances patient safety

- Electronic transfer of infusion data
 - Increases nursing time with the patient
 - Prevents documentation errors
 - Ensures traceability and accountability
- Scanning of Patient ID barcode
 - Ensures that administered infusion therapy automatically matches with the patient record in the HIS

Increases work efficiency and reduces costs

- Electronic transfer of infusion data
 - Ensures centralised up-to-date data accessibility
 - Reduces manual paper-based reporting to a minimum
 - Streamlines and accelerates nursing activities
- Industry standard HL7 protocol
 - Reduces integration efforts for the IT departments
- Optional wireless interface
 - Enhances space management in hospital room
- Data buffering during loss of connection

Innovative Barcode Assisted Infusion (BAI)

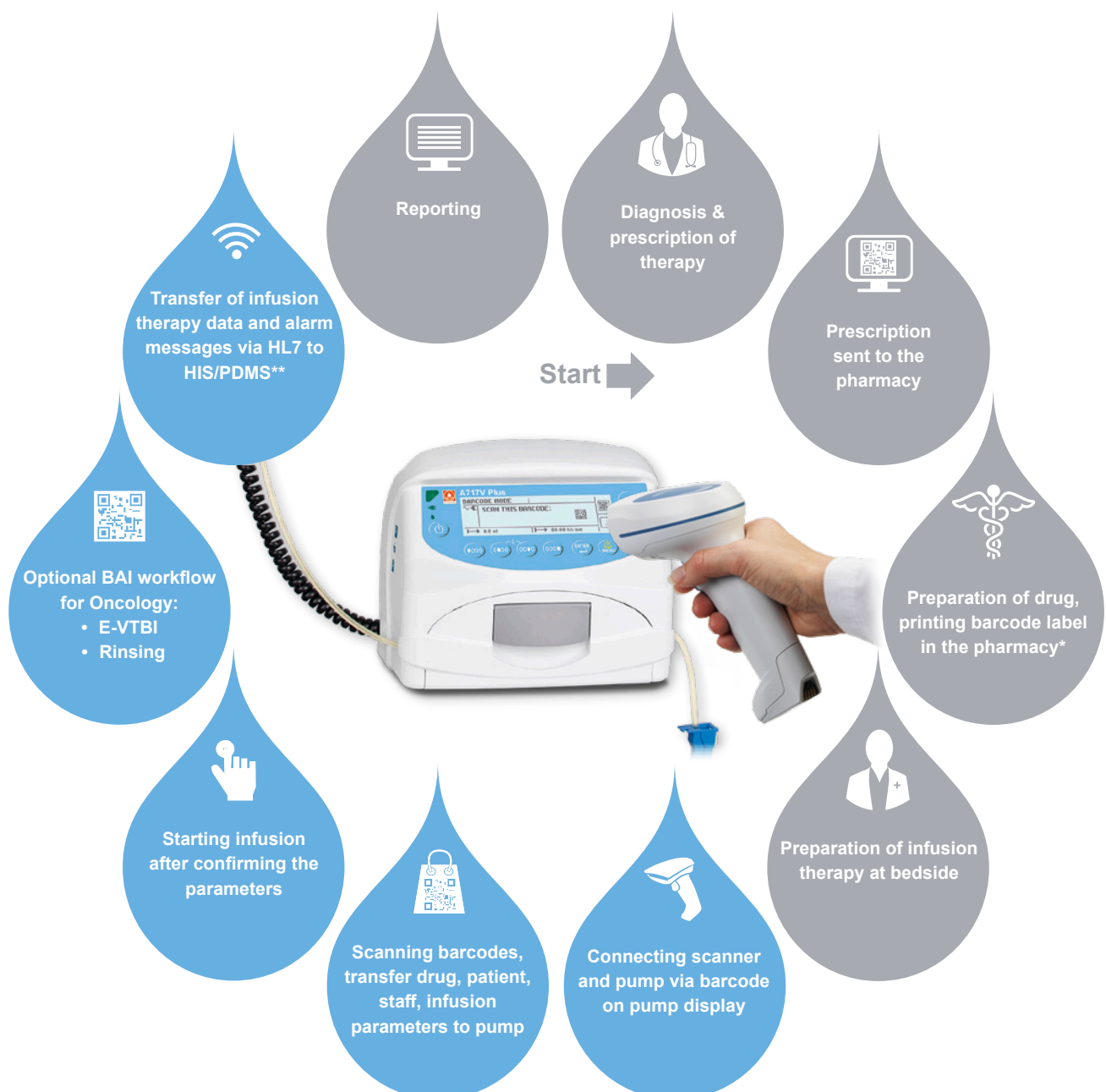
The BAI workflow from CODAN provides a very high level of user-friendliness and patient safety. Even though BAI can be easily integrated into any ward, the advantages are especially useful in critical situations, e.g. the handling of cytostatics for oncology treatments to assure that what is administered is:

- the right drug
- in the right dose
- to the right patient
- by the right medical personnel

By including the entire infusion therapy parameters into the barcode, BAI significantly reduces operating errors and work steps, resulting in higher work efficiency and reduces costs in all wards.

With the BAI workflow, it is possible to set up and start the infusion therapy in just a few seconds.

BAI - The safety package for infusion treatments



* Requirement: for printing barcode labels, the CODAN ARGUS barcode label specification must be integrated within the pharmacy software in use

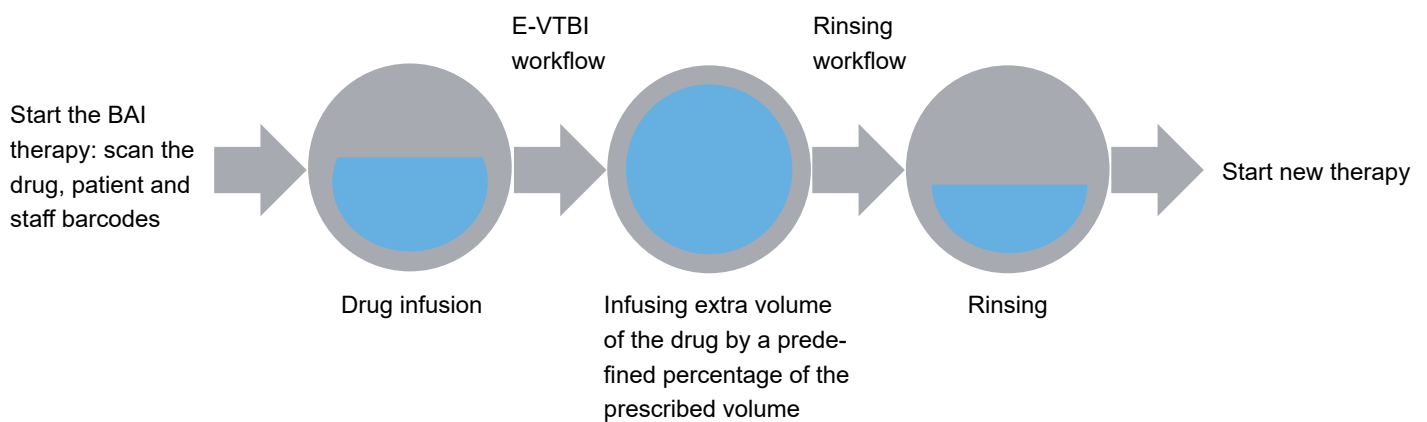
** Requirement: for connectivity functionality, integration must be completed by the customer's PDMS supplier/integrator

Intuitive BAI multidrug workflow for critical treatments, as in oncology

Especially infusion therapies with cytostatics for oncology treatments require the highest standards in precision and safety. BAI reduces the risk of operating errors almost to zero and ensures the highest level of patient safety possible.

This simple multidrug workflow ensures efficient and safe infusions thanks to the Extra Volume To Be Infused (E-VTBI) feature and rinsing cycles as well as the optional four eyes authentication possibility.

Example of a BAI multidrug workflow with E-VTBI and rinsing



E-VTBI

The E-VTBI workflow enables the efficient and precise administration of any remaining drug within the infusion container following normal infusion; the perfect solution for reducing cost and waste, when working with expensive drugs, such as cytostatics.

Rinsing

The two included rinsing workflows provide the possibility to easily and efficiently execute rinsing between drugs or at the end of the chemotherapy by using preset volumes; the smart solution that increases work efficiency.

BAI advantages at a glance

Enhances patient safety

- Right prescribed drug to the right patient (crosscheck of Patient ID)
- Prescribed drug dose with correct volume, time and rate
- Strict therapy approval process, staff and optional senior staff authentication
- Works independently of IT networks

Increases work efficiency and reduces costs

- Simple self-explanatory and guided BAI workflow during the entire scanning process
- Crosscheck with medical prescription: summarised therapy parameters before the start of infusion
- Faster drug administration
- E-VTBI possibility for emptying the infusion container
- Fast-rinsing possibilities between cytostatics
- Set up and start of infusion therapies within a few seconds

Efficient and intuitive BAI workflow

Simply complete each of the following steps to start an infusion therapy with the BAI workflow.



Step 1: Pairing

Turn on the pump, then select "BARCODE MODE" from the "SEL. THERAPY PROFILE" menu.

Now scan the barcode on the pump display, to pair the barcode scanner with the pump.

Step 2: Scan drug barcode

When scanning the drug barcode on the medication bag, the pump receives all the therapy parameters required for the correct application of the drug.

Therapy parameters on the medication bag include:

- Drug name
- Volume
- Rate
- Time
- Patient ID
- Staff ID and optional control staff



Step 3: Scan Patient barcode

By scanning the Patient barcode, it is ensured that the infusion therapy is administered to the right patient.



Step 4: Authentication of staff

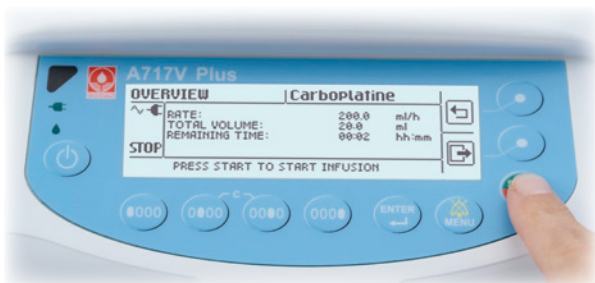
For authentication purposes, the Staff ID barcode must now be scanned.

For critical therapies, additional authentication by senior medical personnel may be required due to hospital safety standards.



Step 5: Confirm therapy setup

Now simply check all BAI therapy parameters displayed on the preview screen of the pump are correct before manually starting the infusion.



Additional infusion therapies

To set up a new infusion therapy (rinsing or drug), simply repeat the BAI workflow.



For more details, refer to the product user manual.

Fast, efficient and safe

A trained nurse can complete the five steps of the BAI workflow in just a few seconds.

Sophisticated TCI functionality for CODAN A616S Plus

The TCI functionality for the CODAN A616S Plus offers medical personnel in anaesthesia and analgesia the possibility to easily execute very reliable, precise and fast reacting Target Controlled Infusion therapies.

Developed in cooperation with Dr. Charles Minto (Australia) and Prof. Dr. Thomas Schnider (Switzerland), the CODAN A616S Plus allows precise control of infusion of Propofol (Schnider - PK Model) and Remifentanyl (Minto - PK Model).

Thanks to the powerful calculation algorithm, the pump reacts immediately to target concentration changes and automatically re-calculates the resulting infusion rates.

The response to user inputs such as stopping or pausing drug administration is instantaneous.

For both Propofol and Remifentanyl the TCI system can control either plasma concentration or effect site concentration, depending on the selected TCI mode.

CODAN A616S Plus with TCI workflow



Graphical display

- Forecast for current target concentration
- Decrement concentration

Supported medication concentrations in the syringe

- Propofol: 10 mg/ml (1 %), 20 mg/ml (2 %)
- Remifentanyl: 20 - 50 µg/ml

TCI Models

- Schnider Model for Propofol
- Minto Model for Remifentanyl

TCI Modes

- Effect mode
- Plasma mode

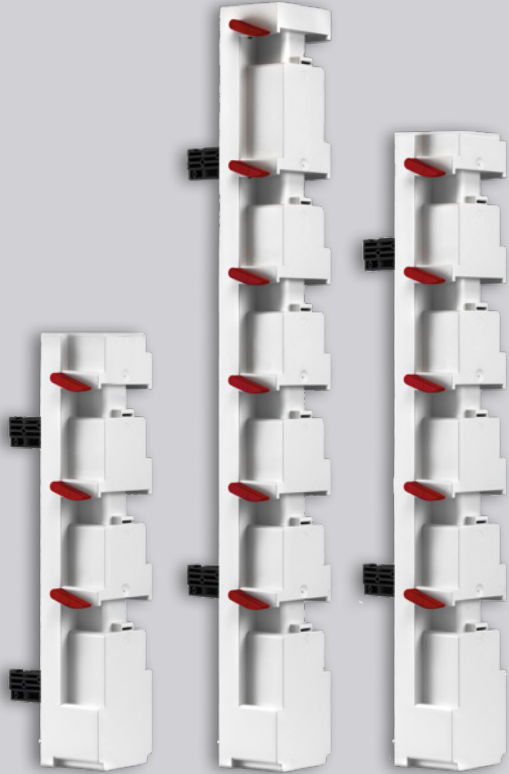
Supported patient parameters

- | | |
|-------------------------|--|
| • Age | 15 - 99 years |
| • Weight | 30 - 199 kg |
| • Height | 80 - 249 cm |
| • Body mass index (BMI) | Females: ≥ 10 and ≤ 35 ;
Males: ≥ 10 and ≤ 42 |

Options and accessories for CODAN Infusion pumps

From customer-specific medication databases, docking stations, robust infusion stands to an extensive selection of cables and medical transfer systems, we offer the entire range of

components and accessories required for the safe and convenient use of CODAN infusion pumps.



Pump options and accessories

- Customised medication database (MED DB)
 - Up to 256 drugs possible with safety limits and dose calculation
- Barcode scanner
- CODAN medical transfer systems, i.e. infusion sets and syringes
- Country and customer specific power cables
- Different installation possibilities of rail holder
- Two types of infusion stands
- Docking station variants in three sizes

Additional for CODAN Volumetric infusion pumps

- Coloured door handles
- Drop detector
- Bottle holder

For CODAN Syringe pumps

- Carrying handle for CODAN Syringe pumps

Superior service solution

As the manufacturer of CODAN infusion pumps, we are not only responsible for providing technical services; we are dedicated to supporting our customers in all technical areas.

Our experienced service team offers fast, high-quality, preventive and corrective maintenance solutions. Worldwide, only CODAN certified service partners represent our idea of service. In addition, we also offer modular technical training programmes to our customers.

Please contact your local CODAN representative for more detailed information.

Service portfolio

- Safety Standard Check
- Electrical Safety Inspection
- Firmware and security updates
- Calibration services
- Maintenance and repair services
- Complete documentation including customised maintenance management
- Warranty extensions
- Modular technical training

Worldwide trusted infusion therapy solutions

CODAN is specialised in the development, manufacturing and distribution of medical transfer systems.

CODAN products are specially designed to meet the requirements of critical care situations, where doctors and other

medical personnel bear the ultimate responsibility for ensuring patient survival. A broad range of products not only meets top quality and safety standards but also offers customised solutions to a large number of medical requirements.

Safe preparation and administration of cytostatics

CODAN CYTO® products have been specially developed for the reliable and safe preparation and administration of cytostatics. Together with CODAN Volumetric infusion pumps, this medical transfer system offers additional safety for patient and medical personnel.

CODAN CYTO®

Connect Z®

- Needle-free mixing adapter
- Connect Z® Clip: safe connection to the infusion bag
- ONCE-LOCK 2: not disconnectable connection
- The right solution for every drug (I.V.STAR® Filter, LIGHT-PROTECTED*, LIGHT-SAFE™*)

Cyto-Ad-Wing Z®

- Wing-Valve: easy and fast filling and priming of the closed system
- Complete administration
- Check Valves: avoidance of leaks and retrograde infusions
- The right solution for every therapy (LIGHT-PROTECTED*, LIGHT-SAFE™*)

CODAN A717V Plus/A718V Plus* with BAI

- Significantly reduce operating errors
- Enhance patient safety
- Increase work and cost efficiencies within wards



* Not shown in picture

Safe administration in anaesthesia and analgesia

Syringe pumps are increasingly central to the practice of anaesthesia by using pharmacokinetic models allowing the clinician to precisely infuse intravenous drugs. The primary purpose of this is to achieve a defined predicted target drug concentration in a specific body compartment or tissue of interest.

Syringe pumps with this Target Controlled Infusion (TCI) functionality in combination with specially developed infusion sets offer a reliable, safe and efficient solution for infusion therapies in anaesthesia and analgesia.

CODAN Total Intravenous Anaesthesia sets (TIVA)

Usually, the complex infusion sets for TIVA application consisting of single components like 3-way stopcock, manifolds, pump infusion lines, CODAN Check Valves, injection sites etc. are assembled by medical personnel prior to every anaesthesia. CODAN offers customer-specific ready-to-use TIVA sets that are assembled according to the anaesthetist's requirements in order to ensure optimal work processes.

Extension sets and accessories

The CODAN extension sets extend existing infusion systems, where required, to complete administration systems for application-specific requirements and can also be perfectly used together with other medical devices such as CODAN syringe pumps, 3-way stopcocks and manifolds as accessories. CODAN offers a wide product range for extension sets and accessories.

CODAN A616S Plus with TCI

CODAN A616S Plus with its fast-reacting and precise Target Controlled Infusion (TCI) algorithm and connectivity provides efficient and safe solutions for infusion therapies in anaesthesia and analgesia, especially in combination with CODAN TIVA sets and further extension sets and accessories.

For detailed information, please visit
www.codancompanies.com and www.codanargus.com.



Advantages CODAN Syringe pumps



A616S



A616S Plus

Various infusion profiles		
Standard therapy profiles	✓	✓
Medication database (MED DB)	✓*	✓*
TIVA	✓*	✓*
TCl	n.a.	✓optional
Multiple syringe sizes		
10 ml, 20 ml, 30 ml, 50/60 ml	✓	✓
Reliable performance***		
Infusion rate 0.1 to 1,500 ml/h	✓	✓
Accuracy $\pm 2\%$ (at ≥ 1 ml/h) with CODAN qualified syringes	✓	✓
Accuracy $\pm 5\%$ (at ≥ 1 ml/h) with customer qualified syringes	✓	✓
Bolus volume 0.1 to 50 ml	✓	✓**
KVO rate 0.1 to 5.0 ml/h	✓	✓**
Additional convenient features		
Manual and programmable bolus, Accumulated volume, Night mode, Recall function	✓	✓**
User-friendly product weight		
Weight with battery 2 kg	✓	✓
Communication interfaces		
Nurse call	✓	✓
Ethernet (HL7 Protocol)	n.a.	✓
Wi-Fi (HL7 Protocol)	n.a.	✓optional
Bluetooth (for Patient ID scan)	n.a.	✓

* Medication database required (see available pump options)

** Night mode, Bolus volume and KVO rate not available in TCl infusion mode

*** For more details, refer to the product fact sheet and user manual

Advantages CODAN Volumetric infusion pumps



A717V/A718V

A717V Plus/A718V Plus

Various infusion profiles		
Standard therapy profiles	✓	✓
Medication database (MED DB)	✓*	✓*
Barcode Assisted Infusion (BAI)	n.a.	✓ optional
Multiple infusion sets		
CODAN A717V/A717V Plus: for use with CODAN standard PVC (TOTM) tubing, green line® (PVC-free), LIGHT-SAFE™ (yellow tubing), LIGHT-PROTECTED (white tubing), green line® LIGHT-SAFE™ (PVC-free, yellow tubing) and other validated infusion sets with tubing of a diameter 3,0/4,1 mm (ID/OD) as a pump segment	✓ only A717V	✓ only A717V Plus
CODAN A718V/A718V Plus: for use with the IVIP® dedicated infusion sets equipped with an Anti-Free-Flow (AFF) clamp (compatible with the above stated tubing types)	✓ only A718V	✓ only A718V Plus
Reliable performance**		
Infusion rate 0.1 to 1,200 ml/h	✓	✓
Accuracy ±5 % with CODAN qualified administration sets	✓	✓
Bolus volume 0.1 to 999 ml/h	✓	✓
KVO rate 0.1 to 10 ml/h	✓	✓
Additional convenient features		
Fluid Balancing, Accumulated Volume, Night Mode, Recall function	✓	✓
User-friendly product weight		
Weight with battery 1.78 kg	✓	✓
Communication interfaces		
Nurse call	✓	✓
Ethernet (HL7 Protocol)	n.a.	✓
Wi-Fi (HL7 Protocol)	n.a.	✓ optional
Bluetooth (for Patient ID scan)	n.a.	✓
Bluetooth (for BAI)	n.a.	✓ optional

* Medication database required (see available options)

** For more details, refer to the product fact sheet and user manual

CODAN Worldwide

CODAN is known internationally as a manufacturer and supplier of medical transfer systems. The CODAN Companies have more than 1500 employees around the world.

The name CODAN is synonymous with reliability, quality and precision based on the know-how and experience gained from more than 60 years of research and development. Company-owned production facilities and sales companies around the world are a guarantee for efficient production, a tight-knit sales network and a first-class service for customers in the healthcare sector.



CODAN Companies

CODAN Medizinische Geräte GmbH · Deutschland
CODAN pvb Critical Care GmbH · Deutschland
CODAN pvb Medical GmbH · Deutschland
CODAN 11, S.A. · Portugal
CODAN US Corporation · California · USA
CODAN Inc. · California · USA
CODAN NORGE AS · Norge
CODAN TRIPLUS AB · Sverige
CODAN Limited · Great Britain
CODAN FRANCE Sarl · France
CODAN Medical AG · Schweiz
CODAN ARGUS AG · Schweiz
CODAN BV · Nederland
CODAN s.r.l. · Italia
CODAN Medical GmbH · Österreich
CODAN Medical ApS · Danmark
CODAN DEHA ApS · Danmark
CODAN MEDITECH s.r.o. · Česká republika

CODAN Product range

- Infusion sets
- Transfusion sets
- Extension lines and manifold connectors
- Infusion and transfusion accessories
- Infusion filters and filter systems
- Neonatology/Paediatric products
- Withdrawal, preparation and administration systems
- CODAN CYTO®
- Chemoprotect® products
- Single use syringes
- Invasive blood pressure monitoring systems
- Infusion pumps
- Other CODAN Products

Compliance of the established quality management systems with the provisions of EN ISO 13485 and the Council Directive 93/42/EEC has been certified by the relevant, competent notified bodies:

TÜV SÜD Product Service GmbH

CODAN Medizinische Geräte GmbH
23738 Lensahn, Germany

CODAN pvb Critical Care GmbH
85661 Forstinning, Germany

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CODAN ARGUS AG · 6340 Baar, Switzerland

Presafe Denmark A/S

CODAN Medical ApS · 4970 Rødby, Denmark

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The decisive connection