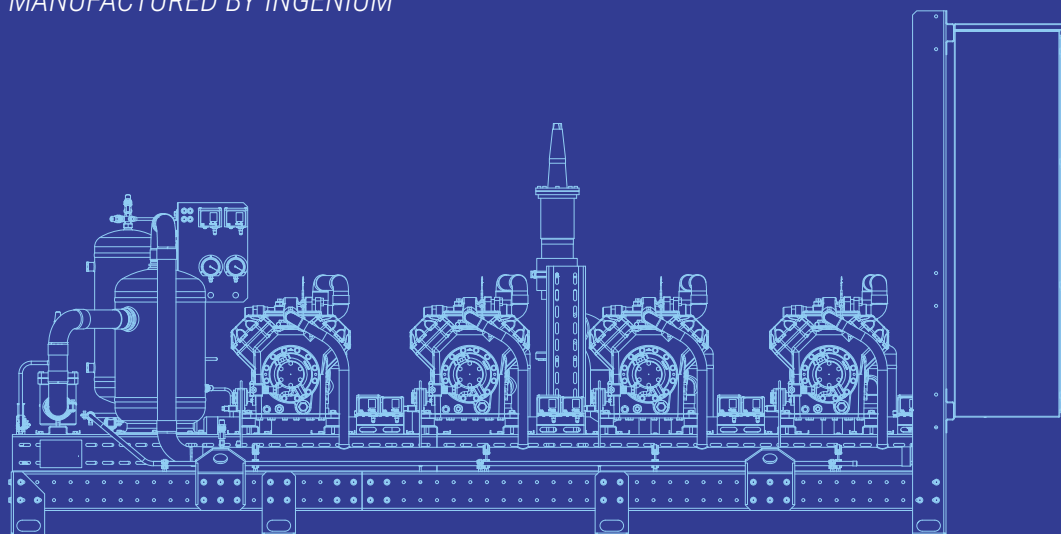


TECHNICAL CATALOGUE



PRODUCT CATALOGUE

MANUFACTURED BY INGENIUM™



I-CU series cooling units

Semi-hermetic piston compressor type
units with cooling capacity from 1 kW to 460 kW

Semi-hermetic screw compressor type
units with cooling capacity from 12 to 1710 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 228 kW

Compressor-condenser unit
cooling capacity from 3 to 1500 kW

Heat pump unit
with capacity from 3 to 1500 kW

I-CC series cooling units

Liquid cooling systems - chillers

Semi-hermetic screw compressor type
units with cooling capacity from 65 to 1600 kW

Semi-hermetic piston compressor type
units with cooling capacity from 1,5 to 460 kW

Hermetic scroll compressor type
units with cooling capacity from 2 to 150 kW

I-RU series receiver units

I-PU series pumping units

Cooling units are completed with the original INGENIUM control panels



The company conforms ISO-2015 QMS



INGENIUM™ equipment meets the EEU requirements

Field of Application

Food and Processing Industry

- edible food and food raw material process cooling and freezing
- food storage maintenance (meat, poultry, fish, milk, cheese, vegetable oil, beer, beverages, bread, confectionary products and etc.)
- vegetable and fruit long-term CA-storage maintenance (vegetable and fruit storehouse type implementation)
- handling and storage
- process air-conditioning of manufacturing areas

Chemical Industry

clean ethylene, propane, propylene content intake from petroleum and natural gas refinery, synthetic material and nitrogenous fertilizers industrial manufacturing

Construction

indoor climate control systems

Nuclear Industry

cooling units

Mining Industry

soil freezing in hole drilling process

Sports facilities

ice rinks and arenas, winter sports

Data processing centers

temperature control in enclosed space within desired limits

Logistics and Retail

low-temperature food storage facilities, distribution centers, wholesale distribution centers, supermarkets, industrial freezers and freezing chambers

Pharmaceutical Industry

Industrial freezing facilities in drug manufacturing

Metallurgical engineering

cooling systems in processing: wet blast furnace gas cleaning system

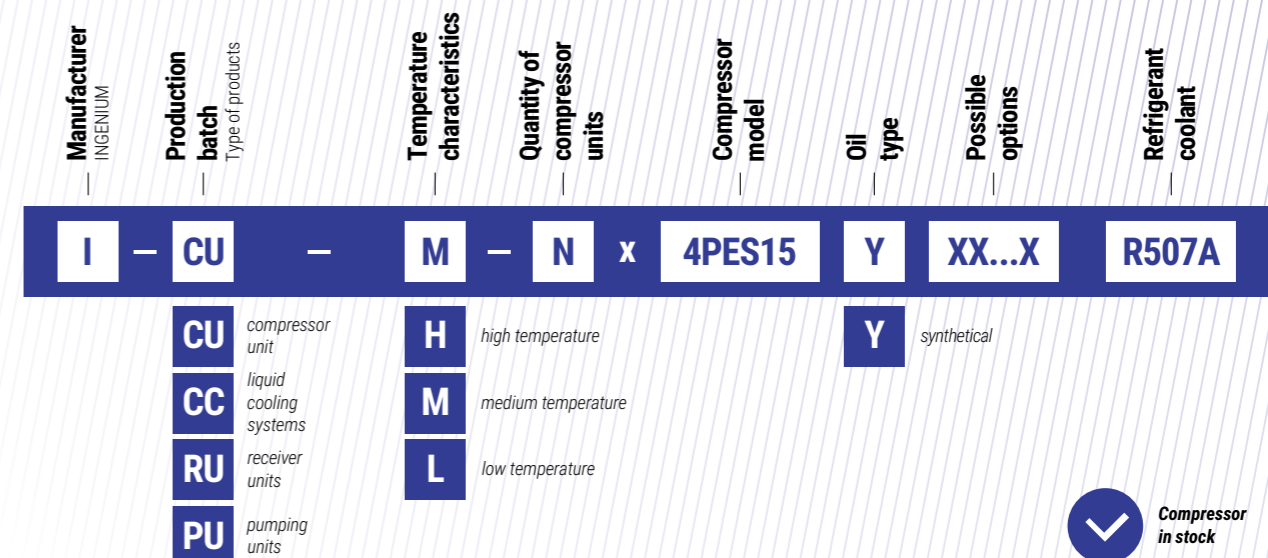
Plastic products

plastic and polymeric materials processing, PET manufacturing, PVC processing, PAP manufacturing, plastic window profile, packing units, cooling systems in injection molding machines and process extrusion lines processing, calender rollers and extruders operating

Shipbuilding Industry

cooling units for fishery products freezing and storage maintenance

Nomenclature



End-to-end options description

Option A – vibration dampers

- A1 – vibration isolators set for each compressor
- A2 – vibrating bearings set under frame-mounted compressor unit

Option B – economizer, liquid and steam injector

- B1 – mechanically controlled TEV economizer
- B2 – electronically controlled TEV economizer
- B3 – liquid injection system
- B4 – steam injection system

Option C – check valve

- C1 – discharge reinforced check valve for each compressor unit
- C2 – discharge line check valve following the oil separator

Option D – liquid level sensor

- D1 – refrigerant receiver LLS
- D2 – refrigerant receiver LLS
- D3 – oil receiver tank LLS
- D4 – oil receiver tank HLS
- D5 – oil separator chamber LLS

Option E – control panel

- E1 – control cabinet without controller. Suitable for units without capacity control options
- E2 – control cabinet with a controller for stepwise capacity regulation. Applies to options Q1 and Q2
- E5 – control cabinet with a controller for smooth performance control. Applies to option Q5

Option F – cylinder heads blowdown fan

Option H – hot gas delivery line for operating the consumers defrosting system

Option K – oil cooling set

- K1 – ODAF system
- K2 – thermosyphon-type oil cooling system
- K3 – liquid-type oil cooling system

Option L – heat insulated liquid separator on suction line for each compressor

Option M – high- and low-pressure gauge

Option O – oil separator chamber equipped with heater, shutoff valve, filter and inspection window

- O1 – oil level indication line equalization line
- O2 – oil level electrically controlled adjusters

Option P – high- and low-pressure switch on suction and discharge line manifold

- P1 – high pressure control switch for condensing fans cooling, single item
- P2 – high pressure control switch for condensing fan cooling, two items
- P3 – high pressure control switch for condensing fan cooling, three items

Option Q – capacity control

- Q1 – compressor capacity regulation per one cylinder block (50..100%)
- Q2 – compressor capacity regulation for two cylinder blocks (10..100%)
- Q3 – master compressor capacity control for three cylinders' modules
- Q4 – compressor capacity digital control
- Q5 – frequency control of compressor capacity
- Q6 – two master compressors' capacity frequency control unit

Option R – receiver module and liquid channel

- R1 – receiver unit equipped with shutoff valves, one relief damper, filter drain, inspection window and liquid flow line frame-mounted shutoff valve
- R2 – receiver unit equipped with shutoff valves, two relief dampers and three-way valve, as well as with filter drain, inspection window and liquid line frame-mounted shutoff valve
- R3 – two relief dampers with three-way valve mounted on refrigerant receiver

Option S – UV rays shielded insulation, IP55-compliant pressure switch protection, additional compressor crankcase heating

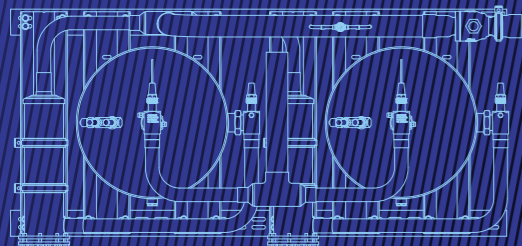
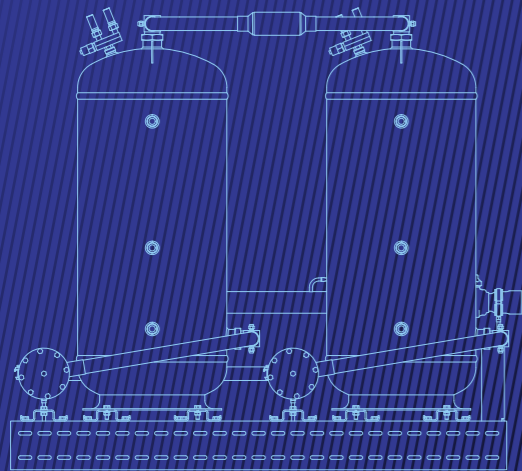
Option T – tubular electric heating element, heating

- T1 – refrigerant receiver heating system

Option V – shutoff valves set

Option W – condensing pressure control system for discharge line

Receiver units



Receiver units' item name

I-RU – 2 x 100 – T1



- 1. Unit type**
I-RU – Ingenium receiver unit
- 2. Receiver units' quantity**
No number marking in case of single item
- 3. Receiver volume**
In case of different units usage, the marking is indicated with " / "
- 4. Options**
refer to "End-to-end options description"

Receiver units

Standard item list

- Refrigerant receiver unit equipped with shutoff valves and relief damper, filter drained liquid flow line system, inspection window and output shutoff valve
- Painted metal frame
- Documentation set

Additional options

Item name	Marking
Receiver refrigerant LLS	D1
Receiver refrigerant HLS	D2
High-pressure gauge	M
Refrigerant receiver equipped with two relief three-way valve dampers	R3
Refrigerant receiver heating system	T1

Compressor units can be equipped with extra-standard items with additional options to be provided on request

Unit model	Overall dimensions, LxWxH, mm	Weight, kg	Refrigerant receiver volume, dm ³	Condensing unit drain line, mm	Liquid flow line, mm
I-RU-25	700x500x850	30	25	12	12
I-RU-35	700x500x1100	36	35	12	12
I-RU-40	700x500x1200	39	40	16	16
I-RU-50	750x740x1025	70	50	22	22
I-RU-60	750x740x1170	77	60	28	28
I-RU-80	750x740x1410	86	80	28	28
I-RU-100	750x740x1590	94	100	35	35
I-RU-120	750x740x1850	103	120	35	35
I-RU-160	770x740x1420	142	160	42	42
I-RU-200	790x740x1720	160	200	54	54
I-RU-250	790x740x1875	170	250	54	54
I-RU-2x160	1620x740x1420	270	320	67	67
I-RU-2x200	1620x740x1720	310	400	67	67
I-RU-2x250	1620x740x1880	325	500	80	80



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