HZP Desiccant Dryer

OPTION BOOK

Heated Blower Desiccant Dryer (HZP500 to HZP14900)

INDEX

How it works

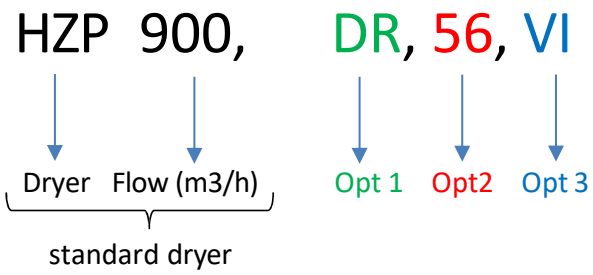
How the nomenclature works

The nomenclature is an abbreviation for an option described in this document. You can find the list of existing options and nomenclature correlation in page 2 of this document.
Each nomenclature refers to one single option. The options that have a nomenclature are described in the following pages in detail and cannot be changed in any respect. In case you need something different to the option described in any single aspect, the nomenclature should not be used and you should contact the Sales Enablement Team.

The Refrigerant dryer with options is made by the nomenclature of the standard dryer + the nomenclature of every single option you have included.

Please check the example below.

Example:



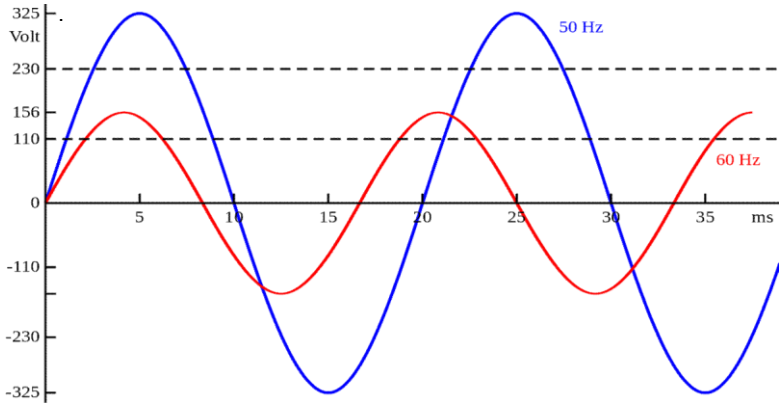
DR = 4-20 mA Output/remote dew point
56 = IP56 electrical rating plus stainless steel control box
VI = Tower insulati

Option Name	60 Hz Version	Nomenclature	60

Description

Components in electrical cabinet will be modified for 60 Hz.

Our standard dryers are 50 Hz but we also offer the option to get 60 Hz models. All the voltages are possible to be selected in HZP dryers please use "TB". ie 690V/3/60Hz.



Option Name	Transformer Box	Nomenclature	TB

Description

Hankison Heatless model is able to work in the range [110 – 230 v / 1 /50-60Hz].

Hankison standard (HZP) Heated model is able to work in the range [360 -440 V/3/50 Hz].

HZP dryers are 50 Hz but we also offer the option to get 60 Hz models using option "60" page 6.

This option will include a Transformer box to meet customer power supply. Price will depend on the transformer size and customer voltage.

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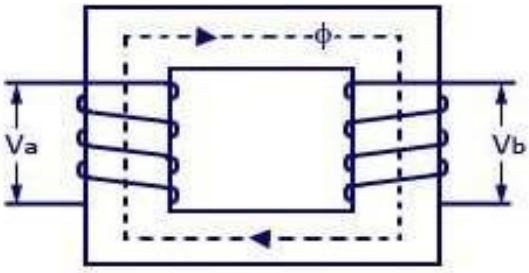


Option Name	4-20mA Output/remote dew point	Nomenclature	DR

Description

A 4-20mA output (Analog Data Transmitter installed) is available in Electrical Enclosure and it serves for remote readings of DEW POINT.

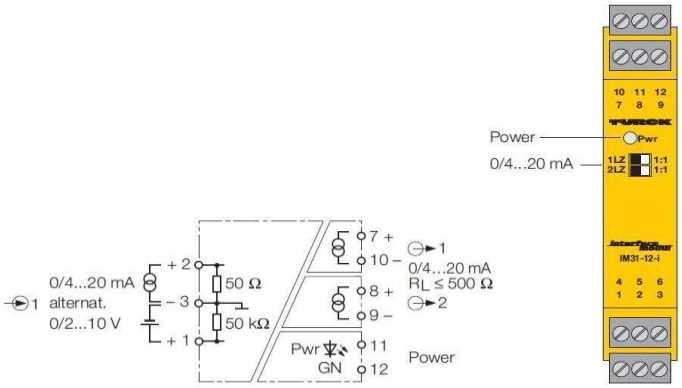
This option is possible only for Dryers with EMS function which is optional for D-IL dryers; HZP dryers includes the EMS as standard.

The dryer is equipped with transmitter installed in Electrical Enclosure which is connected with DEW point transmitter. The customer has the possibility to be connected with this Analog Data Transmitter to check DEW POINT values. (See Analog Data Transmitter on picture below - yellow device).

Output signal: 4-20 mA (2 wires) current source, configurable over the entire range of Dew Point -100°C to +20°C.
Includes: A signal transmitter (see picture) and the connection on the control panel.

Not included: The cable from the control panel to the customer's device & the Dew Point reading device. Cabling and reading device will

be supplied and installed by the customer.
If you need to order the "4-20mA Output/remote dew point" as an aftermarket component, you can use CPN23882160.



Option Name	IP56 electrical rating plus stainless steel control box	Nomenclature	DR

Description

IP 56 is Ingress Protection rating for electro technical Standardization according to NEMA IEC 60529. IP 56 is specifying the environmental protection the enclosure provides.

Customers have the option to order the IP56 (HZP) protection class of electrical enclosure which offers an additional protection. Option includes a stainless steel control box/enclosure - box painted black.

Standard Heated and Heatless dryers are equipped with an IP54 protection class and black painted electrical enclosure

IP54 electrical enclosure dimensions will be the same. There is no visual difference between them. The electrical enclosure is painted as default with black color.

See table below for the IP protection linked to both digits. ”A” & “B” IP”A” “B”.

“A”- Dust-protection ,
“B”- Liquid protection-jet streams: Water-jet streams which make contact with the enclosure from any direction must not have any damaging effect.

Option summary: Dryer will have black painted stainless steel control enclosure with IP56 There is no need to protect other devices as they are already well protected.

Option Name	2 Earth Connections on opposite sides of the Dryer	Nomenclature	EA

Description

The base of dryer is modified and two ground terminals are diagonally opposite situated in a way that works as a deviation.

Option Name	Liquid Filled Gaugexx	Nomenclature	LG

Description

All temperature gauges are replaced with liquid filled gauges.

Where vibration and pulsating conditions exist, the liquid filled pressure gauges are designed to meet the most severe applications. These gauges are more precise and resistant to higher pressures (vibrations).
Liquid filling: glycerin.

Includes: Gauges filled with glycerin - similar to the picture.

Prevents pointer to vibrate and get damaged – Higher resistance to vibration and shocks.

Take this option in case precision is very important or in the case of sudden increases in pressure or temperature to avoid damaging the pointer.

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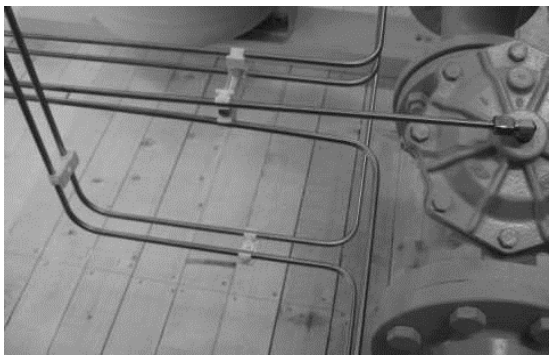
Option Name	Stainless steel Control Air Lines (ssL)	Nomenclature	SS

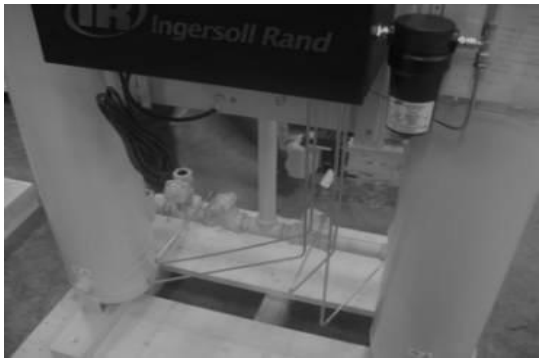
Description

Standard controlling of valves is established via plastic pipes. With this option, this plastic pipes are replaced with Stainless Steel pipes. Hankison offers the option to have stainless steel controlling tubes to protect them from corrosive environment where the plastic can be attacked or damaged.

Includes:
Tube material - Stainless Steel used: AiSi304 optional AiSi316.
Diameter of Stainless Steel tubes: 6mm (external) and 4mm (internal) The number of tubes depends on the machine model.

This option cannot be fitted after the dryer has been shipped out , as the tubes needs to be bent to fit the installation. Control lines updates must be realized by a technician.





Option Name	ANSI connection flanges	Nomenclature	AF

Description

INLET and OUTLET connection of dryer can be supplied with ANSI Flanges.

Our standard flanges are according to EN standard; if ANSI flanges are required, we can supply as per the table below.

ANSI flanges are different in terms of diameter, thread size and holes number. The pipe diameter is the only thing that remains the same.
Used flanges: from HZP500 to HZP2600 are NOT threaded. They are neck flanges with welded extensions which has tread on the end.

Includes:
ANSI flanges on inlet and outlet. Depends on the size of the dryer, the flanges might be welded or welded flange with threaded extensions. At dryers with standard flange connections, customer will receive ANSI adapters with this option (see pcs. A).

In some cases, the customer might require a bigger flange size than the standard one supplied. See the option than offers a conical adaptor (price higher that the standard ANSI flange).

Option Name	Galvanized vessels	Nomenclature	GV

Description

INLET and OUTLET connection of dryer can have different adaptors as connection.

Adapters can be different versions:

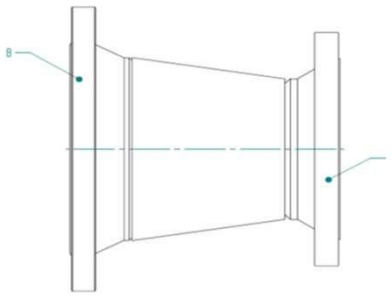
- Flanged adapters from EN to ANSI;
- reduced welded adaptors from smaller to bigger diameter or vice versa (including EN and ASME versions);
- adapters for flanges with different pressure nominal values (PN16 to PN40, ANSI class, 150 class 300…)

Includes:

- Adaptors described above;
- Screws, nuts and seals.

Some dryers will not have adaptors installed on inlet/outlet. Installation is on customer side. The flanges might be welded flange or welded flange with threaded extensions.

Please take a look at the dryer filters connections. Standard filters (shipped loose with dryer) have EN flanged connection with PN 40.



Option Name	Galvanized vessels	Nomenclature	GV

Description

Pressure vessels of dryer are galvanized with a layer of Zinc.

Galvanization refers to the coating of iron with Zinc. This is done to prevent galvanic corrosion (specifically rusting) of the ferrous item. In case of scratches through the zinc coating, the exposed steel will be cathodically protected by the surrounding zinc coating (extended maintenance-free of the painting).
Vessels are build with heat resistant pressure steel. The galvanization is done inside and outside and provides a longer lasting protection against scratches and corrosion. The vessels are supplied by the same supplier (standard vessels) but vessels are sent to a subcontractor who takes care of the galvanization.

Includes galvanized pressure vessels. The manifolds, piping etc. are not galvanized.

NOTE:

- The thickness of the vessels remains unchanged;
- Our dryers are sized to dry the air without any residual water falling to the bottom of the towers.

Option Name	Galvanized manifolds	Nomenclature	GM

Description

Galvanized manifolds.

Depending on the dryer model manifolds vary in size. Manifolds are made from pipe fittings or welded fittings or mix of them.

IF the manifold are welded then they are sent to a subcontractor who galvanizes the manifolds. The galvanization is done inside and outside and provides a longer lasting protection against scratches and corrosion.

Threaded manifold fittings are already galvanized and so are pipes.

NOTE:
The heater housing on HZP dryer models is not galvanized. Connection piping between blower and heater can be galvanized too .
The option galvanized manifolds includes galvanized pipes and fittings on manifolds. The valves on manifolds are the same as on a standard manifold.

Option Name	Skid for two dryers	Nomenclature	SKID

Description

Special skid with installed one or more dryers and filters.

This option allows installing 2 dryers side-by-side and includes platform and connections (installation example attached).
The machines are therefore “pre-installed” and easily transported (that will depend on the dimensions and weight of the package, in some instances, the side-by side installation will be done on-site (see below for limitations).

Includes:
Base, dryers (U profiles) , bypass (including 3 manual valves), piping connections (elbows, Tee's, flanges on the larger models) and other piping valves (exact number depends on project – might be manual or automatic at extra cost).

NOTE:
It allows to have 2 dryers connected and to be able to use them alternatively (for instance: back-up).

Option Name	Tower insulation	Nomenclature	VI

Description

Vessels are insulated with thermo insulating material.

The dryer must never be installed where air and/or ambient temperature exceeds 50°C or drops below 1°C.

Locate dryer to avoid extremes of heat and cold from ambient or other conditions. Where applicable, dryer towers may be insulated to reduce heat loses.

Maximum temperature reached by HZP dryer's surfaces: 70ºC for the vessel and 120ºC for the manifolds (test done after 1 to 2 hours of operation).

Includes:
- 50mm of Rockwool (see photo – internal material) and external 0.5mm aluminium sheet to cover the towers not the end caps

NOTE:
HZP dryers – for safety reasons as the temperatures of heated blower dryers can be quite high at certain stages of the cycle (see graphs in the sales library).

Option Name	Insulation for vessels + heater for electrical cabinet + heater for drain of the filters	Nomenclature	LT

Description

Insulated vessels + heater inside electrical cabinet + heater for JORC drain on the filters

Option suitable for ambient temperature from 1°C to -10°C for both HZP and Dryers.

Temperature "option LT" includes:

- The vessels insulation (as per VI option): mineral wool rock and external aluminium sheet to cover the towers - not the end caps;
- Electrical heater in the electrical enclosure;
- Electrical heaters in the filters drain.

NOTE:

- The performance of the dryers is not affected;
- The heater for the electrical cabinet is placed inside the cabinet.

Option Name	3V + bypass	Nomenclature	BY

Description

Bypass installed on inlet and outlet of dryer

The dryers can be supplied with a piping bypass that reroutes the air flow from the dryer. This gives the flexibility to reroute the air flow from the dryer to another dryer during maintenance or service without interrupting the flow of air (see below).

The standard bypass on models up to HZP2600 will bypass the filters and the dryers. Check the dual filtration bypass option in case filtration cannot be bypassed. (Option "DF")
For larger models, the standard option is only dryer bypass (no filter bypass).

Two available options if filter bypass is needed:

- Standard option: dual filtration;
- On request: bypass of the filters (no dual) - filters installation details to be provided or we provide a skid.

Includes (depending on the model):
- 3 manual butterfly valve or 3 manual ball valves, piping and fittings (see drawings) - no elbows;
- On special request and at extra cost, we could also provide an actuator.

NOTE:
Please check the connections at the end of this document. If the filters are shipped loose, the by-pass will be shipped loose as well.

Option Name	<80 db silencer	Nomenclature	80

Description

Additional mufflers fitted on dryer to achieve lower noise level.

Standard heatless dryers are equipped with silencers that give noise level just above 80 dBA. We also offer optional silencers that reduce the noise level to below 80dbA. The noise level is not constant and varies with the size of the dryer and the drying phases.

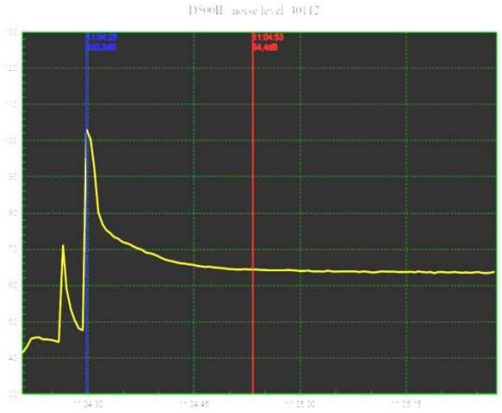
We guarantee a noise level of below 80dBA at normal working conditions.

The difference between standard version on left picture and 80 version of dryer on right picture is shown.

Includes:

- Instead of the standard silencers, Hankison will offer double or larger silencers (depending on the size of the dryer) that reduce the noise level below 80 dBA.

NOTE:
The tests are at our factory and at 1m distance from the dryer. This might be different depending on the size of the room or place where the machine will be installed.



Option Name	Marine painting	Nomenclature	MP

Description

Dryers are painted with a special paint called TEKNOZINC 50 SE.
NOTE: for preparation and protective coating ask manufacturer for OB22.4 and other color data sheets / documents.

Hankison offer two types of paints for the desiccant dryers.

1- STANDARD dryers paint specifications:

PAINT TYPE: TEKNODUR COMBI 3430 is a two pack anticorrosive pigmented polyurethane paint with low solvent content where the hardener used is an aliphatic isocyanate resin.
• USAGE: Used as a one layer paint. The paint can also be used as a top coat in Polyurethane Coating Systems. It is suitable for use on steel, zinc and aluminum surfaces. The paint can be used on several different types of substrates and on many well attached old paint surfaces.
• SPECIAL PROPERTIES: The paint produces a high gloss film with good mechanical and weather resistance. The use of TEKNODUR 0250 or TEKNODUR 0290 Polyurethane Varnish is recommended on objects when the topcoat is required to have excellent gloss and color retention. Version TEKNODUR COMBI 3430-09 comes up to the specifications of Swedish Standard SSG 1026-TB.

2- Optional dryers paint called MARINE PAINTING (outdoor/marine painting for harsh conditions):

• PAINT TYPE: TEKNOZINC 50 SE is a two-pack zinc rich epoxy paint, which besides zinc contains also other efficient anticorrosive pigments.

The Marine Paint includes:

The 2 vessels and the manifolds are MARINE painted only; filters already have a cataphoresis protection.
Catephoresis treatment: This is an electro-chemical undercoating and painting process that results in a powder coat-like finish. Bare metal frames are dipped in a special chemical bonding solution, resulting in a tough, black undercoat. An electrical charge is then applied to the undercoated frame, and a final metallic-gray powder paint finish is applied. The resulting finish is less susceptible to abrasion than paint and more resistant to chips than a traditional powder coat treatment.

There is another adder for marine painting on by-pass and dual filtration piping. This will be quoted on special request. For more information on this type of paint, please refer to the Sales Library: marine painting certificate and corrossions protection guide under Desiccant Dryers – Engineering Data
Include:

- Dryer pressure vessels and manifolds are MARINE painted,
- Certificate of marine painting is attached to documents.

Option Name	Special Color	Nomenclature	SC

Description

Customer has possibility to order different coated dryers.

NOTE:

- The standard procedure for painting would remain the same. Only change would be the color.
- If you want special color with Marine Paint protection C5, you need to select also option "MP" page 30.

Option Name	Export Boxing	Nomenclature	EB

Description

Option is no compatible with: ("SB")

HZP Desiccant dryers are shipped as shown on picture 1 below. Option EB gives customer possibility not to use standard packaging, but packaging with additional wood as shown on picture 2 below.

Picture 1

Picture 2

Including:
The standard packaging is a wooden pallet, wooden crane and plastic wrapping (see picture 1). For export box, the main difference is in the pallet: we use more robust wooden pallet and the wrapping remains unchanged (see picture 2).

The machines are therefore “pre-installed” and easily transported (that will depend on the dimensions and weight of the package, in some instances, the side-by side installation will be done on-site see below for limitations). For dryers with shipped loose filters and/or alumina there will be another export box for them as well.

Option Name	Seaworthy Packaging (Wooden Box with phytosanitary treatment)	Nomenclature	SB

Description

Option is no compatible with: ("EB")

Packaging for dyer HZP reinforced with extra pieces of wood and protected with PVC foil.
Dryer shrink wrapped in PVC foil with added desiccant.

The dryer is covered with PVC foil and tightly wrapped with stretch foil. A bag of desiccant is placed inside of the dryer to keep the inside of package moisture free. The dryer is completely closed from all sides. The wooden sides contain on inside a sheet of PVC foil to protect the dryer. Finally for extra protection the top of the box is covered whit PVC foil (see picture). In order to protect worldwide stocks of trees and forests, the International Plant Protection Committee (IPPC) has taken regulatory action to control the global movement of wooden packaging in the form of ISPM15 (phytosanitary customs and government regulations).
If you export wooden packaging that contains sawn timber, such as new or second-hand pallets, boxes, crates, cable drums etc. outside or into the EU you will be affected by these new regulations. The new regulations will apply to all arrivals at destination ports, airports etc. This means that all shipments will need to be treated approximately eight weeks before dispatch, depending on transit times. For dryers with shipped loose filters and/or alumina there will be another seaworthy box for them as well.

Option Name	Name plates in customize for the customer (language, data, stainless steel)	Nomenclature	NP

Description

Standard nameplates (see pictures below) are thermal transfer synthetic labels and are labeled on side of Electrical enclosure. With NP, we offer customer to have modified Stainless Steel nameplates instead of standard labels. All data on standard labels must be added to modified versions too – plus customer data if needed.

Including:

- The customized laser-printed name plates;
- nameplate material is Stainless steel;
- required PED97/23/EC data and possibility to add customers data too;
- nameplate dimensions 80x60x2;
- nameplates attached on side of electrical enclosure.

NOTE:
Please send the customers' needs (data to add).

Option Name	Witness functional test (in Slovenia)	Nomenclature	WT

Description

Manufacturer offers the visit from external person (customer) at manufacturer - Plurifilter (Logatec-Slovenia). Visit is mention for do an inspection of Desiccant dryer functionality, working, check documents…

The functional test we performed is not a 100% full flow functional test done at the requested operating pressure but rather a flow test checking all the different dryer devices and options.

For every machine we test the heater, blower, valves sequence, dew point meter and program). The machine is filled with air and we then test the mentioned items.

Please note that it is not possible to reach the requested dew point during the test as it may take a full day after start up to reach it.

The witness test needs to be planned well in advance, and needs to be included in the scope of supply (machine CPN description).

Includes:

- Startup of the dryer with the presents of customer external person and technician.
- Running the dryer performing tests and checks
- End of test completing -functional test procedure which is signed by customer
  Inspection of all requested

o Plurifilter d.o.o.
o Obrtna Cona 14, 1370 Logatec

Please note that you cannot witness both the vessels hydrostatic test (option HTW) and the functional test during a single visit as one is done prior to assembly and the second on is done once the dryer is assembled. You can witness either one or the other for the machine you ordered and the other one done on a different machine. Alternatively, you can plan 2 visits.

In case the customer cannot attend to the witness day, we can provide a video of the test.

Option Name	Hydrostatic Witness (in Slovenia)	Nomenclature	HTW

Description

HTW option gives customer possibility to be present at Pressure Vessels manufacturer during performing Hydrostatic Test. It is possible to 'send' 3rd party/external person or inspector to be present during test.

Hydrostatic test is one of final testing of pressure vessels according to standard for pressure vessels EN13445:5 and/or ASME Division VIII code.
Procedure of Hydrostatic Test depends on above two standards. Both Hydrostatic Test procedures are available in Sales Library.

Includes:

Visit from external person at producer of Pressure Vessels. External person is defined by customer. It is possible to give some proposal of Slovenian Notified Body – inspectors by Desiccant Dryer manufacturer.

NOTE:
Witness test need to be planned in advance and needs to be included in the scope of supply (machine CPN description). For visit is needed to define date of test. It is possible that HTW is performed in Italy or in Slovenia- depends on vessel type and other customer requirements. In case the customer cannot attend to the witness day, we can provide a video of the test.
Please note that HTW and WT option is not connected and cannot be performed in the same day/same visit. HTW is performed during manufacturing of pressure vessels, WT is performed as last functional testing of Desiccant dryer – see option WT.

Option Name	Witness functional test (VIDEO only)	Nomenclature	WT-VIDEO

Description

Functional test is performed by manufacturer of Desiccant Dryer as standard procedure. WT Inspection under Functional test procedure is made by internal Quality person of manufacturer – Plurifilter d.o.o.

Full Functional test is recorded, and all FAT documents are issued. Includes:

Includes video of Desiccant dryer functional test and all Factory Acceptance Test documents (Functional test report, Quality Check plan and Quality Check report). Witness test is performed in accordance to proper procedure. Inspection is established on pressurized Dryer to check working of heater, blower, valves sequence, dew point transmitter, PLC/program, cycle switching and other quality phases.

Full procedure with all inspected points is available on Library.

NOTE:
Witness test need to be planned in advance and needs to be included in the scope of supply (machine CPN description). Please note that 100% full flow functional test cannot be done at the requested operating pressure but rather a flow test checking all the different dryer devices.

It is not possible to reach the requested DEW point during the test as it take too long time after start up to reach it.

Option Name	Witness Hydrostatic test (VIDEO only)	Nomenclature	HTW-VIDEO

Description

Each Pressure Vessel is tested with Hydrostatic Test, according to procedure from standard EN13445:5. Advantage of this option is, that customer additional to the documents receives a video with video captured during Hydrostatic test procedure. Test is performed by manufacturer of Pressure Vessels.

Includes video of Hydrostatic test performed at manufacturer and standard documents for pressure vessels. See ITP for standard documents.

Video and documents are supplied to customer. Witnessed test is performed in accordance to proper procedure. Full Hydrostatic test procedure is available on Library.

NOTE:

Witness test need to be planned in advance and needs to be included in the scope of supply (machine CPN description).

Option Name	Quality control documents	Nomenclature	CQ

Description

Customer has, in additional to standard documents, possibility to receive all important documents about Desiccant Dryer. All documents are collected in Quality book. For better understanding, Quality book is separated on documents related to Desiccant Dryer assembly, Piping, Pressure Vessels and rest documents. For explanation of all standard and QC documents, please see ITP and OB26.

Includes quality book with all QC documents. Quality book is attached to the dryer in electronic version.

NOTE:

Because of too big file of Quality book (MB), documents attached to dryer are not in printed version. It is possible to send Book via communicator. Via outlook it is possible to send book only separated with few emails.

	First Release:22/07/2013	Rev: 01	Date: 11/11/2021

HZP SERIES DESICCANT DRIERS
Requested documents

Documents received with QC option

Desiccant Dryer assembly documents

- Declaration of conformity
- Installed Filter Declaration of conformity
- General Arrangement drawing
- Flow diagram
- Wiring diagram
- Quality check control list
- Quality control plan (assembly/manifolds production)
- Pressure test report

Pressure Vessels Documents

- Declaration of conformity
- Hydrostatic test report
- Material Certificate 3.1 - BOTTOM
- Material Certificate 3.1 - WALL
- Welding Procedure Specifications - **WPS**
- Welding Procedure Approval - **WPQR**
- NDT examinations report (RT&VT inspection)
- Welder Qualification Records / A-test
- Design calculation abstract

Piping system

- Pressure test report
- Material, welded fittings Certificates 3.1
  (Elbows, Tees, Flanges, Couplings, Seamless pipes…)
- Material, threaded fittings Certificates 3.1
- Welding Procedure Specifications - **WPS**
- Welding Procedure Approval - **WPQR**
- NDT examinations report, RT and visual inspection
- Welder Qualification Records / A-test

Other certificates

- Declaration of conformity - SAFETY VALVE
- Inspection certificate - SAFETY VALVE
- Declaration of conformity - DEW POINT TRANSMITTER
- Certificate of calibration - DEW POINT TRANSMITTER
- Declaration of conformity - PRESSURE GAUGES

Option Name	ASME VIII U-stamp for dryers vessels only	Nomenclature	AS

Description

The American code ASME VIII is used for design and certification of pressure vessels (Boiler & Pressure Vessel Code). It is similar as European EN - PED.

If only ASME VIII U-Stamp for vessels is acceptable, we can order ASME produced pressure vessels (U-stamped) and install them on dryers.

Desiccant Dryer has installed ASME U stamped pressure vessels. Customer receives U-1A manufacturer report for pressure vessels and all other required documents.

NOTE:

On Customer side is to ensure proper code for pressure vessels and its location in addition to country regulative where pressure vessels will be placed. Please check and order all required documents for pressure vessels in pricing and configuration sheet.

Option Name	ASME VIII design for dryers vessels – PED certificate	Nomenclature	ASPED

Description

Design of pressure vessels is in accordance to American code ASME Div. VIII . End certification is according to PED97/23/EC. Pressure vessels has PED EC declaration of conformity.

Includes:
Declaration of conformity of pressure vessels according to PED directive.

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Option Name	AD2000 Certification for Dryer vessel only	Nomenclature	AD2000

Description

Design of pressure vessels is in accordance to AD2000 certification is according to PED97/23/EC.

Includes:
Declaration of conformity of pressure vessels according to AD2000.

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