

CATALOGUE No. 1

Moisture meters FIZEPR-SW100 and microwave barrier for level SIUR-03V2 for bulk and paste-like materials

2022.03.16
(v.3.9)

Manufacturer: Design Bureau Fizelektronpribor, Ltd



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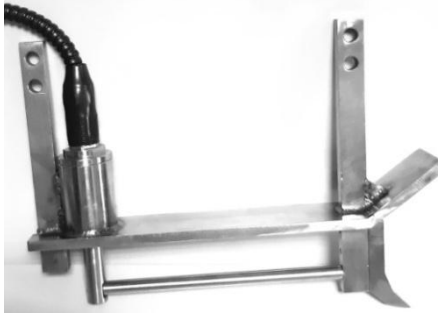
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Item No.	Description, design version	Application, materials controlled	Sensor design			
					General purpose industrial version	Explosion-proof version
Bulk material moisture analyzers (moisture meters) FIZEPR-SW100.10.x						
1	Moisture analyzer FIZEPR-SW100.10.6	Powdered, granular, bulk materials in a hopper or in-line on a conveyor belt (grain, sand, etc.). For materials with particle sizes up to 30 mm.		Sensor is made as a panel with a flat-topped probe mounted on it. 120 x 356 mm panel. Probe-to-panel clearance is 40 mm. Sensor material is AISI 321 stainless steel		
2	Moisture analyzer FIZEPR-SW100.10.21	Powdered, granular, bulk materials in a dryer, hopper or in-line on a conveyor belt (grain, sand, etc.) For materials with particle sizes up to 30 mm.		Sensor is made as a panel with a flat-topped probe mounted on it. 120 x 356 mm panel. An additional shielding conductor is placed on the panel parallel to the probe to eliminate any effects from metal items located near the sensor. Probe-to-panel clearance is 40 mm. Sensor material is AISI 321 steel.		

3	Moisture analyzer FIZEPR-SW100. 10.63	Powdered, granular and bulk materials in a mixer (silicate mixture, sand, etc.). For materials with particle sizes up to 30 mm.		Sensor is made as a panel with a flat-topped probe mounted on it. A 120 x 356 mm panel is made radially bent (radius to be specified when ordering). Probe-to-panel clearance is 40 mm. Sensor material is AISI 321 stainless steel.		
4	Moisture analyzer FIZEPR-SW100. 10.22	Powdered, granular and bulk materials in a mixer (silicate mixture, sand, etc.). For materials with particle sizes up to 30 mm.		Sensor is made as a panel with a flat-topped probe mounted on it. An additional shielding conductor is placed on the panel parallel to the probe to eliminate any effects from metal items located near the sensor. A 120 x 356 mm panel is made radially bent (radius to be specified when ordering). Probe-to-panel clearance is 40 mm. Sensor material is AISI 321 stainless steel.		
5	Moisture analyzer FIZEPR-SW100. 10.5	Bulk materials (crushed stone, sand, etc.) on a conveyor belt. For materials with particle sizes up to 30 ... 40 mm.		Flat-topped probe is made of AISI 321 wear-resistant stainless steel (or AISI 316Ti). Sensor is mounted above the conveyor belt in the material flow. The sensor shaped so that it creates minimum resistance to the flow. A "bucket" made of steel highly resistant to impacts and abrasion (ASTM A128 A (UNS J91109)) is mounted at the front of the sensor to loosen the material and completely fill the probe-to-panel clearance with the material.		





6	Moisture analyzer FIZEPR-SW100. 10.51	Bulk materials (sand) on a conveyor belt. For materials with particle sizes up to 30 ... 40 mm.		Flat-topped probe is made of AISI 321 wear-resistant stainless steel. Sensor is mounted above the conveyor belt in the material flow. The sensor shaped so that it creates minimum resistance to the flow.		
7	Moisture analyzer FIZEPR-SW100. 10.16	Bulk materials featuring high conductivity (coal, iron ore, salts, etc.), in a hopper or in a trough. For materials with particle sizes up to 30 ... 40 mm.		Sensor is made as a panel with a flat-topped probe mounted on it. Probe diameter is 14mm. Probe-to-panel clearance is 45 mm (sensor with up to 60 mm clearance is available on request). Probe is made of AISI 321 steel.		
8	Moisture analyzer FIZEPR-SW100. 10.166	Bulk materials featuring high conductivity (coal, iron ore, salts, etc.), in a hopper or in a trough. For materials with particle sizes up to 30 ... 40 mm. Sensor can be used for materials with a temperature of 120°C.		Sensor is made as a panel with a probe mounted on it. Probe is replaceable to enable its replacement in case of abrasion. Probe diameter is 18 mm. Probe material is ASTM 440B stainless steel subjected to heat treatment (hardening). Probe-to-panel clearance is 44 mm. Sensor housing is made of AISI 321 steel.	(with spare probe kit)	(with spare probe kit)





9	Moisture analyzer FIZEPR-SW100. 10.56	Bulk materials featuring high conductivity (coal, iron ore, salts, etc.), in-line on a conveyor belt. For materials with particle sizes up to 30 ... 40 mm.	 <p>Flat-topped probe is made of AISI 321 wear-resistant stainless steel (or AISI 316Ti). Sensor is mounted above the conveyor belt in the material flow. The sensor shaped so that it creates minimum resistance to the flow. Sensor probe is made of impact-resistant Hadfield steel ASTM A128 A (UNS J91109).</p>		
10	Moisture analyzer FIZEPR-SW100. 10.561	Bulk materials featuring high conductivity (coal, iron ore, salts, etc.), in-line on a conveyor belt. For materials with particle sizes up to 30 ... 40 mm.	 <p>Flat-topped probe is made of AISI 321 wear-resistant stainless steel (or AISI 316Ti). Sensor is mounted above the conveyor belt in the material flow. Sensor shaped so that it creates minimum resistance to the flow. Sensor probe is replaceable and made of ASTM 440B hardened stainless steel. In case of significant wear the sensor probe can be easily replaced with a spare kit.</p>	(with spare probe kit)	(with spare probe kit)
11	Moisture analyzer FIZEPR-SW100. 10.4	Bulk materials (sand, crushed stone, ore, grain, wood chips, etc.) in a hopper, dispenser, including materials that adhere on the hopper walls and probe. For materials with particle sizes up to 100 ... 150 mm.	  <p>Probe is made as a straight rod with a cross section of 27 mm, length up to 1.2 m, manufactured of AISI 321 stainless steel, with a set of AISI 1020 steel coupling holders</p>		

12	Moisture analyzer FIZEPR-SW100. 10.44	Bulk materials (sand, crushed stone, gravel, ore, grain, etc.) in a hopper, dispenser, including materials that adhere on the hopper walls and probe. For materials with particle sizes up to 150 mm.	 <p>Probe is made as a straight rod with a cross section of 27 mm, length up to 1.5 m, manufactured of AISI 321 stainless steel. Set of coupling holders is made of AISI 1020 steel.</p>		
13	Moisture analyzer FIZEPR-SW100. 10.441	Bulk materials (sand, crushed stone, gravel, ore, grain, etc.) in a hopper, dispenser, including materials that adhere on the hopper walls and probe. For materials with particle sizes up to 150 mm.	 <p>Probe is made as a straight rod with a cross section of 27 mm, length up to 2 m, manufactured of AISI 321 stainless steel. Set of coupling holders is made of AISI 1020 steel.</p>		
14	Moisture analyzer FIZEPR-SW100. 10.41	Powdered, granular, bulk materials in a hopper, pipe or trough including sawdust, wood chips, wafers, grain , etc.	 <p>Probe is made as a straight rod with a diameter of 14 mm, length up to 0.6 m, manufactured of AISI 321 stainless steel, with a set of AISI 321 steel coupling holders.</p>		
15	Moisture analyzer FIZEPR-SW100. 10.411	Powdered, granular, bulk materials in a hopper, pipe or trough including sawdust, wood chips, wafers, grain , etc. Moisture meter can be used for materials with a temperature of 180°C.	 <p>Sensor contains a straight rod (probe) with a diameter of 20 mm and length up to 1.0 m. Sensor probe and a set of coupling holders are made of AISI 321 steel. Sensor electronic unit (measuring cell) is located outside coupling holders.</p>		


16	Moisture analyzer FIZEPR-SW100. 10.46	Bulk materials (coal including anthracite, iron ore and other materials) featuring high conductivity including those adhering to hopper walls and the probe. For lump materials with particle sizes up to 100 mm.	 <p>Probe is made as a straight rod with a cross section of 32 mm, length up to 1 m. Sensor is made completely of AISI 321 stainless steel.</p>		
17	Moisture analyzer FIZEPR-SW100. 10.461	Bulk materials (coal including anthracite, iron ore and other materials) featuring high conductivity including those adhering to hopper walls and the probe. For lump materials with particle sizes up to 150 mm.	 <p>Probe is made as a straight rod with a cross section of 32 mm, length up to 1.5 m. Sensor is made completely of AISI 321 stainless steel.</p>		
18	Moisture analyzer FIZEPR-SW100. 10.43	Bulk materials (wood chip waste, sawdust, pulp, etc.) in a screw.	 <p>made completely of AISI 321 stainless steel.</p>	Probe is made as a radially bent rod with a diameter of 14 mm. It is bent along the screw diameter to be specified when ordering. Sensor is	

Moisture analyzers (moisture meters) FIZEPR-SW100.11.x / 12 universal


19	Moisture analyzer FIZEPR-SW100.11.32	Powdered, granular and bulk materials in a hopper, mixer, as well as liquid materials (e.g. sludge) in a tank, trough It can be used to measure bulk materials in storage pits		Sensor with a two-pinned probe. Housing is equipped with G1 thread nozzle. It is fixed permanently on a 1" pipe and can also be attached directly to the hopper wall.		
20	Moisture analyzer FIZEPR-SW100.11.33	Powdered and granular bulk and paste-like materials (e.g. silicate mixture) on a conveyor belt, as well as liquid materials (e.g. sludge) in a tank, trough		Sensor with a two-pinned bent probe. Housing is equipped with G1 thread nozzle. It is fixed permanently on a 1" pipe		
21	Moisture analyzer FIZEPR-SW100.11.4	Liquid and bulk materials in hoppers, tanks. The moisture meter can also be used for soil moisture control		Immersion sensor with a two-pinned probe. Probe is equipped with a tip to immerse the sensor in a dense controlled material. Housing is equipped with a G1 thread nozzle. It is fixed permanently on a 1" pipe.		
22	Moisture analyzer FIZEPR-SW100.11.41	Grain and other bulk materials, as well as paste-like and liquid products. In the 11.411 version it can be used in boiling tanks with a temperature up to 180°C and pressure up to 6 atm.		Immersion sensor with a two-pinned probe. Ø10 mm probe pins are made as a fork and have a length of 160 mm. Housing is equipped with a G1 thread nozzle for sensor attachment to a 1" pipe.		
22.1	11.411		Version 11.411 is designed for boiling tank applications.			

22.2	Moisture analyzer FIZEPR-SW100. 11.412	Grain and other bulk materials, as well as paste-like products in hoppers		Immersion sensor FIZEPR-SW100.11.41 equipped with attachment fittings for mounting on tank, hopper walls.		
23	Moisture analyzer FIZEPR-SW100. 11.6	Paste-like and liquid materials featuring high conductivity located in troughs and tanks including sewage sludge, ion-exchange resin, etc.		Immersion sensor with a two-pinned probe. Housing is equipped with a G1 thread nozzle and can be attached to a 1" pipe.		
24	Moisture analyzer FIZEPR-SW100. 12	Paste-like and liquid materials in troughs and tanks including sludge, diesel oil emulsion, etc.		Probe sensor contains a center pin and 4 perimeter-wise pins. Sensor material is AISI 321 stainless steel. Sensor housing has G2 thread, but it can also be attached to a G1 thread nozzle. Sensor is installed inside a tank and fixed to a 1" or 2" pipe.		
25	Moisture analyzer FIZEPR-SW100. 12.16 (21.16)	Paste-like and liquid materials featuring high conductivity located in troughs and tanks including sewage sludge, ion-exchange resin, etc.		Probe sensor contains a center pin and 4 perimeter-wise pins. Sensor material is AISI 321 stainless steel. Sensor comprises a flange for mounting on tank walls.		

Moisture analyzers (moisture meters) FIZEPR-SW100.14.x for measurements in boilers, piles, as well as for soil moisture measurement

26	Moisture analyzer FIZEPR-SW100.14.1	Bulk materials, as well as paste-like and liquid materials. It can be used for soil moisture measurement. Version 14.11 is designed for boiling tank applications with a temperature up to 180°C at pressures up to 6 atm.	 <p>Sensor contains a Ø24 mm diameter probe, has a length up to 600 mm and is made of AISI 321 stainless steel.</p> <p>Version 14.11 is designed for applications with extreme temperatures and pressures up to 6 atm.</p>		
26.1	14.11				




Moisture analyzers (moisture meters) FIZEPR-SW100.16.x for bulk, paste-like and liquid materials

27	Moisture analyzer FIZEPR-SW100.16.1	Water and sand pulp, slack and other liquid, paste-like, and bulk materials in tanks and pipelines with a diameter of at least 200 mm, working pressure – up to 10 atm.	 <p>In-line probe sensor with one Ø16 mm pin 150 mm in length installed along the pipeline diameter. Attachment - to a nozzle with a flange welded to a pipeline, tank wall. Sensor housing and probe are made of AISI 321 stainless steel. For water and sand pulp and sand flow applications the probe is made of ASTM 440B hardened stainless steel.</p>		
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**Moisture analyzers (moisture meters) FIZEPR-SW100.17.x
for concrete mixture, coal and other bulk and paste-like materials**


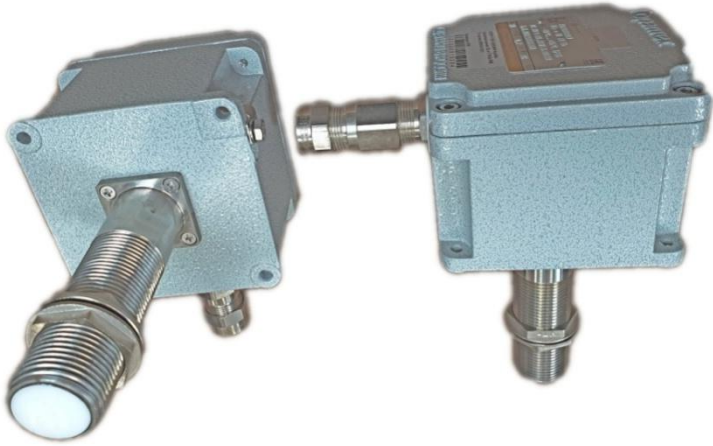
28	Moisture analyzer FIZEPR-SW100.17.1	Control of water content in concrete mixture inside concrete mixing machines, control of material moisture inside hoppers, on a conveyor belt		Sensor 80 mm in diameter (supplied with a fixing set). Sensor head is made of corrosion-resistant hardened steel.		
29	Moisture analyzer FIZEPR-SW100.17.2	Measurements of bulk, paste-like materials in cylindrical sampling systems as well as in screws.	 	80 mm diameter sensor is supplied with a fixing set. Sensor head is made of corrosion-resistant hardened steel. Sensor bending radius corresponds to the bending radius of the sensor mounting surface.		
30	Moisture analyzer FIZEPR-SW100.17.21	Measurements of bulk, paste-like materials in cylindrical sampling systems		Sensor is made as a 50 mm diameter piston. Allowable piston load – 5000 N		
31	Moisture analyzer FIZEPR-SW100.17.8	Control of water content in concrete mixture inside concrete mixing machines, control of material moisture inside hoppers, on a conveyor belt		Sensor 108 mm in diameter (supplied with a fixing set). Sensor head is replaceable and made of corrosion-resistant hardened steel.		


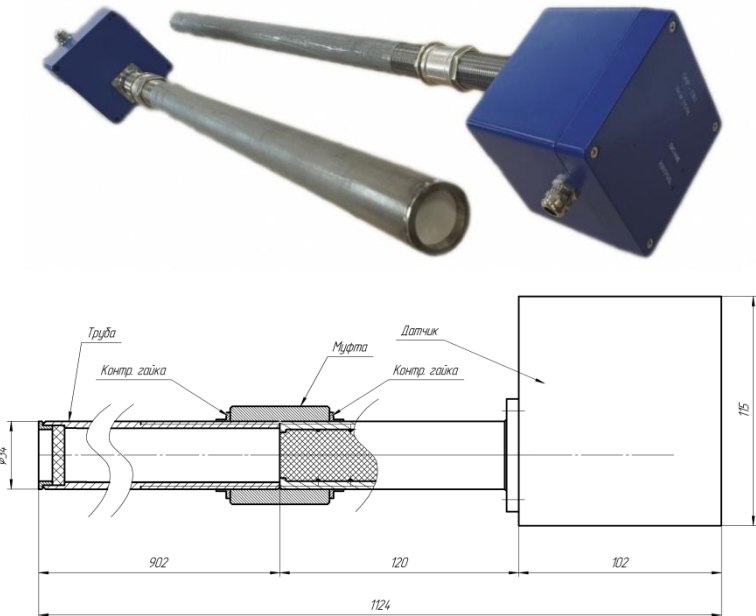
31.1	Replaceable sensor head. FIZEPR-SW100. 17.81	Replaceable sensor head for FIZEPR-SW100. 17.8 moisture meter sensor replacement in case of abrasive wear	 <p>Replaceable sensor head for FIZEPR-SW100.17.8 moisture meter sensor is made of corrosion-resistant hardened steel.</p>		
32	Moisture analyzer FIZEPR-SW100. 17.9	Control of water content in concrete mixture inside concrete mixing machines, control of bulk material moisture inside hoppers, and on a conveyor belt (sand, coal, carnallite).	 <p>Sensor 108 mm in diameter (supplied with a fixing set). Sensor head is covered with an abrasion-resistant plate made of corundum ceramics.</p>		
33	Moisture analyzer FIZEPR-SW100. 17.12	Control of water content in concrete mixture inside concrete mixing machines, control of bulk material moisture inside hoppers, and on a conveyor belt (sand, coal, carnallite).	 <p>Sensor 108 mm in diameter (supplied with a fixing set). Sensor head is covered with an abrasion-resistant disk (plate) made of corundum ceramics. Sensor design feature: the user can replace the ceramic disk without assistance.</p>		
33.1	Replaceable ceramic disk FIZEPR-SW100. 17.121	Replaceable ceramic disk made of corundum for FIZEPR-SW100. 17.12 sensor	 <p>Replaceable ceramic disk made of corundum for FIZEPR-SW100.17.12 sensor Replacement is quite easy and takes a few minutes. In order to replace the disk, unscrew sensor cover with a FIZEPR-SW100.17.122 key tool.</p>		

33.2	Wrench tool FIZEPR-SW100. 17.122	Cover removal/installation tool for ceramic disk replacement.		Wrench tool used to unscrew sensor cover for FIZEPR- SW100. 17.121 ceramic disk replacement.		
Laboratory moisture analyzers (moisture meters) FIZEPR-SW100.30.x						
34	Moisture analyzer FIZEPR-SW100. 30.2	Laboratory measurements of bulk and paste-like materials (can also be used for control of liquid materials).		Sensor contains a 220 x 100 x 100 mm rectangular measuring cell with a probe. Volume of sample controlled – 2 l. Sensor is made of AISI 321 stainless steel.		
35	Moisture analyzer FIZEPR-SW100. 30.26	Laboratory measurements of bulk, paste-like and liquid materials featuring high conductivity (including salt solutions, etc.)		Sensor contains a 220 x 100 x 100 mm rectangular measuring cell with a probe. Volume of sample controlled – 2 l. Probe is made of AISI 321 stainless steel.		

36	Moisture analyzer FIZEPR-SW100. 30.261	Laboratory measurements of bulk, paste-like and liquid materials featuring high conductivity (including salt solutions, etc.)		Sensor contains a 210 x 60 x 60 mm rectangular measuring cell with a cover. Volume of sample controlled – 0.7 l. Probe is made of AISI 321 stainless steel.		
37	Moisture analyzer FIZEPR-SW100. 30.1	Laboratory measurements mostly of liquid materials		Sensor contains a 46 mm diameter probe to make measurements in a standard 500 ml measuring cylinder (included in the scope of supply). Volume of sample controlled – 450 ml.		
38	Moisture analyzer FIZEPR-SW100. 30.11	Laboratory measurements mostly of liquid materials and measurements in tanks at different depths. Sensor is equipped with a coupling for mounting on the rod (pipe) with G1 male thread.		Sensor contains a 46 mm diameter probe to make measurements in a standard 500 ml measuring cylinder (included in the scope of supply). Volume of sample controlled – 450 ml.		



**Microwave barrier for level
SIUR-03V2**

39	Microwave barrier for level SIUR-03V2.4	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -25...+85°C.		Barrier consists of two units installed on the opposite silo walls and mounted with G1 sleeves welded on to walls (these sleeves may be added to the scope of supply when ordering). Electronic units are connected using sealed cable lead-ins.		
40	Microwave barrier for level SIUR-03V2.41	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -45...+85°C.				
41	Microwave barrier for level SIUR-03V2.5	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -25...+85°C.		Barrier consists of two units installed on the opposite hopper walls. IP66 sealed enclosure. Electronic units are connected using KOB1M-type sealed cable lead-ins (for cables/metal hoses with 9 - 17 mm outer diameter).		
42	Microwave barrier for level SIUR-03V2.51	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -45...+85°C.				

43	Microwave barrier for level SIUR-03V2.6	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -25...+85°C.	 <p>Barrier consists of two units installed on the opposite hopper walls. IP66 sealed enclosure. Electronic units are connected using KOB1M-type sealed cable lead-ins (for cables/metal hoses with 9 - 17 mm outer diameter).</p>		
44	Microwave barrier for level SIUR-03V2.61	High-level limit control when filling silos, hoppers with bulk materials. Allowable temperature of barrier unit housings: -45...+85°C.			
45	Set of two probe tubes	To ensure measurements at temperatures up to +400°C.	 <p>Set of two 700...900 mm long probe tubes with a ceramic plug and 1" (G1) coupling. Tube material is AISI 321 steel.</p>		

Additional equipment

46	Converter AS4 by "Owen"	 <p>USB – RS485 interface converter with galvanic isolation (powered from computer USB port)</p>		
47	Converter ACDR.426469.032 by NVP "Bolid"	 <p>USB – RS485 interface converter with galvanic isolation (powered from computer USB port)</p>		
48	Measuring and regulating device TRM1 by "Owen"	 <p>Digital indicator with a programmable device for discrete control of relay outputs</p>		

49	Digital operator panel SMI1-24 by "Owen"	 <p>Data display panel with editing functions for distributed control systems in RS-485 network (Modbus RTU protocol)</p>		
50	Supply unit BP30B-D3-24 by "Owen"	 <p>30 W supply unit. Output: 24V/1.25A. Input: 90...264VAC</p>		