GENERAL	1	Tag Number					**TK20HBK30 CQ001 -B01 / TK19HBK30 CQ001 -B01**			
	2	Service					MNOŽSTVÍ KYSLÍKU 1 VE SPALINÁCH NA VÝSTUPU Z EKO 3			
	3	Location	P&ID No.				Indoor		20PDRD-EO.002	
	4	Line No. / Equipment					13HBK40BR001			
	5	Area Classification					Zone 2, IIC, T3; equipment suitable for II 3G			
	6	Ambient Temperature					-20°C ... +70°C			
	7	Vibration: Amplitude	Acceleration							
	8	Design pressure / Design Temperature					±0,005 KPa-g / 500 °C			
PROCESS CONDITIONS	9	Medium	Phase				Flue Gas , see table 1 (page 3)		Gas	
	10	Mech. impurities, Erosion, Corrosion								
	11	Measured Gas					O2 / Oxygen I Flue Gas			
	12	Gas concentration	Min.	Oper.	Max.	Unit	0	3	21	%
	13	Flow	Min.	Oper.	Max.	Unit		See Table 1, page 3		% Vol
	14	Pressure	Min.	Oper.	Max.	Unit	-0,005	0	0,005	KPa-g
	15	Temperature	Min.	Oper.	Max.	Unit	254	See Table 1, page 3	458	°C
	16									
	17									
TRANSMITTER	18	Type					Remote electronics			
	19	Instrument Range	Min.	Max.	Unit		0	21	%	
	20	Calibration Range	Min.	Max.	Unit		0	21	%	
	21	Display units					%			
	22	Output signal					4-20 mA , HART, binary signals ; RS 485 (Modbus) or Ethernet			
	23	Power Supply					230 V AC; see note 5.			
	24	Local Indicator Type	Scale				Yes , LCD		0-21 %	
	25	Housing material	Housing Protection				Aluminum; epoxy coated		Min. IP 65	
	26	Electrical Connection	Cable Gland / Thread				Terminals		Note 1	
	27	Explosion proof					Vendor shall state exact ATEX marking; minimum suitable for Zone 2, IIC, T3			
PROBE	28	Model					Zirconia Probe			
	29	Length					V.T.A. - see dwg. 24LT7P-01-ID-131			
	30	Process Connection					DN 100 / PN 10, EN1092-1, Facing B1			
	31	Calibration gas inlet fitting					1/4"NPT-F thread			
	32	Power Supply					230 V AC; see note 6.			
	33	Cable length					5 m			
	34	Explosion proof					Vendor shall state exact ATEX marking; minimum suitable for Zone 2, IIC, T3			
ACCESSORIES	35	Calibration system Type					Base: instrument-only/manual calibration; Option 1: semi-auto; Option 2: full-auto			
	36	Output Pressure	Temperature	Moisture						
	37	Sampling pipe Type	Length							
	38	NO2 / NO Converter Type								
	39	Pure air generator type								
	40									
OPTIONS	41	Local Indicator Type	Scale				Yes		0-21%	
	42	Pressure control valve								
	43	Rotameter Type	Scale	Units						
	44	Certificate					CE Declaration of Conformity, ATEX certificate/declaration with exact Ex marking, calibration certificate			
	45	Air Filter regulator					Yes (connections ¼" NPT-F)			
	46	Holder Remote Electronics					Wall / 2" Pipe			
PURCHASE	47	Manufacturer								
	48	Model								
	49	Purchase Order Number								
	50	Price	Item Number							
	51	Serial Number								
	52									

Notes:
1. Cable glands for interconnection cables between remote head and probe are parts of delivery. Cable Glands material shall be nickel plated brass. Other threads for Cable Glands (Analog, Binary signals, and Power Supply) shall be M20x1,5 and cable glands are not part of delivery.
2. Bidder shall quote each calibration variant separately. Part of delivery shall include as minimum: Zirconia O2 probe with remote electronics; calibration gas connection kit; required calibration gases/regulators; Base: instrument-only/manual calibration; Option 1: semi-automatic; Option 2: fully automatic.
3. V.T.A. - Vendor to Advise
4. Bidder shall state for each calibration variant the required DCS/PLC I/O interface, including quantity of AI/DI/DO signals and signal description.
5. Vendor shall state the required power supply arrangement, power consumption, number of power feeds and recommended protection for each offered calibration variant.
6. **The zirconia oxygen analyzer shall provide continuous oxygen measurement for the determination of excess air and stoichiometric air-to-fuel ratio control**
7. SIL requirement: There is required **SIL** "**a**" as per an actual SIL study. Vendor shall give variant solution, where **SIL1** to be required.

						Zirconia Oxygen Analyzer Specification	
0	MTRO	VJAR	MLAB	14.09.2026	For Inquiry		Sheet 1 of 3
No.	By	Check	App	Date	Revision	Code: 512	Doc. No: **24LT7P-01-IS-131**

GENERAL	1	Tag Number					**TK20HBK30 CQ002 -B01 / TK19HBK30 CQ002 -B01**			
	2	Service					MNOŽSTVÍ KYSLÍKU 2 VE SPALINÁCH NA VÝSTUPU Z EKO 3			
	3	Location	P&ID No.				Indoor	20PDRD-EO.002		
	4	Line No. / Equipment					13HBK40BR001			
	5	Area Classification					Zone 2, IIC, T3; equipment suitable for II 3G			
	6	Ambient Temperature					-20°C ... +70°C			
	7	Vibration: Amplitude	Acceleration							
	8	Design pressure / Design Temperature					±0,005 KPa-g / 500 °C			
PROCESS CONDITIONS	9	Medium	Phase				Flue Gas , see table 1 (page 3)	Gas		
	10	Mech. impurities, Erosion, Corrosion								
	11	Measured Gas					O2 /Oxygen in Flue Gas			
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	13	Flow	Min.	Oper.	Max.	Unit		See Table 1, page 3		% Vol
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	16									
	17									
TRANSMITTER	18	Type					Remote electronics			
	19	Instrument Range	Min.	Max.	Unit		0	21	%	
	20	Calibration Range	Min.	Max.	Unit		0	21	%	
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	29	Length					V.T.A. - see dwg. 24LT7P-01-ID-131			
	30	Process Connection					DN 100 / PN 10, EN1092-1, Facing B1			
	31	Calibration gas inlet fitting					1/4"NPT-F thread			
	32	Power Supply					230 V AC; see note 5.			
	33	Cable length					5 m			
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ACCESSORIES	35	Calibration system Type					Base: instrument-only/manual calibration; Option 1: semi-auto; Option 2: full-auto			
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	40	Explosion proof								
OPTIONS	41	Local Indicator Type	Scale				Yes	0-21%		
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	50	Price	Item Number							
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	52									

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No.	By	Check	App	Date	Revision	Zirconia Oxygen Analyzer Specification	
0	MTRO	VJAR	MLAB	14.09.2026	For Inquiry		Sheet 2 of 3
						Code: 512	Doc. No: **24LT7P-01-IS-131**

Table 1. - Flue Gas Composition – Actual Values for fuel Mixtures used for Boiler

Load Case	**Unit**	**Case 1**	**Case 2**	**Case 3**	**Case 4**	**Case 5**	**Case 6**
Ambient pressure	kPa-g	98,5	98,5	98,5	98,5	98,5	98,5
Ambient temperature	°C	25	25	25	25	25	25
Relative Humidity	%	60	60	60	60	60	60
Boiler Load	%	100	100	100	25	25	25
Fuel Mixture	% Vol	NG	NG+TP	NG+H2	TPMAX	NG	NG+H2
FG Volume Flow	Nm3/h	158 600	158 700	156800	42 440	43 300	42 100
FG Temperature min.	°C	254	254	254	254	254	254
FG Temperature max.	°C	458	458	458	458	458	458
FG Velocity at Tmin	m/s	5,30	5,30	5,24	1,42	1,45	1,41
FG Velocity at Tmax	m/s	7,35	7,36	7,27	1,97	2,01	1,95
FG Composition							
- Argon	% Vol.	0,831	0,819	0,827	0,795	0,841	0,835
- Nitrogen	% Vol.	69,799	68,812	69,434	66,745	70,582	70,156
- Oxygen	% Vol.	0,89	0,87	0,886	2,64	3,151	2,867
- Carbon dioxide	% Vol.	8,978	8,821	8,409	7,558	7,948	7,563
- Carbon monoxide	% Vol.	0,004	0,004	0,004	0,004	0,003	0,004
- Water	% Vol.	19,497	20,674	20,441	22,258	17,475	18,575
- SOx	mg/Nm3	1,0	0,8	1,0	0,2	1,0	1
FG density	kg/Nm3	1,234	1,228	1,226	1,215	1,240	1,232
Dew point	°C	79	78	79	76	70	76