CODE: 07.338E-08-0
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ROMANIAN ENGINEERING AND DESIGN INSTITUTE FOR OIL REFINERIES PLOIESTI - ROMANIA

# **MATERIAL REQUISITION**

**ULTRASONIC FLOWMETERS** 

NO. 1168.00-36-6005.MR.E

SHEET OF CH'D APP'D REV. DATE BY 042016 CGI ( AMA U 0 MDV/ 2

REV.

00

JOB: 1168/2015
CUSTOMER: S.C. PETROTEL LUKOIL S.A. UNIT: COOLING TOWERS

SHOP INSPECTION NOT 🗌

YES [],

#### **ATTACHMENTS**

3

4

1. VENDOR'S DRAWINGS AND DATA REQUIREMENTS	
NO. 1168.00-36-6005.MR.E SHEETS 2/4 ÷ 3/4	
2. DESIGNER REQUEST NO. 1168.00-36-6005.MR.E	
SHEET 4/4	
3. FLOWMETERS – PROJECT SPECIFICATION	
NO. 1168.00-36-6006.SP.E SHEETS 1/2 ÷ 2/2	

FURNISH AND DELIVER THE ITEMS BELOW TO: \_

MATERIAL REQUIRED AT: NOT LATER THAN:

ITEM	QUANTITY	SIZE AND DESCRIPTION	CODE	
No.	AND UNIT	SIZE AND DESCRIPTION		
1.	1 SET	VENDOR'S DRAWINGS AND DATA REQUIREMENTS ACC.		
2.		TO NO. 1168.00-36-6005.MR.E SHEETS 2/4 ÷ 3/4		
1.				
2.	1 LOT	FLOWMETERS AS PER PROJECT SPECIFICATION		
3.		NO. 1168.00-36-6006.SP.E SHEETS 1/2 ÷ 2/2		
4.				
5.	1 SET*	SPARE PARTS LIST FOR TWO YEARS OPERATION		
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.		GERUL EC		
14.		NOW DE DY	01	
NOTES:	*WILL BE COI	NFIRMED BY THE CUSTOMER  NFIRMED BY THE CUSTOMER	E AS	



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### MATERIAL REQUISITION

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# VENDOR'S DRAWINGS AND DATA REQUIREMENTS

	Î Î	MATERIAL REQUISITION		NO. 1	168.00-36	6-6005.MF	R.E R
		ULTRASONIC FLOWMETERS	j.	SHEE	Т 2	OF	4
	VE	NDOR'S DRAWINGS AND DATA F	REQU	IREME	NTS	attention and the second s	
	TYPE OF	DRAWINGS/DOCUMENTS		MC	REO'D	NO. OF	T
DWG.		DESCRIPTION	RE	WG. EQ'D. S/NOT)	CD's	PRINTS	NO. ( WEE
A1	Arrangement drawi details for foundation	ngs with outline dimensions including on design		-	-	-	-
В	Cross sections and	lists of components		-	-	-	-
C1	Hydrostatic and lea		Y	ES	1	6	6
C2	Calibration certifica	tes and documents	Y	ES	1	6	6
D1	Interconnection dia	grams (electrical)	Y	ES	1	3*/6	2*/
D2	Wire and cable layo			-	-	-	-
D3	Piping and instrume			-	-	-	-
D4	Fabrication accepta	nce tests (FAT) certificates	Y	ES	1	6	6
E1	Certificates & decla	rations of conformity (see Notes)	Y	ES	1	3*/6	2*/
E2	Operating instruction	ns	Y	ES	1	6	4
F	Assembly and insta	llation details	Y	ES	1	3*/6	2*/
G	Handling drawings	weights and weight centers)	Υ	ES	1	3*/6	2*/
H1	List of recommende	d priced spare parts	Υ	ES	1	6	4
H2	Specifications		Υ	ES	1	3*/6	2*/
J1	Material specificatio	ns	Υ	ES	1	3*/6	2*/
J2	Calculation sheets			-	-	-	-
J3	Index of documents		Υ	ES	1	3*/6	4
K	Rivet and bolt sched	lule		-	-	-	-
L	List of special tools	and devices		-	-	-	-
M	Store instructions		YI	ES	1	6	4
Р	Shipment, installatio	n and start up instructions	YI	ES	1	6	4
Q	Maintenance instruc		YI	ES ·	1	6	4
and the second second second	Trouble shooting ma	nual	Y	ES	1	6	4
	Vendor data book			BANK TAN	-	12000	-
V							
W							
Z							
Υ							

#### NOTES:

- Directive for machinery 98/37/EEC
- Certification module H
- Declaration of conformity and examination certificate ATEX:94/9/EC
- Declaration of conformity EMC:89/336/EEC with amendments 91/263/EEC, 92/31/EEC, 93/68/EEC
- Declaration of conformity LV:73/23/EEC with amendment 93/68/EEC
- Material certificate: EN 10204 type as per project spec.
- Declaration of conformity PED:97/23/EC



#### **MATERIAL REQUISITION**

**ULTRASONIC FLOWMETERS** 

NO. 1168	.00-36-	6005.MF	R.E	REV.
SHEET	3	OF	4	

#### **VENDOR'S DRAWINGS AND DATA REQUIREMENTS**

#### **INSTRUCTIONS**

- 1. THE SUPPLY OF VENDOR DRAWINGS AND DATA CALLED FOR HEREIN SHALL BE COMPLETED BEFORE RENDERING FINAL INVOICES.
- 2. DOCUMENTS SHALL SHOW EQUIPMENT NUMBERS, PURCHASE ORDER NUMBERS AND VENDOR'S OWN TITLE DRAWING AND REVISION NUMBERS, ALL IN THE LOWER HAND CORNER.
- 3. DOCUMENTS SHALL BE ACCOMPANIED BY QUADRUPLICATE COPIES OF A LETTER LISTING PURCHASE ORDER NUMBERS, EQUIPMENT NUMBERS, WORK REFERENCE NUMBER, AND SHALL BE DISPATCHED(BY MAIL) IN THE FOLLOWING MANNER:
  - a) ONE COPY OF ALL DRAWINGS/DOCUMENTS AS LISTED IN THE TABLE ALONGSIDE TO THE FOLLOWING ADDRESS: TITULAR OF THE PURCHASE ORDER
  - b) THE REMAINING COPIES OF ALL DRAWINGS/DOCUMENTS TOGETHER WITH THE CD'S AS LISTED IN THE TABLE ALONGSIDE TO THE FOLLOWING ADDRESS:

S.C. "IPIP S.A."

18, DILIGENŢEI STR.

PLOIEȘTI-ROMÂNIA.

ONE COPY OF ALL DRAWINGS/DOCUMENTS IN ADDITION TO THE NUMBER OF PRINTS LISTED IN THE TABLE ALONGSIDE WILL BE PACKED WITH THE EQUIPMENT / MATERIALS AS PER GENERAL PURCHASE CONDITIONS.

- 4. DRAWINGS OR DATA RETURNED TO VENDOR FOR REVISION SHALL BE RESUBMITTED WITHIN ONE WEEK.

  ALL CHANGES INCLUDED IN THE OFFER DURING REVISIONS SHALL BE CLEARLY MARKED WITH REVISION SYMBOL
- 5. CORRESPONDENCE ACCOMPANYNG REVISED DRAWINGS AND DATA MUST SHOW PURCHASE ORDER NUMBER.
- 6. OPERATING INSTRUCTIONS SHALL COVER ALL COMPONENTS OF THE ORDER IF THE VENDOR IS FURNISHING SIMILAR EQUIPMENT ON SEVERAL ORDERS FOR THE PROJECT, A COMPOSITE INSTRUCTION MANUAL SHALL BE PROVIDED.
- 7. BUYER'S APPROVAL OF DRAWING AND DATA IS REQUIRED PRIOR TO FABRICATION.
- 8. BUYER'S APPROVAL OF CERTIFIED DRAWINGS IS REQUIRED PRIOR TO SHIPMENT.
- 9. EXTERN RIGHT HAND COLUMN SPECIFIES THE MAXIMUM NUMBER OF WEEKS DURING WHICH THE FINAL DRAWINGS MUST BE COMPLETED FROM THE DATE OF PURCHASE ORDER.
- 10. ALL DOCUMENTS TO BE SUBMITTED IN THE ENGLISH LANGUAGE.
- 11. DIMENSIONS, WEIGHTS AND MEASURES FOR DRAWINGS, ETC., TO BE METRIC UNITS.
- 12.\* DATA REQUIRED WITH BIDS.







## **MATERIAL REQUISITION**

**ULTRASONIC FLOWMETERS** 

NO. 116	8.00-36-	6005.MF	R.E	REV.
SHEET	4	OF	4	

### **DESIGNER REQUEST**

THE OFFER MUST FULLY COMPLY WITH THE PROJECT SPECIFICATIONS.

IN CASE OF DEVIATIONS FROM THE PROJECT SPECIFICATIONS, THESE DEVIATIONS SHALL BE LISTED SEPARATELY AND EXPLANATIONS INCLUDED (SEE MODEL BELOW).

NO.	SPECIFICATION NO., ARTICLE, PAGE	SPECIFIED REQUIREMENTS	DEVIATIONS	JUSTIFICATIONS

DI	n	n	EE	2'S	M	A	BA	E.
$\mathbf{D}$	$\mathbf{L}$	ப		0	1.71	м	IVI	

DATE:

**BIDDER'S SIGNATURE:** 

IF THE ABOVE ARE NOT FULFILLED, THE OFFERS SHALL NOT BE TAKEN INTO CONSIDERATION.

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CODE: 07.336E-08-0
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DES	INIAN ENGINEERING AND IGN INSTITUTE FOR OIL REFINERIES ILOIESTI – ROMANIA
OB:	1168/2015
ER:	S.C. PETROTEL-LU
VIT:	COOLING TOWERS
ю.:	
fact	urer:

PROJECT SPECIFICATION

NO. 1168.00-36-6006.SP.E SHEET

REV. 00 OF

**FLOWMETERS** 

REV. DATE BY CH'D APP'D AMA CL 0 04.2016 CGIY MDV /

2 CUSTOM JKOIL S.A. 3 UN 4

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1		Tag r	10.:			2	0-FE/FT	-001	2	O-FE/FT	-002	20-F	E/FT-C	003
2	1	Manu	facturer:				LATE	R		LATE	3	l	LATER	
3	1	Applic	cation:			PROC	ESS CO	ONTROL	PRO	CESS CO	ONTROL	PROCE	SS COI	NTROL
4		Servi	ce.			COOLIN	NG WATER	R RETURN	COOLI	NG WATER	RETURN	MAKE-UP W	ATER TO	COOLING
	17					HEADER		AND 20-T-2	HEADER		AND 20-T-4	TOW		INS
5	GENERAL	Degre	ee of protect			000	IP65		PPI.	IP65		PP.		
6	Z	Explo	sion protect	ion:				Ex d IIB T4	( E(Ex)	II 2G EE	Ex d IIB T4	( E(Ex) 11 2	G EEx	d IIB T4
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9		Proce	ss line size,	O.D.xThi	ckness: [mm]		1016 x	11		1016 x	11	32	23.9 x 8	3
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10	SS	Droce	uring princip ation type: ure rating: ng material:						·					IN
14	ĮÜ.	riess	ure raurig.				NP40			NP40			1/2/11/20/20/20	
15	100						316 SS			316 SS				
16 17	6		r material:			N	ИFR. ST	D.		MFR. ST	D.	MF	R. STD	).
17	000	Proces	ss connectio	n:			-			-			-	
18	_	Directi	on of flow:			S	TANDA	RD	5	STANDA	RD	STA	ANDAR	D
19														
20		Model	:				LATER	?	24USC	LATER	}	24VAC L	ATER	
21	꼾	Power	supply:		24VbC	220 VAC	50Hz	(External)	220 VA	C. 50Hz	(External)	220 VAC.	50Hz (E	xternal)
		Output			2(05)		0 mA, H			20 mA, F				
23	_		digital displa	۸.			Yes			Yes	1/3131			W.C.I
24	SS	Scale		у.		0.		0.11-	0		0.//-			ı.
24	\$					07	-5400 m	3/11	U	÷5400 m	3/11			n
			of registration			0.10	m3/h			m3/h			m3/n	
26	-	Electr.	conn.:	Signal	Power	9÷13 m			9÷13 n			9÷13 mm		
27	2	P	Fluid:				WATER	?		WATER	?	W	ATER	
27 28 29 30 31	의	늍	Fluid: Flow: Flow Temp. Flow Pressul Density @ I Density @1 Viscosity @ Full scale di	max.	norm. min.	4771	3976	1988	4771	3976	1988	287	239	120
29	딞	, E	Flow Temp.	(FT) ℃:	Design. Temp. ℃	38		80	38	1	80	30		80
30	8	)9/	Flow Pressur	e (barg):	Design. Press. (barg)	1.5		2	1.5		2	3		8
31	ပြု	र्क स	Density @	15℃(LIQU	JID)Ka/m³		998.9			998.9		9	998.9	
32	9	E (F)	Density @ I	F.T.(LIQU	ID)Ka/m³		992.8			992.8				
31 32 33 34	E	E E	Density @1	ata 0°C(G	AS)Ka/Nm³					-				
3/	2	5 6 8	Viscosity @	FT Cn	/ to // tg// till		0.677		-	0.677			707	
35		AS P	Full seeds di	fforostiol			0.077			0.677		·	).191	
	ᄋ	1 Q @	Full Scale di	rrerentiai	pressure:		-			-			-	
36	- 1	Straine	1	Deaerato		-		-	-			UL-EC		-
				Steam Tr	acing	-		-	-		ER	UL-EP	3	-
38			mputer				-			-/-	1-	-400	CA A	
39 8	3/1	ntegrat	ed tempera	ture sense	or		-			1	LICH C	OHDEPA	05.	2
40 2	3	ntegrat	ed pressure	sensor						12	CRIT PA	RIDEMO	50Hz (Ext mA, HAR' Yes 325 m3/h m3/h VATER 239 8 998.9 995.6	1
11 0	٢	Connec	tion Cable				-			1	100.			1
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1	. B/	ATCHIN	IG, LOADING	, BLENDIN	IG, INVENTORY, PROCE	SS CON	TROL					ORAGI		
					EKALITERS/H, KG						IONU	T-ANG	Par !	
2		TRAIGH		I, ANGLE	TYPE, IN-LINE, INSERTIO	ON TYPE,	CLAMF	P-ON TYPE		-	S	eria A	1000	
3							MALIE E	DEOL IIDED				. 0590		
3 4	. AS	S PER E	EN, ANSI RIGHT IS ST	ANDARD	DIGUT TO LEET OF DID	IDECTION					4 4 4	· COSC	26	1
3 4	. AS	S PER E		ANDARD,	RIGHT TO LEFT OR BID	IRECTION	.,	TE GOIT TED			1		2 13	
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3 4 5 5	. AS . LE 1.	S PER E EFT TO INSTRU	RIGHT IS ST JMENTS SHA MENTS TO E	ALL COMPI BE INSTAL	LY WITH IPIP-S.A. STD. : LED ACCORD. TO IPIP-S	SPEC. No	o. OWG.No				OR OR	AUI		1
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DEIAIL 5	1. II 3. II	INSTRUNSTRU	MENTS SHAMENTS TO EMENTS ARE	ALL COMP BE INSTAL ACCORDI ACC. EN 1	LY WITH IPIP-S.A. STD. I LED ACCORD. TO IPIP-S NG TO PIPING & INST. I 0204 Type 3.1	SPEC. No SA STD. D DIAGRAM	). )WG.No No.			110	OR OR	503.01		
DEIAIL 5	1. LE 1. 2. II 3. II	INSTRU NSTRU NSTRU 1. Mater 2. Site of	MENTS SHAMENTS TO EMENTS ARE	ALL COMPI BE INSTAL ACCORDI ACC. EN 1 in. ambient	LY WITH IPIP-S.A. STD. : LED ACCORD. TO IPIP-S NG TO PIPING & INST. I 0204 Type 3.1 design temp.: -26.6°C; M	SPEC. No SA STD. D DIAGRAM	). )WG.No No.			116	OR OR	503.01		
OTE	1. II 2. II 3. II	INSTRU NSTRU NSTRU 1. Mater 2. Site of	MENTS SHAMENTS TO EMENTS ARE rial Certificate conditions: Mimplete with s	ALL COMPI BE INSTAL ACCORDI ACC. EN 1 in. ambient	LY WITH IPIP-S.A. STD. : LED ACCORD. TO IPIP-S NG TO PIPING & INST. I 0204 Type 3.1 design temp.: -26.6°C; M	SPEC. No SA STD. D DIAGRAM	). )WG.No No.			110	OR OR	503.01		
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		(ipip) PRO	JECT SPECIFICA	TION	NO		2	00-36	OF	6.SP	.E
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		ROMANIAN ENGINEERING AND		2						1	4
		DESIGN INSTITUTE FOR OIL REFINERIES	FLOWMETERS		0	04.2016	CGI	(A)	AMA	Cha	М
		PLOIESTI – ROMANIA			1						L
		JOB: 1168/2015			2						
TOTAL DESIGNATION OF THE PERSON OF THE PERSO	С	JSTOMER: S.C. PETROTEL-LUKOIL S.A.	Charles and the control of the contr		3						T
20000000					4		-	-		-	╁
_	7	UNIT: COOLING TOWERS			4						L
1	L	Tag no.:	20-FE/FT-004								
2	-1	Manufacturer:	LATER								
3		Application:	PROCESS CONTROL								
4	L	Service:	TO COOLING WATER SUPPLY EXISTING HEADER								
5	GENERA	Degree of protection:	IP65								
6	N N	Explosion protection:	(€(Ex) II 2G EEx d IIB T	4							
7	思	Accuracy:	± 1% full scale								
8	1	Process line symbol:	20-1200-AR-016-C301								
9		Process line size, O.D.xThickness: [mm]	1219 x 11								
10											
11	_	Model:	LATER								_
12	1	Measuring principle:	ULTRASONIC								
13		Installation type:	CLAMP ON								
14	NS	Pressure rating:	NP40	1							
15	S	Housing material:	316 SS	1							
16	-	Sensor material:	MFR. STD.	-							
17	10	Process connection:									-
7 8 9 10 11 12 13 14 15 16 17 18	B	Direction of flow:	STANDARD	+							
19		Direction of now.	OTANDAND	-							_
20	H	Model:	LATER	-							_
	ER		220 VAC, 50Hz (External)								_
22	F	Power supply: 24V &C Outputs:	4÷20 mA, HART	GOL							
23	SMITT	Local digital display:	Yes	-							-
24	ANS	Scale range:	0÷10850 m3/h	-							
24	TRA	Units of registration:	0÷10850 m3/n m3/h	-							-
	F		9÷13 mm	-			_			-	-
26	10	First		-							_
27	Š	Elawa Japan Japan	WATER		1						Т
28	ONDITIONS	Flow: max. norm. min. Flow Temp. (FT) °C: Design. Temp. °C Flow Pressure (barg): Design. Press. (barg)	9575   7980   3990				_				
29	밁	Flow Pressure (barg): Design. Temp. C Flow Pressure (barg): Design. Press. (barg)	28 80	-						_	_
			6 8.3	-							-
31	5	Density @ 15°C(LIQUID)Kg/m³ Density @ F.T.(LIQUID)Kg/m³ Density @ 1ata,0°C(GAS)Kg/Nm³ Viscosity @ F.T. Cp Full scale differential pressure:	998.9								_
32	OPERATING	Density @ F.T.(LIQUID)Kg/m³	996.3								_
33	\$	Density @1ata,0℃(GAS)Kg/Nm³	-								-
34		O S Density @ Tata,0°C(GAS)kg/Nm³ O Viscosity @ F.T. Cp G Full scale differential pressure:	0.833								
_	ō	ਰੰ ਲੇ Full scale differential pressure:	-								
36		Strainer Deaerator									
		Electr. Tracing Steam Tracing									
38	$\cup$ L	low computer									
39	SS	ntegrated temperature sensor									
40	빙	ntegrated pressure sensor	-								
41		Connection Cable	-								
42		Notes:	-								
10	2. N 3. S	ATCHING, LOADING, BLENDING, INVENTORY, PROCI 3/H, KG/H, BARRELS/H, L/H, DEKALITERS/H, KG TRAIGHT-THROUGH, ANGLE TYPE, IN-LINE, INSERTI		PΕ							
1 4	1. A	S PER EN, ANSI EFT TO RIGHT IS STANDARD, RIGHT TO LEFT OR BID									
	1.	INSTRUMENTS SHALL COMPLY WITH IPIP-S.A. STD.	SPEC. No.			(	OR				
	2.	NSTRUMENTS TO BE INSTALLED ACCORD. TO IPIP-	SA STD. DWG.No.			(	OR				
	3.	NSTRUMENTS ARE ACCORDING TO PIPING & INST.	DIAGRAM No.			1168.0	00-32-2	503.0	1		
OTE	ES:	1. Material Certificate Acc. EN 10204 Type 3.1 2. Site conditions: Min. ambient design temp.: -26.6°C; M 3. In complete with signal cables.	Max. ambient design temp. 3	9.9° C.							